Pennsylvania Department of Transportation

Community Impact Assessment Handbook

PUB 217 (10/05)

CONTENTS

CONTENTS

CONTENTS

LIST OF TABLES

LIST OF ACRONYMS

AASHTO	American Association of State and Highway Transportation Officials
ADA	Americans with Disabilities Act
ADE	Assistant District Executive
ATV	All Terrain Vehicle
BG	Block Group
BOD	Bureau of Design
CDP	Census Designated Place
CE	Categorical Exclusion
CEE	Categorical Exclusion Evaluation
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIA	Community Impact Assessment
DEIS	Draft Environmental Impact Statement
EA	Environmental Assessment
ED	Environmental Documentation
EER	Environmental Evaluation Reports
EIS	Environmental Impact Statement
EO	Environmental Overview
EPA	Environmental Protection Agency
EQAD	Environmental Quality Assurance Division
EZ	Enterprise Zone
FEIS	Final Environmental Impact Statement

FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
FTA	Federal Transit Administration
GIS	Geographic Information Systems
KIZ	Keystone Innovation Zone
KOZ	Keystone Opportunity Zone
MCD	Minor Civil Division
MPC	Municipalities Planning Code
MPO	Metropolitan Planning Organization
NEPA	National Environmental Policy Act
PADCED	Pennsylvania Department of Community and Economic Development
PADEP	Pennsylvania Department of Environmental Protection
PAL&I	Pennsylvania Department of Labor and Industry
PASDA	Pennsylvania State Data Center
PennDOT	Pennsylvania Department of Transportation
PHMC	Pennsylvania Historic and Museum Commission
ROD	Record of Decision
R-O-W	Right-of-Way
RPO	Rural Planning Organization
TMA	Transportation Management Association
USDA	United States Department of Agriculture
USDOT	United States Department of Transportation

PREAMBLE

This handbook has been prepared as a guidance document for use in better understanding, conducting, and documenting Community Impact Assessment (CIA). CIA is about people and the communities where they live, work, shop, and play. CIA involves evaluating how people and their communities may be affected by transportation projects, both physically and socially. It entails a systematic approach to collect and process information, analyze potential impacts, and develop community sensitive solutions. To excel at CIA, we must better know the community, actively engage the public, and listen to the people. We must begin our assessment of community impacts earlier in the transportation project development process, beginning in the Planning phase. The assessment of community impacts needs to continue throughout all phases of the Transportation Project Development Process, from Planning through Construction and beyond. It is important that CIA activities and findings are documented, passed forward, and made readily available for use by the variety of project team members that may work on a project from Planning through Maintenance and Operations. This handbook provides users with an understanding and framework to better assess potential impacts of transportation projects on the lives of people and their communities.

I. Introduction

Purpose of this Handbook

Community Impact Assessment (CIA) is an iterative process used to evaluate the effects of transportation projects on a community and its quality of life. This handbook describes the CIA process and provides procedures and guidance for enhancing the assessment of potential impacts of transportation projects on communities and for effectively integrating CIA into the Pennsylvania Department of Transportation's (PennDOT's) Transportation Project Development Process. The procedures and guidance outlined in this handbook, when applied properly, will enhance PennDOT's abilities to better identify, analyze, and document potential impacts of transportation projects on communities while meeting both the spirit and letter of the National Environmental Policy Act (NEPA) and other applicable Federal and State laws, regulations, and policies. These procedures and guidance apply to all Federal aid and State-funded transportation projects.

PennDOT defined its CIA policy with Strike-Off-Letter 438-03-04 (October 24, 2003), which states, "It is the policy of PennDOT to work proactively in collaboration with communities in implementing the principles of Community Impact Assessment throughout the Transportation Project Development Process." CIA principles to be promoted during all phases of the transportation development process are:

- Recognize and understand the importance of community resources, needs, values, goals, and objectives in achieving balanced and equitable transportation decisions.
- Proactively identify and analyze community impacts
- Recognize those attributes and characteristics that define a community's "quality of life," even if they are not easily measured or quantified.
- Recognize the transportation needs and concerns of all populations within communities during the transportation decisionmaking process, including those who have not traditionally participated in community/public involvement activities.
- Promote meaningful citizen participation and community/public involvement

This handbook builds on this policy by establishing procedures to enhance and improve CIA activities and practices that PennDOT is already performing. The goal of these procedures is to better fulfill the intent of Federal and State laws, regulations, and policies concerning CIA, and to ensure that transportation projects reflect community values and needs. These procedures are consistent with PennDOT's "Plan for a New Pennsylvania," and strive to make the Department increasingly aware and respectful of community resources, needs, values, goals, and objectives. The procedures described herein were developed for all classes of transportation projects including those that require the preparation of Categorical Exclusion Evaluations (CEEs), Environmental Assessments (EAs), and Environmental Impact Statements (EISs).

Background

Transportation facilities and services make important contributions to a community's quality of life and its economy. Proposed transportation improvements can have a variety of impacts, positive and/or negative, on people and the surrounding natural, cultural, and social environment. The assessment of environmental impacts for major transportation improvements has been taking place for many years, with much attention initially given to the assessment of natural resource impacts. Over time, PennDOT has become more sensitive to developing transportation projects that better fit within the context of the many diverse communities found throughout Pennsylvania. Consequently, a better understanding and assessment of community issues in relation to transportation actions is becoming increasingly important in the transportation decision-making process.

Traditionally, evaluation of community issues has been based primarily on demographic, land use, and economic data and information, in combination with public meetings beginning in the Preliminary Design phase. These evaluations generally provided a good understanding of the needs of municipal governments and some segments of the community. This approach relied primarily on readily available quantitative data and public input via conventional public meetings and hearings. To truly understand the dynamics of a community requires PennDOT to take an extended approach. As Federal and State legislation and guidance on community issues evolved, PennDOT began to define an extended approach to CIA.

CIA is an iterative process used to evaluate the effects of a proposed transportation action on a community and its quality of life. Issues of concern typically include: community cohesion; displacement of people, businesses and farms; community facilities and services; aesthetic and other natural and physical environmental values; and other community issues. CIA provides the framework for the identification and analysis of not only quantitative data, but also qualitative characteristics, derived from interaction with the community, that help define "quality of life."

An important consideration in performing effective assessments of potential impacts of transportation projects on communities involves identifying and understanding the concept of a community. The concept of "a community" is abstract. In simple terms, communities are comprised of people with common interests, and the places where these people live, work, shop, socialize, conduct business, and recreate. Communities can be identified based on geographical, natural, physical, social, racial, ethnic, religious, and economic relationships or characteristics that members have in common with one another. Each of these varied relationships contributes to a sense of common unity and community cohesion that define one's sense of place.

The assessment of a community's needs, values, goals, and objectives helps ensure that transportation policies and investments embrace the views of neighborhoods, communities, and society as a whole. Understanding the relationship between transportation actions and quality of life can lead to projects that fit more harmoniously within the context of the community. Recognition of community attributes, goals, and

objectives, coupled with an understanding of transportation needs, allows PennDOT, its consultants, and planning partners to better assist communities by providing needed transportation facilities and services, while also helping them to achieve local community goals and objectives.

Performing effective CIA entails: the consideration of community resources, needs, values, goals, and objectives; the evaluation of potential project impacts on the community; the determination of the significance of those community impacts; the development of solutions that are sensitive to the context of the community; the documentation of community impacts and solutions; and continuing collaboration with affected communities. A key consideration is the emphasis on early and continuing coordination throughout the project development process with community stakeholders, such as metropolitan planning organizations (MPOs), rural planning organizations (RPOs), municipal officials, business leaders, neighborhood groups, and the general public, including those who have not traditionally participated in community/public involvement activities.

CIA is an iterative process that spans the various stages of PennDOT's Transportation Project Development Process, from Planning through Maintenance and Operations. CIA activities should be initiated during the Planning phase and revisited, at varying levels of detail, throughout the many phases of the Transportation Project Development Process.

The CIA process contains the following six steps, which are described in greater detail in later sections of this handbook:

Step 1 – Project Understanding and Define the CIA Study Area Boundaries
Step 2 – Establish Baseline Conditions
Step 3 – Identify and Analyze Potential Beneficial and Adverse Impacts
Step 4 – Determine Significance of Potential Impacts
Step 5 – Identify Solutions
Step 6 – Document Findings

This handbook is divided into four sections, including this introductory section. Section II summarizes the Federal and State laws and regulations governing CIA. Section III presents a detailed methodology for conducting CIA. Section IV presents the CIA process and its relationship to the Transportation Project Development Process and community/public involvement.

Pennsylvania is a very diverse state both in terms of its people and its places. The Commonwealth is home to people of differing racial, cultural, ethnic, religious, and economic backgrounds. These people live in a variety of community settings ranging from large urban cities like Philadelphia and Pittsburgh, to small rural towns and villages. Every community within the Commonwealth is unique and not exactly like any other. Similarly, each transportation improvement project is also unique and not exactly like another. While there is a basic CIA framework outlined in this handbook, there is no "one size fits all" tool or formula for performing assessments of community impacts.

While the CIA Process, as defined in this handbook, runs throughout the entire Transportation Project Development Process, from Planning through Maintenance and Operations, the procedures described herein were developed primarily for application during the Preliminary Design phase on major projects such as those requiring the preparation of EISs, EAs, and Level 1B and Level 2 CEEs where community issues, resources, and concerns are present. The level of effort and the tools and techniques applied to perform assessments of community impacts, which will vary from project to project and community to community, should be consistent with the scope of the project and the community in which it is proposed.

The procedures herein are not an adjudication or regulation. There is no intent on the part of PennDOT of give the procedures in this handbook weight or deference. This document establishes the framework within which PennDOT will exercise its administrative discretion in the future. PennDOT reserves the discretion to deviate from this handbook if circumstances warrant. This handbook is for informational purposes; it is not regulatory.

These procedures will be updated as needed through the issuance of revisions or updates. The Bureau of Design – Environmental Quality Assurance Division (BOD – EQAD) will issue revisions and make technical modifications as necessary. Direct questions, comments, or suggestions about information in this handbook to:

Pennsylvania Department of Transportation
Bureau of Design
Environmental Quality Assurance Division
400 North Street, Seventh Floor
Harrisburg, PA 17120-0094
Phone: 717-787-1024
Fax: 717-772-0834

II. Legal Basis for CIA

The legal basis for performing CIA in Pennsylvania is contained in a series of Federal and State laws, regulations, and policies related to the planning and development of transportation projects in the Commonwealth. Since the 1960s, Federal legislation has required Federal transportation agencies to consider the social impacts of their policies, programs, and actions on affected communities. Pennsylvania state legislation also supports the assessment of community impacts in the development of transportation projects. Both Federal and State legislation recognizes the linkages between transportation infrastructure and land use to the quality of life in communities. The legal basis for conducting CIA is summarized below.

Federal Legislation and Policy

National Environmental Policy Act of 1969

The National Environmental Policy Act (NEPA) [42 U.S.C. § 4321-4347] requires that an activity or project receiving Federal funding or requiring Federal approval undergo an analysis of the effect of such action upon the natural and human environment. The Council on Environmental Quality (CEQ) regulations implementing NEPA [40 CFR 1508] defines the human, natural, and physical environments, and the relationship of people with the environment. The effects to be assessed include the ecological, social, economic, aesthetic, historic, cultural, and health, whether direct, secondary, or cumulative.

Federal-Aid Highway Act of 1970

The Federal-Aid Highway Act of 1970 as codified in 23 U.S.C. § 109(h) requires agencies to "…assure that possible adverse economic, social, and environmental effects relating to any proposed project on any Federal-aid system have been fully considered in developing such project, and that the final decisions on the project are made in the best overall public interest." The community and social effects to be considered include: "…destruction or disruption of man-made resources, aesthetic values, community cohesion, and availability of public facilities and services; adverse employment effects; tax and property value losses; injurious displacement of people, businesses, and farms; and disruption of desirable community and regional growth."

Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and the Uniform Relocation Assistance Act Amendments of 1987 and 2005

This law seeks to ensure that all people whose real property is acquired or those who are displaced as a result of projects receiving Federal funds, will be treated fairly and equitably and will receive assistance in moving from the property they occupy.

Title VI of the Civil Rights Act of 1964 and Related Statutes

Title VI of the Civil Rights Act establishes a federal policy that discrimination on the grounds of race, color, or national origin shall not occur in connection with programs or activities receiving Federal financial assistance. Essentially, this policy states that

individuals and communities cannot be refused the benefit of federally funded transportation programs. Other laws with wording similar to Title VI protect people from the following groups: age, sex, handicapped / disability, and religion.

The Americans with Disabilities Act of 1990

The Americans with Disabilities Act (ADA) extends the protection of the 1964 Civil Rights Act to the disabled, prohibiting discrimination in public accommodations and transportation and other services. The ADA stipulates involving the community, particularly those with disabilities, in the development and improvement of transportation services.

Executive Order 12898 on Federal Actions to Address Environmental Justice (1994)

Executive Order 12898 requires federal agencies to ensure that minority and low-income populations are not subject to disproportionately high and adverse environmental effects of Federal policies, programs, and projects.

23 CFR 771, Environmental Impact and Related Procedures

The U.S. Department of Transportation, Federal Highway Administration (FHWA) regulations for implementing the procedural requirements of NEPA require that FHWA evaluate "alternative courses of action" and make decisions "in the best overall public interest based upon a balanced consideration of the need for safe and efficient transportation; of the social, economic, and environmental impacts of the proposed transportation improvement; and of national, state, and local environmental protection goals (771.105 (b))."

1987 FHWA Technical Advisory 6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents

FHWA Technical Advisory T 6640.8A establishes a number of social impact issues which should be considered in preparing environmental impact assessments, including the beneficial and adverse effects of: changes in the neighborhoods or community cohesion; changes in travel patterns and accessibility for all modes of transportation; impacts on school districts, recreation areas, churches, businesses, police and fire protection; impacts of transportation alternatives on highway and traffic safety and overall public safety; and changes in employment opportunities. Environmental documents should assess the effects of the proposed action on the elderly, handicapped, non-drivers, transit-dependent individuals, and minority and ethnic groups, and discuss whether any social group is disproportionately impacted. Possible mitigation measures to avoid or minimize any adverse effects should also be identified and discussed.

1996 U.S. Department of Transportation, FHWA Publication, Community Impact Assessment: A Quick Reference for Transportation

In 1996, the FHWA, at the request of the American Association of State Highway Transportation Officials (AASHTO), began efforts to refocus transportation professionals and enhance their expertise on addressing community impact issues. *Community Impact Assessment: A Quick Reference for Transportation* provides a framework for the community impact assessment process, highlights critical issues, identifies tools and

sources, and serves to heighten awareness of the impacts of proposed transportation actions on communities, neighborhoods, and people.

State Legislation and Policy

Pennsylvania Act 120

Pennsylvania Act 120 [71 P.S. § 512] requires the Department of Transportation to consider "residential and neighborhood character and location, ...displacement of families and businesses, ...recreation and parks, ...aesthetics, ...public health and safety, ...economic activity, ...employment, ...fire protection, ...public utilities, ...religious institutions, ...the conduct and financing of government including the effect on the local tax base and social service costs, ...natural and historic landmarks, ...and education, including the disruption of school district operations" in the preliminary planning and design of certain transportation projects.

Pennsylvania Act 247

Pennsylvania Act 247 of 1968 as amended, also known as the Municipalities Planning Code (MPC), is the State law which prescribes the procedural requirements for the development of comprehensive plans, zoning ordinances, subdivision and land development ordinances, and other aspects of land use planning in all jurisdictions of the Commonwealth, except for Philadelphia and Pittsburgh. Under Section 619.2, "Effect of Comprehensive Plans and Zoning Ordinances of the MPC," under certain circumstances, State agencies are to consider the comprehensive plans and zoning ordinances of counties and local municipalities in reviewing their applications for funding or permitting of infrastructure patterns.

Pennsylvania Executive Orders 1993-3 and 1999-1

Commonwealth of Pennsylvania Executive Order 1993-3, "State Land Use Planning – Goals and Objectives for Commonwealth Agencies," and Executive Order 1999-1, "Land Use Planning," seek to increase the consideration and understanding of the link between transportation actions and local planning initiatives. Under EO 1993-3, State agencies are to consider a series of State-level land use goals and objectives in implementing agency plans and actions. One of these goals is to "…establish efficient land use patterns by encouraging growth which is consistent with existing infrastructure patterns."

EO 1999-1 establishes a policy to guide all State agencies, when making decisions that impact the use of land, by seeking to improve the understanding of the impact of land use decisions on the environmental, economic, and social health of communities.

PennDOT Strike-off Letter No. 438-03-04, Policy on Community Impact Assessment

In October 2003, PENNDOT issued a *Policy on Community Impact Assessment*, which states, "It is the policy of PENNDOT to work proactively in collaboration with communities in implementing the principles of Community Impact Assessment throughout the Transportation Project Development Process." CIA principles to be promoted during all phases of the Transportation Project Development Process are:

- Recognize and understand the importance of community resources, needs, values, goals, and objectives in achieving balanced and equitable transportation decisions.
- Proactively identify and analyze community impacts
- Recognize those attributes and characteristics that define a community's "quality of life," even if they are not easily measured or quantified.
- Recognize the transportation needs and concerns of all populations within communities during the transportation decisionmaking process, including those who have not traditionally participated in public involvement activities
- Promote meaningful citizen participation and public involvement

The information contained in Strike-Off-Letter 438-03-04 is now embodied in this handbook. Therefore, this handbook supersedes Strike-Of-Letter 438-03-04.

III. CIA Methodology

This section presents the methodology associated with the steps that PennDOT suggests one take in preparing an assessment of transportation-related impacts on communities within the overall Transportation Project Development Process. The CIA process contains the following six steps:

Step 1 – Project Understanding and Define the CIA Study Area Boundaries
Step 2 – Establish Baseline Conditions
Step 3 – Identify and Analyze Potential Beneficial and Adverse Impacts
Step 4 – Determine Significance of Potential Impacts
Step 5 – Identify Solutions
Step 6 – Document Findings

The level of effort involved for each step is a function of the size and complexity of the project, the potential for significant community impacts, and the potential for public controversy on environmental grounds. CIA is an iterative process that spans the length of the Transportation Project Development Process from Planning through maintenance and operation. Depending on the duration of the project, it may be necessary to revise and update information, or even repeat certain CIA steps, throughout the life of a transportation project. The steps are discussed in greater detail on the following pages.

Step 1 – Project Understanding and Define the CIA Study Area Boundaries

The first step of the CIA process entails gaining an understanding of the proposed project and its potential to impact the surrounding community or communities, and defining the study area boundary for the assessment of community impacts. Having a good understanding of the proposed project and its potential to impact communities is essential to properly scope and develop the project. Obtain information on the proposed project as early in the Transportation Project Development Process as possible and include: project purpose, project need(s), potential alternatives, logical termini, a general order of magnitude estimate of potential impacts, and an identification of potential community issues. Information on project history and prior planning studies associated with the project such as visioning activities, comprehensive plans, and traffic studies undertaken by communities and/or planning partners, should also be obtained. This information can be obtained through review of available project files, field reconnaissance, and interviews of project sponsors, planning partners, project stakeholders, and PennDOT staff. Upon obtaining an understanding of the proposed project, boundaries for the CIA study area can be established.

Project impacts can occur throughout a community or communities and are not necessarily limited to those areas immediately adjacent to a proposed project. Therefore, the boundaries for assessing community impacts may be broader than typical study area boundaries, which encompass the range of reasonable alternatives. Define the CIA study area using a review of the varied physical, natural, administrative, social, and economic

boundaries associated with a community. Consultation with project sponsors, planning partners, stakeholders, community leaders, and PennDOT staff, as well as performing field reconnaissance may be of assistance in developing CIA study area boundaries.

CIA study area boundaries should be established to clearly identify the potentially impacted communities and the areas where data is to be collected and analysis is to be performed related to potential community impacts. When developing CIA study area boundaries, consider existing community features, characteristics, and boundaries, such as:

- Physical boundaries – boundaries of man-made elements (e.g., bridges, roadways, railroad tracks, buildings) or land use characteristics that form distinct visual or community edges.
- Natural boundaries – boundaries created by natural features of the landscape (e.g., topography, watersheds, bodies of water, wildlife habitat, and vegetative natural communities) that form distinct visual or community edges.
- Administrative boundaries – political boundaries and boundaries of public organizations (e.g., townships, counties, school districts, water/sewer authorities, Census tracts and blocks)
- Social boundaries – boundaries of ethnic concentrations, influence and extent of social, civic, and religious backgrounds.
- Economic boundaries – boundaries of areas and types of employment and commercial opportunities (e.g. business district, DCED Enterprise Zone, agricultural security areas)

Clearly delineate the CIA study area boundaries on project maps and graphics, and make them available to the public in a variety of forums (e.g., plans displays, public meetings, project websites, newsletters). Periodically reassess the CIA study area boundaries during the project development process, and modify them (expand or contract) as necessary based on stakeholder input, changes in the proposed project or changes in the dynamics of the affected community or communities.

Step 2 – Establish Baseline Conditions

A community's baseline conditions are a summary of the key community features and characteristics within the CIA study area. The purpose for establishing the baseline conditions is to gain an understanding of key tangible and intangible features present and the key characteristics of the communities within the CIA study area in relation to the proposed project. Perform the identification and review of baseline conditions in consultation with the MPO/RPO, local officials, and community stakeholders. Periodically reassess the baseline conditions throughout the project development process and modified as necessary.

A Community Context Audit can be initiated during this step. The Community Context Audit, developed through PennDOT's Context Sensitive Solutions initiative, is intended

to be a guide to identify various community characteristics that make each transportation project location unique to its residents, its businesses and the public in general. This information will help to define the goals and objectives of the proposed transportation improvements based upon community character, setting, goals, and local plans for future development. The Community Context Audit is designed to take into account the community's history or heritage, present conditions and anticipated conditions. Take into account the interaction of persons and groups within the community when considering factors such as mobility and access (vehicular, non-vehicular and transit modes), safety, local and regional economics, aesthetics and overall quality of life when conducting the Community Context Audit. The Community Context Audit can be conducted in conjunction with PennDOT's environmental review process as an integral part of the project development process. The Community Context Audit can be performed in the early stages of the Transportation Project Development Process as part of the project identification in order to provide necessary documentation to support development of a project's goals and objectives. The Community Context Audit can also be updated and revised during later stages of the Transportation Project Development Process. A copy of the Community Context Audit form is attached as Appendix C.

Typically some form of community/public involvement occurs during this step of the process. Community/public involvement during this step can include a range of activities aimed at gathering information from community stakeholders and presenting the baseline information. One of the purposes of community/public involvement activities at this time is to verify that the study team has adequately identified the CIA study area and its baseline conditions.

The establishment of baseline conditions should include the identification and mapping of the locations of community resources. However, the identification of community resources should not only focus on their physical location, but also on their function, value, quality, and capacity. Qualitative and quantitative data about communities can be collected from a variety of sources to establish community baseline conditions. Community characteristics and features contributing to the establishment of baseline conditions, along with key indicators, and potential data sources, are discussed on the following pages and summarized at the end of this section in Table III-1. The list of data sources provided here is not exhaustive, but provides a starting point for gathering information. Depending on the scope and scale of the project, certain community resources may receive more or less attention. In addition to the data sources listed in Table III-1 and described in greater detail on the following pages, information gathered during field views is vital to establishing baseline conditions. Field views may

Suggested Community Features for Mapping

- Cemeteries
- Community centers (ethnic or civic clubs)
- Cultural centers (museums, theaters)
- Emergency services (police, fire, ambulance)
- Health care facilities (hospitals, major clinics)
- Historic sites
- Libraries
- Municipal buildings
- Parks and recreation facilities
- Places of worship
- Public housing
- Schools

be supplemented by viewing PennDOT video logs, available on PennDOT's web site. Please note that more and more information on communities is becoming available through the Internet. Web site addresses for several key data sites are listed in Table III-1. However, CIA is not a desktop exercise. Spend time in the communities you are analyzing, make observations, conduct field reconnaissance, and interview community leaders and residents.

Topics to Consider

Community Cohesion

Community cohesion can be defined as the degree to which people have a sense of belonging to their community, the level of commitment people feel for the community, or a strong attachment for neighbors, groups and institutions, usually as a result of continued association over time. Community cohesion is also a physical concept, in that barriers to community cohesion may involve the location of highways, railroad tracks, or other transportation facilities that block community interaction. Community cohesion can exist at both the neighborhood and larger community level.

A neighborhood can be defined as an area with an identity that can be distinguished from the larger jurisdiction (city, borough or township) and where the daily life of residents involves contact with or dependence on other neighborhood residents, businesses and facilities. Conduct a field view through possible neighborhoods to define the boundaries of the neighborhood and observe variables that may be associated with community cohesion. Self-identification by residents of a neighborhood and area name identification are two primary indicators of cohesion. Other variables indicating the presence of cohesion include informal social interaction and interdependence (e.g., a Neighborhood Watch program or other formalized neighborhood organizations), pedestrian activity, gathering locations and common areas, and children at play. Where possible, document these observations over a period of time.

Community cohesion at the larger municipal level is indicated by the presence of a strong local identity and heritage, special community values (see below), seasonal community events, well-utilized local recreational areas, and attendance at community activity centers and gathering places. The presence of long-serving, active community leadership is another indicator of community cohesion.

To gather information on community cohesion, look at historic development patterns, interview residents and community officials, study the layout of neighborhoods, parks and other gathering places, and spend time in the CIA study area. Note if residents express particular concern for their neighborhood or community during community/public involvement activities.

Community Interaction, Governance, Leadership, and Activism

Obtaining information on community interaction, governance, leadership and activism can provide insight into how the community works politically. This information may be helpful in identifying potential community stakeholders and in identifying outlets for

conveying project information. Information on how the community interacts can be obtained by searching media sources, including newspapers/newsletters, radio and television, and locations for popular social interaction. Identify and coordinate with local government, advisory boards, community and civic organizations, and other non-governmental groups. Develop a working knowledge of the influence and role of these groups in representing the community during decision-making.

Demographics/People

Identifying key characteristics of the people who live and work within potentially affected communities is important to gaining an overall understanding of the communities. Gather information on relevant demographic characteristics of the affected area. Consider including the following demographic characteristics as appropriate for a given project and community: population size, gender, age, ethnic and racial background, and income and poverty levels. Other demographic characteristics, such as educational attainment and housing characteristics, can be collected as necessary. Investigate historic trends and future projections of demographic characteristics to identify if any substantial population changes have occurred.

The U.S. Census Bureau data is a readily available source of demographic information. Census data is available at a number of

U.S. Bureau of Census, Selected Geographic Terms

- **Census geography** A collective term referring to the types of geographic areas used by the Census Bureau in its data collection and tabulation operations, including their structure, designations, and relationships to one another.
- **Census designated place (CDP)** A statistical entity, defined for each decennial census according to Census Bureau guidelines, comprising a densely settled concentration of population that is not within an incorporated place, but is locally identified by a name. CDPs are delineated cooperatively by state and local officials and the Census Bureau, following Census Bureau guidelines. Beginning with Census 2000 there are no size limits.
- **Minor civil division (MCD)** A primary governmental and/or administrative subdivision of a county, such as a township, precinct, or magisterial district. MCDs exist in 28 states and the District of Columbia. In 20 states, all or many MCDs are general-purpose governmental units: Connecticut, Illinois, Indiana, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Pennsylvania, Rhode Island, South Dakota, Vermont, and Wisconsin. Most of these MCDs are legally designated as towns or townships.
- **City** A type of incorporated place in 49 states and the District of Columbia. In 23 states and the District of Columbia, some or all cities are not part of any Minor Civil Division (MCD), and the Census Bureau also treats these as county subdivisions, statistically equivalent to MCDs.
- **Census tract** A small, relatively permanent statistical subdivision of a county delineated by a local committee of census data users for the purpose of presenting data. Census tract boundaries normally follow visible features, but may follow governmental unit boundaries and other non-visible features in some instances; they always nest within counties. Designed to be relatively homogeneous units with respect to population characteristics, economic status, and living conditions at the time of establishment, census tracts average about 4,000 inhabitants. They may be split by any sub-county geographic entity.
- **Census block** A subdivision of a census tract (or, prior to 2000, a block numbering area), a block is the smallest geographic unit for which the Census Bureau tabulates 100-percent data. Many blocks correspond to individual city blocks bounded by streets, but blocks - especially in rural areas - may include many square miles and may have some boundaries that are not streets. The Census Bureau established blocks covering the entire nation for the first time in 1990. Previous censuses back to 1940 had blocks established only for part of the nation. Over 8 million blocks are identified for Census 2000.
- **Census block group (BG)** A subdivision of a census tract (or, prior to 2000, a block numbering area), a block group is the smallest geographic unit for which the Census Bureau tabulates sample data. A block group consists of all the blocks within a census tract with the same beginning number.

Example: block group 3 consists of all blocks within a 2000 census tract numbering from 3000 to 3999. In 1990, block group 3 consisted of all blocks numbered from 301 to 399Z

geographic levels such as states, counties, places, census tracts, block groups, and blocks. Please be aware that some demographic variables are not available at the lowest levels (blocks and block groups). The level of census geography to be used for a project is a function of the size of the CIA study area, and the complexity and extent of the community issues related to the proposed project.

While demographic data can be helpful, there is no better way to find out about the people of a community than visiting, observing, and spending time in the community and talking with people.

Economic, Employment, and Business Conditions

Transportation projects may impact the economy, including the amount and type of employment in a community, and the conditions under which businesses operate. Economic data is typically analyzed at the county level, and for some data, at the local level. The U.S. Census Bureau has a standard classification system to analyze data at various geographical levels, beginning with national and state data, and ending with a single neighborhood block. However, the county is often the smallest geographical area for which certain economic data can be found. Study area boundaries and political boundaries often do not coincide neatly, so use professional judgment to select the most appropriate level for analysis.

Gather information on types of employment/occupations and the major employers in the region. Certain sectors of the economy, e.g., tourism, manufacturing, agriculture, or mining, may provide a large proportion of employment in the region. These sectors may be growing or lagging in comparison to previous decades, and those should be investigated. Similarly, gather data on unemployment levels and how they have changed over time.

Review community travel patterns to gain an understanding of who and how existing transportation facilities are being used. Information can be collected on how residents commute from their place of residence to their place of work, as well as how goods are moved/shipped through the area.

A transportation project may impact a community (or a segment of the community) differently depending on whether it is largely affluent or working class. For example, discontinuing a bus route might cause greater problems in a working class neighborhood because residents might not have access to alternative modes of transportation. Therefore, gather CIA data on median income and wage levels in the community, and compared to the cost-of-living index, as well as surrounding areas and the state. Identify historic trends in income and wage levels.

Understand the local business climate. Identify major commercial centers in a community, along with the availability and condition of commercial space. Investigate how local business taxes are structured, and indicate the general sources of competition that local businesses face.

Gather information on economic development programs in the community. A transportation project should strive to have a neutral or positive effect on economic development.

Local Identity and Heritage and Community Values

Gather information on the history, traditions, events, and other cultural resources that contribute to community identity and pride to help determine potential impacts to those resources during Step 3 of this process. Identify and characterize significant ethnic neighborhoods. Community values may be present, or a community may be associated with a special industry, a center of governmental activity, or strongly linked to a famous individual or event (e.g. Hershey, Gettysburg). Be aware of the relationships that substantially define the values and identity of a community. Community values can be defined as a set of ideals that are shared among individuals that identify themselves as a group (FLDOT 2000).

Review secondary sources such as, comprehensive plans, local histories, local government websites, chambers of commerce, tourism organizations, the Pennsylvania Historical and Museum Commission (PHMC), PennDOT's Cultural Resources database, and local newspapers and newsletters to gather information on local identity, heritage, and special community values. Interviews of key community leaders and residents can provide insight into the local identity, heritage, and special community values of the community. Community/public involvement activities (see Section IV) are another method that can be used to gain insight into the local identity, heritage, and special community values of the community.

Aesthetics

Identify recognized places, buildings, views, landscapes, or natural features that are considered aesthetically pleasing and/or displeasing to the community. A community aesthetic and visual resource can be broadly defined as a "natural or cultural feature of the environment that elicits positive sensory reactions and evaluations by the observer" (Canter 1996). Examples include scenic views, street trees, and historic structures. Conversely, an aesthetic or visual detractor can be defined as a structure or feature that elicits a pronounced negative sensory reaction and evaluation by the observer. Possible detractors may include a landfill, auto salvage yard, and deteriorating or abandoned buildings or other structures. Field views and interviews with community stakeholders can be used to identify aesthetically pleasing and/or displeasing resources within the community. Community stakeholder involvement in defining aesthetic resources is important, as aesthetic character is highly subjective and those who will be affected by the project should help determine what aesthetic resources are present.

Community Facilities

In general, a community facility is a public or private organization that a local population relies upon for services. Community facilities include, but are not limited to:

- Schools
- Religious institutions

- Parks, recreation centers, and playgrounds
- Pedestrian and bike trails
- Special needs residential facilities
- Hospitals and other health facilities
- Community and senior centers
- Libraries

Identify the location and characteristics of community facilities within the study area to help determine whether they would be impacted by a project during Step 3 of the CIA process. Important aspects of community facilities include the social events and services these facilities provide, and how they influence the community. Information on the location of community facilities can be obtained from secondary sources of information like comprehensive plans, yellow page or city directories, and local government websites and offices. Verify this information with a field view. Information on the characteristics of community facilities can be obtained from the people of the community through interviews of facility representatives, facility users, and the general public. Find out about the populations served by the community facilities and determine whether it serves any special populations.

Investigate mobility and access issues concerning community facilities. Identify how community members access community facilities by using field views, surveys conducted in residential areas or at community facility sites, interviews with facility representatives and users, and community/public involvement activities. Map bicycle/pedestrian paths, especially routes utilized by schoolchildren. Be aware of school bus routes and the travel patterns of commuters.

Infrastructure and Public Utility Services

Gather information on the location and provision of water, wastewater, waste disposal, electrical, natural gas, transportation, and other infrastructure and services (including Act 537 plans) to help assess potential impacts. This information can assist in understanding potential growth areas and constraints to development. Information on the location of infrastructure and public services can be obtained from secondary sources of information like comprehensive plans, and local government websites and offices. Verify this information with a field view. Information on the characteristics of these services can be obtained through interviews of local government officials, facility representatives and operating authorities, and through community/public involvement activities.

Public Safety and Emergency Services

Identify the locations of, and mobility/access to, police, fire, and ambulance services to help determine, during Step 3, whether these services would be impacted and how it would effect the provision of those services to the community. Information on the location of public safety and emergency service facilities can be obtained from readily available secondary sources of information like comprehensive plans, yellow page or city directories, and local government websites and offices. Verify this information with a field view. Interview emergency service providers about issues related to access routes, response times to emergencies on area roadways, crime, and personal safety within the

community. Interviews with the general public can help identify the perception of how the project may impact the provision of these services to the community.

Social Services

Gather information on social services to help determine potential impacts resulting from a transportation project. Social services may include food banks, homeless shelters, job training, transportation services, and financial counseling services (and related government offices). Information on the location of public social service facilities can be obtained from secondary sources of information like comprehensive plans, yellow page or city directories, minority assistance programs, and local government websites and offices. Obtain information on the populations served by the social service facilities and determine whether it serves any special populations. Verify this information with a field view. Identify mobility/access issues related to these services, especially for elderly and low-income populations. Interviews with the general public can help identify the perception of how the project may impact the provision of these services to the community.

Ecological Context

Special relationships can exist between the community or human environment and the natural environment that contribute to a community's sense of place. Identify these relationships, to help determine potential impacts resulting from a project. These relationships can be related to recognized natural resources, landscapes, habitats, or ecological qualities important to the community. The identification of special relationships between the community and the natural environment can be performed through interviews with key local officials and the people of the community, reviews of comprehensive plans, and community/public involvement activities.

Land Use and Land Management

Obtain information on current and future land use to help determine, during Step 3, potential impacts to a community's land use patterns and trends. Gather information on current and future land use patterns; local planning programs; land organizations and conservation groups; conservation easements and conserved open space; substantial land owners; special land uses which contribute to the uniqueness of a community; property values and land acquisition costs; and land protection and taxing programs. Current and future land use and land management information can be obtained from secondary sources of information like county and local municipal comprehensive plans, zoning maps, tax records, and local, regional, and state government websites and offices. Verify this information with a field view. Further information on the land use patterns, programs and issues can be obtained through interviews of local, regional and/or state government officials, community organizations, and realtors, and through community/public involvement activities.

Table III-1, Community Characteristics and Data Collection

Community Characteristic	Key Indicators	Potential Data Sources
Human Environment		
Community cohesion	the degree to which residents have a sense of belonging to their neighborhood or community, a level of commitment of residents to the community, or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time.	• local newspaper • community organizations • interviews and community/public involvement • comprehensive plan
Community interaction	information and media sources, locations for popular informal social interaction.	• Yellow page or city directories • community organizations • interviews and community/public involvement
Governance	local government structure, advisory boards, and demographic profiles of elected and appointed government leaders	• local government website/office • school district • interviews and community/public involvement
Community leadership and activism	community organizations (social, business, volunteer, civic, etc.) and other non-governmental groups and the influence and role of these groups in representing the community during decision making.	• Chamber of Commerce • Yellow pages or city directories • interviews and community/public involvement
Demographics	population, gender, age, ethnic and racial background, income and poverty levels	• U.S. Census Bureau (www.census.gov) • PASDA (www.pasda.psu.edu) • MPO/RPO • PA DEP eMap (www.emappa.dep.state.pa.us) • comprehensive plan (www.landuseinpa.com) • local government website/office
Economics, employment, and business conditions	types of employment, employers, types of businesses, types of occupations, income and wage levels, cost-of-living index, local taxation, unemployment levels, and local economic development programs.	• U.S. Census Bureau (www.census.gov) • PASDA (www.pasda.psu.edu) • PA L&I (www.dli.state.pa.us) • Chamber of Commerce • Dun and Bradstreet databases • PA DEP (brownfields) (www.emappa.dep.state.pa.us) • PA DCED (e.g., KOZs, KIZs, EZs) (www.invent.pa.com) • MPO/RPO • local government website/office • comprehensive plan
Local identity and heritage	history, traditions, events, and other cultural resources (historic structures, archaeological resources, historic districts, etc.) that contribute to community identity and pride, relationship to adjacent communities, and the identification and characterization of significant ethnic neighborhoods.	• PHMC (www.phmc.state.pa.us) • local newspaper/ community newsletter • comprehensive plan • interviews and community/public involvement • community organizations (e.g., local historic society, ethnic club) • local government website/office • Chamber of Commerce

Community Characteristic	Key Indicators	Potential Data Sources
Special community values	resources or relationships that substantially define the values and identity of a community (e.g., community linked to a special industry, educational facility, or cultural/recreational resource; a community identified as a center of governmental activity (local, county, State, Federal); or a community strongly linked to a famous individual or event, etc.	• interviews and community/public involvement • local newspaper/community newsletter • comprehensive plan • local government website/office
Recreational and creative arts	location and mobility/access to/from parks, trails, greenways, musical, theatrical, artistic, ethnic, athletic, and other recreational opportunities in the community (e.g., events, parades, festivals).	• PA DCNR (www.dcnr.state.pa.us) • local Parks and Recreation Dept. • local newspaper/community newsletter • comprehensive plan • local government website/office • Chamber of Commerce • school districts
Physical Environment		
Aesthetics	recognized places, buildings, views, landscapes, or natural features important or valued by the community, and recognized areas seen as adverse to the aesthetic qualities of the community.	• PA DCNR (www.dcnr.state.pa.us) • local Parks and Recreation Dept. • comprehensive plan • MPO/RPO • interviews and community/public involvement
Religious facilities and characteristics	identification of places of worship within the community, influence of these groups in the community (providing community and social services, role in community social events, etc.), identification of cemeteries and other places of special, spiritual importance.	• Aerial/GIS mapping • Yellow pages or city directories • interviews and community/public involvement • local government website/office • comprehensive plan
Educational facilities and characteristics	education level of community, quantity and location of schools, mobility/access to library services, and the integration of school activities and community participation.	• U.S. Census Bureau (www.census.gov) • DCED (www.inventpa.com) • school districts • Yellow pages or city directories • interviews and community/public involvement"
Health facilities and services	location and mobility/access to/from comprehensive (physical, mental, sensory) health services for all segments of community (including children and elderly), special care resources such as retirement, assisted-living and nursing-care facilities, and recognized health hazards in community.	• Yellow page or city directories • Medical/health facility public information and employee interviews • comprehensive plan • local government website/office

Community Characteristic	Key Indicators	Potential Data Sources
Infrastructure and public services	information on location and provision of water, wastewater, waste disposal, electrical, natural gas, transportation (e.g., roadways, sidewalks, bikeways, railroad track and facilities, airports, and ports or water terminals), and other infrastructure and services (including Act 537 plans).	• comprehensive plan • MPO/RPO • local government website/office • parcel data
Public Safety and emergency services	location and mobility/access to/from police, fire, ambulance services, identification of issues related to crime or personal safety within community.	• comprehensive plan • interviews with emergency service providers • Aerial/GIS mapping • local government website/office
Social services	location and access to/from a variety of services, such as, local food banks, homeless shelters, job training, transportation services, financial counseling services, and related government offices.	• Social services agencies • local/county/regional transportation agencies • interviews and community/public involvement • local government website/office • Chamber of Commerce
Natural Environment		
Ecological Context	recognized natural resources, landscapes, habitats or ecological qualities important to the community (either economically, recreationally, visually etc.), identification of any special relationship between community and natural environment that contributes to a sense of place.	• comprehensive plans • interviews and community/public involvement • local Parks and Recreation Dept. • DCNR (www.dcnr.state.pa.us) • PA Game Commission (www.pgc.state.pa.us) • PA Fish and Boat Commission (www.fish.state.pa.us) • local recreation clubs (sportsman's, hiking, ATV, snowmobile, etc) • PADEP
Land use and land management	information on current and future land use patterns, local planning programs, land acquisition costs, land organizations and conservation groups, conservation easements and conserved open space, substantial land owners, special land uses which contribute to the uniqueness of a community, property values, land protection or taxing programs (e.g., Enterprise Zones, PA Executive Order 2003-2)	• comprehensive plan, zoning ordinance • MPO/RPO • Aerial/GIS mapping, parcel data • local government website/office • local USDA office • DCED (www.inventpa.com) • community organizations (e.g. watershed association) • tax records • interviews with realtors, real estate market publications

Step 3 – Identify and Analyze Potential Beneficial and Adverse Impacts

Impact identification in the CIA process involves the consideration of both the beneficial and adverse impacts of the project alternatives under consideration, including the no action or no build alternative. Community impacts to be identified and analyzed include the direct, secondary, and cumulative effects of transportation projects. Direct impacts are those directly caused by the project. Secondary or indirect impacts are those impacts that are "caused by the action that are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8b). Secondary impacts are often associated with the development that may indirectly result from construction of a new facility or improvement of an existing facility.

Cumulative effects are defined as: "…the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). A cumulative impact includes the total beneficial or adverse effect on a natural resource, ecosystem, or human community due to past, present, and reasonably foreseeable future activities or actions of federal, non-federal, public, and private entities.

After the proposed alternatives and the baseline conditions are established, an analysis of the proposed alternatives in relation to the community should be performed. The analysis involves both the identification and investigation of potential impacts. This analysis needs to be performed for proposed alternatives along with the "no build" or "no action" alternative (future baseline conditions without the project). Conducting this analysis for each alternative provides a meaningful basis for comparing alternatives and ultimately selecting a preferred alternative. When analyzing impacts it is important to keep in mind the following principles:

- Be cognizant of both positive and negative impacts
- Consider the duration of impacts; temporary/short term impacts vs. long term impacts
- Consider the equitable distribution of those impacts; identify if a certain segment of the community is receiving a majority of the beneficial or adverse impacts, and if that situation is producing an inequitable sharing of those impacts
- Consult with affected populations and keep community goals in mind
- Recognize the public's perception of potential impacts; if the public is concerned with particular issues related to a project , then those issues should receive greater attention

Tools and Techniques

CIA often lacks rigorous quantitative analytical methodologies. Much of the information on communities and neighborhoods is considered "soft data" involving people's perceptions, feelings, and attitudes. Assessment techniques that are simply performed,

easily understood, and incorporate the sentiments and input of community stakeholders can be most effective and valuable.

A variety of tools and techniques are available to aid in assessing community impacts. A sampling of potential tools and techniques that are commonly used are briefly described in the following paragraphs. This list is not exhaustive and other tools and techniques can be used to analyze potential community impacts of transportation projects. Review previous transportation projects of similar scope or location for assistance in determining what tools were used and how successful they were. This review can provide valuable information concerning successful CIA initiatives and offer suggestions for improving the assessment of community impacts. Ultimately, it is up to the analyst to decide, which tools and techniques are appropriate for each project and each community that they are dealing with.

Community/Public Involvement

Community/public involvement activities can help the analyst identify issues of public concern and identify public perceptions on potential impacts of the project. Analysts should take full advantage of the various community/public involvement activities as a means to talk with people of affected communities, listen to what they have to say, and incorporating this information gained into the assessment of impacts. There are a wide variety of community/public involvement activities that can be utilized in the analysis of project impacts. A sample listing of community/public involvement activities includes:

- Public Meetings
- Community Advisory Committee Meetings
- Charettes
- Workshops
- Open Houses
- Design Centers
- Focus Groups
- Public Officials Meetings

For more in depth information on potential community/public involvement activities, see PennDOT Publication No. 295 *Public Involvement Handbook*, PennDOT publication entitled *Public Involvement Program and Procedures for Transportation Planning and Programming*, and Section IV of this handbook.

Case Study Comparison

Case study comparison uses the experience of similar transportation actions in other locations to determine potential project impacts. Projects and areas should be as similar as possible in size, project type, location, design, geography, available data sources and any other relevant characteristic. The technique begins with identifying existing case studies that describe before and after conditions or creating new case studies by collecting the required information through survey, interview and other secondary data source collection techniques. Next, likely impacts are determined based on the experience of all available case studies and by estimating likely impacts of the proposed project

alternatives. Analogies are made and similarities and differences are examined over time or across areas.

Market Research

Interviews, focus groups, and surveys can be used to collect first-hand information on particular topics. Interviews of stakeholders can provide valuable information on the community's perspective on perceived impacts of the project.

Tips for Conducting Effective Interviews

- Prepare a list of questions ahead of time
- Memorize the first few questions
- Use a mixture of open-ended and closed questions (open-ended questions that ask who, what, why, when, where, and how encourage more lengthy responses)
- Have proper note-taking equipment on hand (paper, pens and pencils, and possibly a tape recorder)
- Explain the purpose of the interview, but don't talk too much
- Be courteous, regardless of the circumstances
- Take a low-key approach. Use the word "interview" sparingly, instead, suggest that you would like to "talk with" your subject
- Hold interviews at a place where your interviewee feels comfortable
- Try to get complete statements from your interviewees
- When you don't understand something that an interviewee is telling you, ask for clarifications, further explanations or examples
- Above all else, listen to what the interviewee is saying
- Transcribe your notes as soon as possible after the interview

Source: *Creative Conversations: The Writer's Complete Guide to Conducting Interviews*, by Michael Schumacher, Writer's Digest Books, 1990

A focus group is a carefully planned discussion that is designed to obtain perceptions on a defined area of interest. It is facilitated by a person knowledgeable of group dynamics and the topic of discussion. The emphasis is on revealing perspectives, insights, and opinions of participants through conversation and interaction. Successful focus groups require a well-defined purpose. Once the purpose has been defined, the analyst must determine who can provide the needed information. Focus group participants are typically from homogeneous target populations to ensure that they feel comfortable speaking in the group atmosphere. All participants should share some important characteristics that have been determined based on the purpose of the focus group research. Typically, at least two focus groups are held with each targeted population group so that data can be compared and contrasted. The result is information related to the opinions of local people that can provide insight into public reactions to specific issues at one point in time.

Surveys of targeted populations can be developed, administered, and analyzed to assist in determining potential impacts. Appropriate time and effort should be put into developing surveys so that they are effective. When possible, the surveys should be pretested to work out any details in questions posed and responses received. Various types of surveys can be used for the various community issues being analyzed. For example, surveys target shoppers and businesses could be utilized on projects with expected impacts to businesses, while visual preference surveys could be used on projects where aesthetic impacts are a concern. See PennDOT Publication No. 273 *A Guide to Effective Surveying* for more information on this technique.

Mapping Overlays/Geographic Information Systems

This technique involves superimposing various corridor features (physical characteristics, demographics, and project alternatives) to analyze and understand spatial relationships. GIS has the capacity to store and process enormous amounts of data and can perform numerous analytical tasks including determining physical proximity. For example, the number of residences within x feet of a given proposed alternatives footprint can be easily calculated. A wide variety of information is available from many public and private sources, dramatically reducing data collection time.

Visual Imaging and Computer Simulation

This technique involves the use of computer software to generate a visual simulation of the project corridor with and without proposed project alternatives. It can be used to compare and contrast the potential impacts of various project alignment and design concepts in a manner that is simple to comprehend. It gives the user the capacity to ask "what if" questions that can be answered visually using the simulation procedure.

Statistical Analyses, Trend Projection and Correlation

Statistical analysis techniques, such as trend projection and correlation, make use of historical data to forecast potential future impacts of project alternatives. Trend projection analysis estimates a future condition by extrapolating historical time series data into the future and assuming that the underlying factors that created the observed historical trend will remain substantially the same. Trend correlation analysis determines the most likely future state by examining the observed relationship between one or more factors (independent variables) that create the historical trend (dependant variable) and developing a mathematical model (regression equation) to explain that relationship.

Brainstorming

Brainstorming is the generation of ideas through quick response reactions in a freethinking forum. In a brainstorming session, a group of stakeholders are asked to respond to a series of questions and situations. All ideas are listed without comment or evaluation. Each idea is then evaluated with participants having the opportunity to ask questions and hear responses from the person who generated the idea. Ideas are then grouped and consensus is reached.

Expert Consultation/Panel or Peer Review

This technique solicits the expert opinion of knowledgeable professionals in a face-to-face environment to estimate likely project alternative impacts. The analyst provides the expert panelists with background information and facilitates a discussion on likely outcomes. Because the experts are gathered together in a meeting, each has an opportunity to argue his or her point of view and be persuaded by other points of view. This can lead to a deeper understanding of each expert's opinion, but can also allow dominant personalities to overwhelm equally valid positions. The desired outcome is consensus on potential project impacts.

Delphi Techniques

The Delphi technique is a systematic, structured way to use expert opinion to determine likely project impacts. Experts provide their judgments about the potential impacts of project alternatives anonymously by responding to several rounds of questionnaires. Each expert is originally provided with the same background material from which to develop their opinions and a questionnaire to complete. The first questionnaire, in most cases, consists of open-ended questions. The analyst summarizes the results of the first round and submits the results to the experts for their reconsideration and response along with a new, often more structured, questionnaire. This continues for several rounds until consensus or a clearly defined difference of opinion is reached. The process differs from other expert opinion techniques in that it allows experts to reconsider their opinion in light of other reasoned opinions without allowing lobbying or other personal interaction.

Application of Analysis Tools and Techniques

Not all community impacts have the same priority for depth of analysis on a proposed project. The more important issues should receive a higher priority for analysis and be considered in more depth. No set rules govern which impact assessment technique(s) may be most appropriate on a given project. Use best professional judgment when selecting impact assessment techniques to ensure that all significant impacts are captured.

Key questions to be answered during the impact assessment along with potential analysis tools and techniques that can be used to answer the questions are discussed below and summarized at the end of this section in Table III-2.

Community Cohesion

1. *Would the project impact community cohesion?*

Community cohesion is a tough enough concept to understand let alone to analyze and therefore often receives limited attention. However, community cohesion is one of the central elements of CIA and analysis of community cohesion should receive proper attention of analysts. To determine if and how the project would potentially impact communities an analyst should: have a good understanding of the community and the proposed project; talk to people within the community; listen to what they have to say; and based on this information, make qualitative assessments on community cohesion impacts, remembering to address both positive and negative impacts.

When performing this assessment the analyst should explore the following questions.

- Would the project result in barriers dividing an established neighborhood or community, or isolate a portion of an established neighborhood or community?
- Would the project increase or decrease community interaction?
- Would the project result in changes to social relationships or patterns within the community?
- Would the project result in changes to traffic patterns in established neighborhoods?

- Would the project result in a loss, reduction, or enhancement of connectivity to community or neighborhood activity centers?

Transportation projects may divide communities when they act as physical barriers or when the residents perceive them as psychological barriers. This division may be seen as negative or a positive. For example, the construction of a limited access roadway adjacent to a neighborhood may act as a physical barrier, dividing a neighborhood from the larger community. While the widening of an existing roadway from two to five lanes does not create a new physical barrier, it may make it harder for people to cross the street to visit friends or access a community facility, such as a park or school. Isolation could lead to a variety of unwelcome circumstances, such as reduced social interaction, increased residential turnover, social isolation for the elderly or disabled, and increased crime. It is also possible, however, for a project to increase community cohesion. For example, if a new alignment diverts a substantial amount of through traffic away from neighborhood streets or a central business district, residents may consider walking to be a safer and more enjoyable experience. A public transit project may make community activity centers more accessible for community residents. In some cases, isolation created by transportation improvements may be welcome by various populations or religious sects.

Community cohesion can be impacted at the larger community level; a project on new alignment that divides a small town or borough could negatively impact community cohesion, while a bypass that removes traffic congestion from a downtown area may enhance interaction.

Use community cohesion information to qualitatively analyze potential project impacts. No exact formula exists for determining community cohesion impacts; simply try to view the project from the perspective of residents. A first step would be to overlay maps showing the proposed improvement onto maps showing neighborhood and community boundaries and community facilities. Then, identify areas where impacts to community cohesion may exist (dividing neighborhoods, terminating streets, changing travel patterns) Incorporating visualization techniques into community/public involvement activities can provide a powerful and effective tool, allowing participants to visualize how the project may effect their community. In addition to the two dimensional maps and plans depicting the proposed improvements, techniques to assist in visualizing impacts could include artist renderings of the proposed improvement, photographs of existing conditions manipulated by computer programs to include the proposed project, or 3-dimensional video fly-bys or drive-throughs. Interviews with community leaders and residents, and surveys and questionnaires can help to identify community cohesion impacts as well. Using these techniques, assess physical or psychological barriers the project may create (or reduce), changes to traffic patterns in established neighborhoods, and changes in connectivity between residential areas and community/neighborhood activity centers.

Demographics (People and Displacements)

1. *Would the project result in residential displacements?*

Overlaying the proposed improvement onto project base maps can identify potential residential displacements. A potential displacement would occur if a residence falls within the footprint of an alternative, or if access to the property is eliminated, or access is severely impaired by an alternative. Verify potential displacements with field views.

Once the potential displaced structures are identified and verified, collect and analyze additional information:

- Make an accurate count of residences within individual structures; one house may be divided into a duplex, or multiple apartments.
- Identify characteristics of occupants of potentially displaced residences through review of census data, field observations, interviews with stakeholders, and community/public involvement activities. Characteristics to be identified include: race and ethnicity, age, income status, disability status, and family size.
- Obtain the assessed value of the properties from the local tax assessor, and the date of the most recent assessment (values may have to be adjusted for inflation).
- Distinguish occupied residences from unoccupied or abandoned dwellings, and owner-occupied from renter-occupied residences.
- Research the availability of replacement housing for potentially displaced residents through review of real estate listings and input from local realtors and the District Right-of-Way Administrator.

Use demographic information, field observations, and interviews with local officials, stakeholders, and residents to understand the ethnic, racial, and income background of residents in the area where the displaced properties are located.

If it is determined that a project would displace residents, coordination with the District Right-of-Way Administrator should take place regarding the potential preparation of a Conceptual Stage Survey Report, possible coordination with potentially affected property owners and issues related to relocation, appraisals, and displacements. Early coordination with District Right-of-Way Administrators can lead to the early identification of displacement and relocation issues and reducing the potential for conflicts and delays later in the Transportation Project Development Process.

If required, a Conceptual Stage Survey Report should be prepared in accordance with PennDOT Publication 378. Conceptual Stage Survey Reports are typically prepared by the District Right-of-Way Units or, in some instances, by consultants.

Coordination with affected property owners and the public should follow NEPA, the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, and the PennDOT Right of Way Manual.

While it is important to identify the number and type of displacements as described above, it is equally, if not more important to go a step further and assess how these displacements will affect the community, both the neighborhood where displacements take place and the neighborhood where displaced residents relocate, along with the community as a whole. When performing this assessment the analyst should explore the following questions.

- How will the neighborhood where displacements take place be affected?
- How will the neighborhoods where displaced residents may relocate be affected?
- How the displacements affect the overall community?
- Will the quality of life be affected (increase/decrease) in the affected neighborhoods and the community as a whole?

Please note that certain populations, such as the elderly, persons with disabilities, non-English speaking, low income, racial/ethnic minorities, households with children, and long-term residents may have more difficulty in adjusting to relocation. If such populations are present, a more thorough assessment of impacts should be made. While relocation can be viewed as being a negative impact, in some cases individuals required to relocate due to a project improve their overall quality of life due to a better housing situation that the one they left behind.

To answer these questions you will need to talk with the people of the affected neighborhoods and knowledgeable community leaders, listen to what they have to say, and make a qualitative assessment of impacts to these neighborhoods.

2. *Are there any disproportionate impacts on persons or groups protected under environmental justice regulations?*

To answer this question, one first must have an understanding for what environmental justice is. Environmental justice is about the pursuit of equal justice and equal environmental protection for all people, regardless of race, ethnicity, or economic conditions. The Environmental Protection Agency (EPA) defines environmental justice as "the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies." EPA further goes on to state that "fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies." Meaningful community/public involvement means providing opportunities for community input and participation in all phases of decision making to all affected communities through measures such as improved accessibility to public meetings, official documents, and notices (see PennDOT Publication No. 295, *Public Involvement Handbook* for more information on accessibility to community/public involvement activities).

Executive Order 12898, entitled "Federal Actions to Address Environmental Justice Minority Populations and Low Income Populations", was signed by then President Clinton on February 11, 1994. This Presidential Executive Order directed all Federal agencies to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse effects of programs, policies and activities on minority populations and low income populations. Projects receiving federal funding are considered federal activities and thus, must comply with Executive Order 12898.

The four minority groups addressed in Executive Order 12898 are: Black, Hispanic, Asian American and American Indian and Alaskan Native populations. Low income is defined as a person whose household income is at or below the Department of Health and Human Services poverty guidelines.

There is a variety of guidance available for environmental justice including guidance from PennDOT and FHWA. Guidance from PennDOT includes the PennDOT Publication *Every Voice Counts*, which provides guidance for the PennDOT Office of Planning. Much of the guidance can be adapted for further stages of the Transportation Project Development Process beyond the Planning and Prioritization and Programming phases that it was developed for. From FHWA, the 2002 publication, *Environmental Justice: What You Should Know*, by the Pennsylvania Division of the FHWA, provides an excellent explanation for determining disproportionate impacts to environmental justice populations. Please refer to these documents for more guidance and information on environmental justice.

Economics, Employment and Business Conditions

1. *Would businesses be displaced as a result of the project?*

Overlaying the proposed improvement onto project base maps can identify potential commercial displacements. A potential displacement would occur if a business falls within the footprint of an alternative, or if access to the property or parking is eliminated, or if access is severely impaired by an alternative. Verify potential displacements with field views. Obtain the name and address of displaced business and the business owners, the type of business, and number of similar businesses in the local area. Assess parking for the business. Does the business rely on public street parking or have a private lot? How many spaces are available? Identify the availability of replacement sites for potentially displaced businesses by reviewing real estate listings, and gathering input from local realtors and the District Right-of-Way Administrator.

If it is determined that a project would displace businesses, coordination with the District Right-of-Way Administrator should take place regarding the potential preparation of a Conceptual Stage Survey Report, possible coordination with potentially affected property owners and issues related to relocation, appraisals, and displacements. Early coordination with District Right-of-Way Administrators can lead to the early identify

displacement and relocation issues and reducing the potential for conflicts and delays later in the Transportation Project Development Process.

If required, a Conceptual Stage Survey Report should be prepared in accordance with PennDOT Publication 378. Conceptual Stage Survey Reports are typically prepared by the District Right-of-Way Units or, in some instances, by consultants.

Coordination with affected property owners and the public should follow NEPA, the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, and the PennDOT Right of Way Manual.

While it is important to identify the number and type of displacements as described above, it is equally, if not more important to assess how these business displacements will affect the community, both the neighborhood where displacements take place, the neighborhood where displaced businesses relocate, and the community as a whole. When performing this assessment the analyst should explore the following questions.

- How will the neighborhood where displacements take place be affected?
- How will the neighborhoods where displaced businesses may relocate be affected?
- How the displacements affect the overall community?
- Will the quality of life be affected (increase/decrease) in the affected neighborhoods and the community as a whole?

To answer these questions you will need to talk with the people of the affected neighborhoods and knowledgeable community leaders and qualitatively assess impacts to these neighborhoods.

Please note that certain types of businesses are more likely to experience difficulty in relocation including: small, family owned, ethnic, and minority owned businesses, and those businesses that cater to a local or neighborhood client base. If such businesses are to be displaced by the project, a more thorough assessment of impacts should be made. While business relocation can be viewed as being a negative impact, in some cases businesses required to relocate due to a project improve their situation through better locations and/or facilities at relocated sites.

The potential for businesses to be temporarily affected or even displaced during the Construction phase of transportation improvements should also be considered. Issues like access, times of business operations, and traffic concerns should be considered prior to construction. Please note that construction contractors are responsible for maintaining access to businesses during construction and State and Federal Law does not compensate business losses that are the result of construction.

2. *Would the project cause any business/district to be bypassed, increase or decrease traffic through traffic-based business areas, or impact the visibility of any traffic-based businesses?*

Obtain and review existing, and projected, traffic data. If existing routes will be bypassed or traffic is projected to decrease on routes, identify businesses along those routes and categorized them as "traveler-oriented," (i.e., fast food restaurants, and gasoline stations), "traffic-dependent," or "non-traffic-dependent" (i.e., offices and industries). Traffic-dependent businesses use their visibility as a vital form of advertising. To determine whether a business is traffic-dependent, use professional judgment, interviews with business owners, and/or customer-intercept surveying. Identify the number of potentially affected businesses, and the number of employees at these businesses.

Depending on the project and the level of impact, one may choose to discuss the impact to traveler-oriented and traffic dependent businesses qualitatively or quantitatively.

3. *Would the project enhance or eliminate access to businesses?*

Obtain existing and projected traffic data, and identify businesses along affected roadways. If traffic is projected to decrease on a busy roadway, access to businesses may be enhanced due to less traffic congestion. An increase in traffic congestion could inhibit access. Traffic signals, turning lanes, and other improvements may improve access to businesses. Conversely, the addition of a center median, left-turn restrictions, or a change in traffic patterns from a two-way to one-way street system may inhibit or eliminate access. Interviews of affected businesses or surveys of businesses and/or their customers, community/public involvement activities, case study research, and past experience could be used to analyze potential impacts from proposed changes in access. Changes in traveled distances and travel times can be calculated as well.

4. *Would new development be generated as a result of the project and if so, how would that development impact the community?*

Review project maps to determine whether the project will open land to development that was not previously accessible, or improve access to undeveloped land. If the project involves new alignment, whether or not the alignment will be limited access can affect the amount of land available for new development.

Secondary development can be thought of as changes in land use that could be fostered indirectly by the project on adjacent or nearby properties. First, the amount of development *possible* can be determined by identifying the location and size of parcels that will be available for development, and investigating zoning regulations to find out what types of development would be permitted. Review recently filed development plans with local municipalities to see if land available for development is already spoken for. Identify infrastructure services present at these locations (water, wastewater, electric,

etc.), as the availability of these infrastructure services may make these parcels more attractive for development.

To determine the type and amount of development *likely*, interview local government officials and chambers of commerce about known land development projects proposed by public or private entities, and any incentive programs to attract businesses. Identify special economic development-related land designations (e.g., PA Enterprise Zone, Keystone Opportunity Zones, etc.). Investigate population growth projections, the business climate of the area, and whether other development is occurring locally. Is land in the municipality largely built out, or undeveloped? How much currently available land is vacant, or contains unused/abandoned properties? Be aware of how the project will impact access from the developable land to regional employment centers, retail facilities, and the larger transportation network, especially interstate and rail corridors used for shipping.

Using this knowledge of the area, parcel data, and zoning regulations, estimate the secondary development impacts of the project to the community.

5. *Would the project impact property values?*

Property value is a reflection of the desirability of a property with regard to aesthetic qualities, accessibility, safety, and many other factors, both objective and subjective. A transportation project could enhance the desirability of a residential area, raising property values by reducing commute times between that neighborhood and regional employment and commercial centers. However, a project may increase noise, vibration, and air and light pollution or adversely affect the aesthetics of a neighborhood, making it less desirable and reducing property values. Information on existing property values can be obtained from local government agencies and realtors. Determining how the project would impact property values could involve comparisons of the project with the past experience from other similar projects, consultation with realtors and public officials, and input from community/public involvement activities.

6. *Would the project increase or decrease employment opportunities in the local/regional economy [including opportunities for transit-disadvantaged populations (low-income, special needs, etc.)]?*

The answer to this question depends on what types of development the project is likely to induce, and whether or not the project will displace or bypass businesses. In the case of public transit, accessibility to employment opportunities may be enhanced or inhibited by a project. If a project involves a change in public transit routes, origin-destination surveys can be conducted with riders on existing routes. The surveys will show whether riders are using the route to access employment, and help one evaluate whether the riders' ability to access employment would change with the proposed project. Identify the locations of employment centers and residential areas on maps, and track employment accessibility under existing and proposed conditions. Input from local officials and

business leaders and the general public through community/public involvement activities can assist in this analysis.

7. *Would there be increases or decreases to the tax base as a result of the project?*

Determine the amount of property tax paid annually by residents and business owners who are likely to be displaced by the project. This information can be obtained from the local tax assessor. The total amount of property tax paid can then be expressed as a percentage decrease in the city or county's total annual property tax revenue.

Determine if the project is likely to induce secondary development (see #6). Obtain the current millage rate (rate in dollars per $1000 of taxable value) from the local tax assessor. Make estimates of potential future property value of the development (or a range of future property values) using the prediction of what development is likely to occur. The more specific the information available about future development, the more accurate the estimate. The millage rate can be multiplied by the amount of future taxable property value, and express this number as a percentage of the city or county's total annual property tax revenue.

Local Identity and Heritage, Special Community Values

1. *Would the project result in changes to the identity and/or heritage of the community (e.g., building an airport adjacent to a Civil War battlefield)?*

Qualitatively determine whether the project is consistent with the community identity and heritage and special community values. Incorporating visualization techniques into community/public involvement activities, as discussed above under community cohesion, can provide a powerful and effective tool, allowing participants to visualize how the project may effect their community. Interviews with community leaders and residents, and surveys and questionnaires combined with other community/public involvement activities can help in this analysis.

2. *Have previous projects in the area been compatible with or conflicted with the plans, goals and objectives of the community?*

This is a qualitative analysis. Conduct it as early as possible in the project development process, using interviews with community officials and initial community/public involvement activities. Community perceptions of other public projects will have a strong impact on perception of the current project. Document the results of the analysis and share them with members of the project team. Use the results for the project design and to create additional community/public involvement activities.

Recreational and Creative Arts

1. *Would the amount of recreation and open space increase or decrease as a result of the project?*

Use land use maps to determine what land uses, including parks, recreation and open space, would be converted to transportation use by the project. Verify land use maps with field views. Open space not formally designated for recreation may be present and be used by residents; only a field view will provide this information. Direct impacts to parks, recreation lands and open space can be identified by overlaying the proposed improvement onto project base maps with community features such as parks, recreation lands and open space identified on it. If a park, recreation, or open space, falls within the footprint of an alternative, or if access to the property is eliminated or severely impaired by an alternative, it would be considered an impact. Identify the number of recreation/open space parcels and the total area impacted.

While identifying the number of parks and acreage affected is important, it is equally if not more important to determine how the loss of this land would affect the community. When performing this assessment the analyst should explore the following questions.

- How will the loss of parks, recreation lands, or open space impact the community?
- What types of facilities and recreational activities would be impacted?
- Who uses those facilities that would be impacted?
- Would any populations be disproportionately affected by impacts on parks, recreation land, and open space?

Incorporating visualization techniques into community/public involvement activities, as discussed above under community cohesion, can provide a powerful and effective tool, allowing participants to visualize how the project may effect their community. Interviews with community leaders, parks and recreation officials, and residents, and surveys and questionnaires combined with other community/public involvement activities can help in this analysis.

If a project will cause an impact on, or use land from, a public park or recreation facility afforded consideration and protection under Section 4(f), a Section 4(f) evaluation will need to be prepared (see PennDOT Publication No. 349, *Section 4(f) Handbook* for more information).

2. *Would accessibility to recreational and/or cultural events change as a result of the project (e.g., parade routes)?*

Cultural events, like community fairs, festivals, and parades can play important roles in the community and can contribute to the overall quality of life experienced by people in communities. Identify and map the location of recreational and cultural events. Identify transportation routes and modes used to access these events. Using maps and overlays, as

well as interviews of key community leaders and event organizers, to identify temporary and permanent changes to available parking, public transit routes, or roadways used to attend these events, as potential impacts may affect the accessibility of these events. Interviews with leaders of these events, and community/public involvement activities can be used to obtain information and gain insight on potential impacts to these events. Identify both positive and negative impacts.

Aesthetics

1. *Would the project result in a change to the aesthetics of the existing landscape?*

Consider both the view *from* and *of* the proposed facility in this analysis. Photographs of existing conditions are a useful tool in determining impacts to aesthetic features. Photographs can be edited in a computer program such as "Photoshop" to simulate the inclusion of the proposed improvement. An artist rendering of the proposed improvement can assist in visualizing impacts. Interviews of stakeholders and community/public involvement activities that include visualization techniques can assist in determining impacts.

When performing this assessment the analyst should explore the following questions.

- Would the project impact a vista or alter a viewshed?
- Does the project blend visually with the area?
- Does the project impact visually sensitive areas or community focal points?
- Is the project likely to be perceived as compatible with the community's aesthetic values?

A project is more likely to have a substantial aesthetic impact if it is located adjacent to an area generally recognized as a critical or sensitive location (UMTA 1979, FHWA 1986). Critical or sensitive areas can be identified through interviews of stakeholders and through community/public involvement activities (See Section IV) and may include:

- Areas of recognized scenic beauty
- Parks and recreation areas
- Historic or other culturally important resources
- Gateways to urban areas
- Architecturally significant resources
- Water bodies
- Public facilities (e.g., hospitals, universities, schools, etc.)
- Residential areas

Communities may value certain unique focal points as critical or sensitive locations. Visualization techniques can be used to evaluate whether the viewscape of any sensitive area or community focal point would be materially altered by the project.

A project is more likely to have a significant visual impact if it involves new construction that has a different scale, color, location, or orientation from surrounding structures. Some examples of negative visual impacts of transportation project are:

- Contrasts between natural landscapes and engineering features of the roadway due to alignments, cuts, fills, retaining walls, clearing of vegetation, etc.
- Blocked views or reduced visual continuity due to berms, embankments, structures, elevation of roadway, etc.
- Roadway out of scale with adjacent urban development, such as an elevated or above grade roadway, or an extensive road widening project in a historic district
- Construction materials or design that are not consistent with the character of historic bridges or transit structures

Transportation projects may have positive visual impacts. Some examples are:

- Refurbishing a historic bridge or replacing a deteriorated structure
- Converting land containing aesthetic detractors (e.g., brownfield, junkyard) to transportation use
- Rehabilitating a deteriorating roadway to create a landscaped boulevard

Educational, Health, and Religious Facilities/Services/Characteristics

1. *Would the project result in displacements of community or institutional facilities?*

Identify potential displacements of community or institutional facilities by overlaying the proposed improvement onto project base maps. If a community or institutional facility falls within the footprint of an alternative or if access to the property or parking is eliminated or severely impaired by an alternative, it would be considered a potential displacement. Verify potential displacements with field views. Obtain the name and address of displaced facilities and descriptions of the services the facilities provide for the community. Identify facilities that provide the same, or similar, community services (e.g., if a Methodist church will be displaced, are there other Methodist churches nearby).

Displacement of certain community facilities, such as schools, churches and hospitals, can often be especially problematic. Depending upon how many children attend the school, how many parishioners a church may have, or how important a hospital may be to a particular community, impacts to these types of facilities can affect the lives of numerous people. Avoid these types of impacts whenever possible. If displacement of important community facilities is unavoidable, carefully identify issues of concern to residents through coordination with community leaders and the public.

Coordination with affected property owners and the public should follow NEPA, the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, and the PennDOT Right of Way Manual.

While it is important to identify the number and type of community facility displacements as described above, it is equally, if not more important to go a step further and assess how these displacements will affect the community, both the neighborhood where displacements take place and the neighborhood where displaced residents relocate, along with the community as a whole. When performing this assessment the analyst should explore the following questions.

- How will the neighborhood where displacements take place be affected?
- How will the neighborhoods where displaced facilities may relocate be affected?
- How the displacements affect the overall community?
- Will the quality of life be affected (increase/decrease) in the affected neighborhoods and the community as a whole?

Please note that facilities that serve certain populations, such as the elderly, persons with disabilities, non-English speaking, low income, racial/ethnic minorities, households with children, and long-term residents may have more difficulty in adjusting to relocation. If such populations are served by impacted facilities, a more thorough assessment of impacts should be made. While relocation of community facilities can be viewed as being a negative impact, some facilities improve their situation through better locations and/or facilities at relocated sites.

To answer these questions you will need to talk with the people who run and use the affected facilities and talk to knowledgeable community leaders, listen to what they have to say, and make a qualitative assessment of impacts to these neighborhoods.

2. *Would the project impact accessibility (vehicular, bicycle, commuter, or pedestrian) to community or institutional facilities?*

Identify and map the location of community and institutional facilities. Identify transportation routes and modes used to access these facilities. Identify changes to available parking, public transit routes, or roadways used to access these facilities. Proposed changes may affect the accessibility of these facilities. Map overlays, interviews with community and facility leaders, and community/public involvement activities can be used to obtain information and gain insight on potential impacts to these facilities. Additional or reduced distances traveled and travel times can be calculated and assessed. Identify both positive and negative impacts. Examples of impacts to accessibility include:

- Changes in public transit routes adjacent to community facilities
- An increase or decrease in traffic at a heavily used pedestrian crosswalk
- Providing extra parking at community facilities (or eliminating parking)
- The addition of a new bus route or construction of a commuter rail line
- Displacement of a community facility and its relocation across town
- Reducing traffic congestion on a school bus route
- Restricting left turn movements into the parking lot of a community facility

Infrastructure and Public Utility Services

1. *Would infrastructure and public services be impacted by the project?*

Coordinate with project engineers and local officials, and overlay the proposed improvement onto infrastructure and public services maps (water, wastewater, waste disposal, electrical, natural gas, etc.) to determine impacts to these services. Conduct interviews with public service providers to gather their input. Some of the services may need to be relocated during the course of the project, and the community should be kept informed of interruptions in service, detours of local roadways, etc.

Public Safety and Emergency Services

1. *Would the project increase or decrease emergency services response times?*

Transportation projects often decrease emergency response times, but may increase response times, depending on the individual project. Compare information about emergency response routes with maps of the proposed transportation improvements. Additional or reduced distances traveled and travel times can be calculated and assessed. Further coordination with emergency service providers would be useful in determining impacts.

If a project involves new alignment, emergency service providers will need to respond to emergencies on the new alignment. The project team should consider providing gated access for emergency vehicles if a long stretch of limited access roadway is proposed. Consider the financial and capital impacts of increasing emergency service providers' responsibilities.

Temporary impacts to emergency service providers during the Construction phase should also be considered. Coordination with emergency service providers is important during the Construction phase.

Additional concerns for public safety and emergency service providers may be present in certain situations. When performing this assessment the analyst should explore the following questions.

- Would the project result in the creation of isolated areas that would be difficult to monitor for criminal activity?
- Would the project provide adequate lighting for pedestrian areas, if these areas are affected by the project?

Social Services

1. *Would social service facilities (e.g. homeless shelters, office of job training program) be displaced as a result of the project?*

Potential social service facility displacements can be identified by overlaying the proposed improvement onto base maps. If a social service facility falls within the footprint of an alternative or if access to the property or parking is eliminated or severely impaired by an alternative, it would be considered a potential displacement. Verify potential displacements with field views. Obtain the name and address of displaced facilities and descriptions of the services the facilities provide for the community. Identify facilities that provide the same, or similar, social services. Interview with social service facility employees and/or users can be used to determine where they live in the community, and what modes of transportation they utilize to access the facility. This information will be important in determining whether community members will have adequate access to alternative services, or a relocated facility.

Coordination with affected property owners and the public should follow NEPA, the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, and PennDOT Right of Way Manual.

Social service facilities can provide important functions within communities. Please note that facilities that serve certain populations, such as the elderly, persons with disabilities, non-English speaking, low income, racial/ethnic minorities, households with children, and long-term residents may have more difficulty in adjusting to relocation. If such populations are served by impacted social service facilities, a more thorough assessment of impacts should be made. While relocation of social service facilities can be viewed as being a negative impact, some facilities improve their situation through better locations and/or facilities at relocated sites.

2. *Would access to social services increase or decrease as a result of the project?*

Identify and map the location of social service facilities. Identify transportation routes and modes used to access these facilities. Identify changes to available parking, public transit routes, or roadways used to access these facilities. Proposed changes may affect the accessibility of these facilities. Map overlays, interviews with community and facility leaders, and community/public involvement activities can be used to obtain information on potential impacts to these facilities. If a project involves a change in public transit routes, origin-destination surveys can be conducted with riders on existing routes. Identify both positive, and negative, impacts.

Ecological Context

1. *Would the project improve or impair natural resources valued by the community (e.g. trout stream water quality)?*

Overlay the proposed improvement onto maps depicting important natural resources to determine direct acreage impacts to natural resources. Confer with natural resource professionals to understand what impacts the project will have on natural resources. Compare these impacts with the baseline information about the value the community has

for certain natural resources. Coordinate with community leaders, local conservation groups, and the general public to assist in the identification of potential natural resource impacts. This coordination could take place as part of community/public involvement activities or through interviews or surveys.

2. *Would the project alter the relationship between the community and the natural environment?*

This is a qualitative analysis that can be conducted through interviews, surveys, and community/public involvement activities. The relationship between the community and the natural environment could be altered if the project restricts or inhibit access to the natural environment or contribute to noise, air, or other effects which impact the quality of the resource.

Land Use and Land Management

1. *Would changes to land use occur as a result of the project?*

Direct land use impacts can be determined by overlaying the proposed improvement onto maps that show existing land use (verify land use data with field views). Report the impact as acreage estimates of each land use to be converted to transportation use. Beyond reporting acreage impacts, a qualitative assessment of impacts to land use should be performed.

When performing this assessment the analyst should explore the following questions.

- Would the project open up new areas for development?
- Would the project induce changes in land use and density?

2. *Would the project be compatible with local growth management policies and adopted land use plans?*

Transportation projects can affect the rate of growth and the development patterns of an area. Growth and development patterns, in turn, can affect the need for additional highway capacity. Determine the potential for secondary and cumulative development impacts from the project. Compare these impacts with the local growth management policies found in comprehensive plans, zoning ordinances, and local government regulations. Conduct interviews with local planning officials to help in determining if the project is consistent with local land use plans and growth management policies. Assess the degree to which the project is compatible or noncompatible with the community's vision.

3. *Would the project eliminate land uses that have unique or special characteristics not likely to be reestablished in the community?*

Use information about community values and identity to determine whether the project would eliminate land uses the community values as unique (such as institutional uses like colleges and universities, recreational uses like amusement parks, parks, and wildlife refuges, or commercial uses like ethnic or specialty retail shops that are valued by the community). Interviews and community/public involvement activities can assist in determining the impact to unique land uses.

Pulling It All Together

It is important for analysts to recognize the interconnections between the various individual community impacts. Analysts should examine how the differing community impacts relate to one another.

Analysis tools and techniques, and some of the key questions to be answered during the impact assessment are summarized in Table III-2. The list of questions and analysis tools and techniques are not exhaustive, but provide a starting point for analyzing the effects of projects on communities.

Table III-2, Assessment Techniques for Different Community Characteristics

Community Characteristics	Key Questions	Assessment Techniques
Human Environment		
Community cohesion Community interaction Governance Community leadership and activism	• How would the project impact community cohesion? Would the project result in any barriers dividing an established neighborhood or community, or isolate a portion or an established neighborhood or community? Would the project increase or decrease community interaction? Would the project result in any changes to social relationships or patterns within the community? Would the project result in any changes to traffic patterns (autos, public transit, school bus routes, emergency vehicles, trucks, wide-loads, bike, pedestrian and ATV/recreational vehicles) in established neighborhoods/communities? Would the project result in any loss, reduction, or enhancement of connectivity to community or neighborhood activity centers?	• Mapping overlays/GIS • Community/public involvement activities • Market research – interviews, surveys or questionnaires • Case study comparisons • Visual imaging
Demographics/People	• Would the project result in any residential displacements? • Are there any disproportionate impacts to persons or groups protected under environmental justice regulations?"	• Mapping overlays/GIS • Community/public involvement activities • Market research – interviews, surveys or questionnaires • Statistical analysis: trend projection and correlation
Economics, employment, and business conditions	• Would any businesses be disrupted as a result of the project? • Would the project cause any business/district to be bypassed, increase or decrease traffic through traffic-based business areas, or impact the visibility of any traffic-based business? • Would the project enhance or eliminate access to any businesses? • Would any new development be generated as a result of this project? • Would the project impact property values? • Would the project increase or decrease employment opportunities in the local/regional economy? • Would there be any increase or decrease to the tax base as a result of the project?	• Mapping overlays/GIS • Community/public involvement activities • Market research – interviews, surveys or questionnaires • Statistical analysis: trend projection and correlation • Case study comparisons • Expert consultation • Delphi techniques

Community Characteristics	Key Questions	Assessment Techniques
Local identity and heritage and community values	• Would the project result in any changes to the identity and/or heritage of the community? • Have previous projects in the area been compatible with or conflicted with the plans, goals, and objectives of the community?"	• Community/public involvement activities • Market research – interviews, surveys or questionnaires • Visual imaging
Physical Environment		
Aesthetics	• Would the project result in a change to the aesthetics of the existing landscape? Would the project impact a vista or alter a viewshed? Does the project blend visually with the area? Does the project have any visual impact on a visually sensitive area or community focal point? Is the project likely to be perceived as compatible with the community's aesthetic values?"	• Mapping overlays/GIS • Visual imaging • Community/public involvement activities • Market research – interviews, surveys or questionnaires
Community facilities and characteristics Educational, health, and religious facilities and services	• Would the project result in any displacement to community or institutional facilities? • Would the project impact accessibility (vehicular, bicycle, commuter, or pedestrian) to any community or institutional facilities?	• Mapping overlays/GIS • Community/public involvement activities • Market research – interviews, surveys or questionnaires • Visual imaging
Infrastructure and public utility services	• Would infrastructure and public services be impacted by the project?	• Mapping overlays/GIS • Market research – interviews, surveys or questionnaires
Public safety and emergency services	• Would the project increase or decrease emergency services response times? Would the project result in the creation of isolated areas that would be difficult to monitor for criminal activity? Would the project provide adequate lighting for pedestrian areas, if these areas are affected by the project?	• Mapping overlays/GIS • Community/public involvement activities • Market research – interviews, surveys or questionnaires • Visual imaging
Social services	• Would any social service facilities be displaced as a result of the project? • Would access to social services increase or decrease as a result of the project?	• Mapping overlays/GIS • Community/public involvement activities • Market research – interviews, surveys or questionnaires

Community Characteristics	Key Questions	Assessment Techniques
Recreational and creative arts	• Would the amount of recreation/open space increase or decrease as a result of the project? • Would accessibility to recreational and/or cultural events changes as a result of the project?"	• Mapping overlays/GIS • Community/public involvement activities • Interviews • Statistical analysis: trend projection and correlation
Natural Environment		
Ecological Context	• Would the project improve or impair any natural resources valued by the community? • Would the project alter the relationship between the community and the natural environment?	• Mapping overlays/GIS • Case study comparisons • Visual imaging • Community/public involvement activities • Market research – interviews, surveys or questionnaires • Statistical analysis: trend projection and correlation • Expert consultation • Delphi techniques
Land use and land management	• Would any changes to land use occur as a result of the project? • Would the project be compatible with local growth management policies and adopted land use plans? • Would the project eliminate any land uses that have any unique or special characteristics not likely to be reestablished in the community?	• Statistical analysis: trend projection and correlation • Mapping overlays/GIS • Community/public involvement activities • Market research – interviews, surveys or questionnaires • Expert consultation • Delphi techniques

Step 4 – Determine Significance of Potential Impacts

Step 4 entails making a determination of the significance of these impacts after beneficial and adverse impacts have been identified. Currently, CIA as a whole lacks standard formulas, thresholds or criteria for quantitatively assign impacts and determining the significance of those impacts. Much of the information on communities and neighborhoods is considered "soft" data or information, involving people's perceptions, feelings, and attitudes (CALTRANS 1997). Therefore, the significance of a potential impact must be determined through careful judgment on a case-by-case basis. Furthermore, determinations of significance should be made in consultation with the affected community/communities.

The FHWA publication Community Impact Assessment: A Quick Reference for Transportation (FHWA 1996) outlines a broad framework for assessing the significance of specific community impacts, which includes the following:

- Likelihood of impacts
- Scale, severity, and extent of impact
- Duration of impact over time
- Reversibility of impacts
- Direct and secondary (indirect) impacts
- Cumulative or counterbalancing effects

Using this framework, determinations of significance of community impacts should be made. Each piece of the framework should be evaluated.

Likelihood of Impacts

Determine the likelihood or probability that an impact would occur as a result of the project. What is the likelihood that a particular impact would occur? Is it likely to occur or is it possible that it may or may not occur? Typically, the more likely it is that an impact would occur, the greater the significance of that impact.

Scale, Severity, and Extent of Impacts

Determine the scale, severity, and extent of community impacts. The scale, severity, and extent of impacts deal with who and how many people they affect, how severe the impacts are, and how widespread the impacts would be felt throughout the community. Perceptions of the public on the scale, severity, and extent of impacts should be factored into this assessment. Typically, the greater the scale, severity, and extent of an impact, the greater the significance of that impact.

Duration of Impact Over Time

Determine the duration of impacts. Are the impacts of a short term nature, perhaps only likely to occur during construction activities, or are the impacts of a long-term nature or permanent? Typically, the longer the duration that an impact would occur, the greater the significance of that impact.

Reversibility of Impacts

Determine whether the impacts are reversible. Is the impact reversible? If so, how long will it take to reverse? Can the impacts be mitigated? If so, what is the cost for mitigating the impact? Typically, the less likelihood of the reversibility of an impact, the greater the significance of that impact.

Direct and Secondary(Indirect) Impacts

Determine whether the impacts are direct or indirect. Would the project result in a direct impact on the community or an indirect impact? Direct impacts are those directly cause by the project. Secondary (or indirect) impacts are those that are "caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR 1508.8b). Secondary impacts are often associated with the development that may indirectly result from construction of a new facility or improvement of an existing facility. Both direct and secondary impacts have the potential to be significant.

Cumulative or Counterbalancing Effects

Determine the overall cumulative effects of the project. Cumulative effects are defined as: "…the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time" (40 CFR 1508.7). A cumulative effect includes the total beneficial or adverse effects on a natural resource, ecosystem or human community due to past, present, and reasonably foreseeable future activities or actions of federal, non-federal, public and private entities. An assessment of the significance of the overall cumulative effects should be made.

Other Definitions of Significance

Regulations issued by the Council for Environmental Quality to implement NEPA define significance as being a function of both "context" and "intensity" (40 CFR 1507.28)

Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. For instance, in the case of a site-specific action, significance would usually depend upon the effects in the locale rather than in the world as a whole. Both short-term and long-term effects are relevant.

Intensity. This refers to the severity of the impact. Responsible officials must bear in mind that more that one agency may make decisions about partial aspects of a major action. Consider the following when evaluating intensity:

1. Impacts that may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that on balance the effect will be beneficial.
2. The degree to which the proposed action affects public health or safety.
3. Uniqueness characteristics of the geographic area such as proximity to historic or cultural resources, park land, prime farmland, wetlands, wild and scenic rivers, or ecologically critical areas.
4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.
5. The degree to which the effects on the quality of the human environment are highly uncertain or involve unique or unknown risks.
6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.
7. Whether the action is related to other actions with individually insignificant but cumulatively significant impacts. Significance exists if it is reasonable to anticipate a cumulative significant impact on the environment. Significance cannot be avoided by breaking it down into small component parts.

8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for the National Register of Historic Places or may cause loss of significant scientific, cultural, or historical resources.
9. The degree to which the action may adverse affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.
10. Whether the action threatens a violation of federal state or local laws or requirements imposed for the protection of the environment.

-- 40 CFR 1508.27

Recognize that the perception of impact significance may differ among segments of the community; however, the perception of those segments most directly affected is important. Determinations of significance should be made in consultation with the affected community/communities. Ultimately, the significance of a potential impact must be determined through careful judgment on a case-by-case basis.

Step 5 – Identify Solutions

If adverse impacts on communities are identified that warrant further consideration, potential methods to address them may be explored. There are four primary methods for dealing with impacts: **avoidance, minimization, mitigation, and project enhancement**.

Avoidance involves changes to the project so that an adverse impact does not occur.

Minimization provides for project changes to reduce the amount, severity, or significance of the adverse impact.

Mitigation involves the implementation of specific actions or design changes to alleviate or offset those adverse impacts that warrant further consideration.

Project enhancement, as defined under the CIA process, involves implementation of supplemental features or elements that provide additional benefits to a community and can be implemented at a reasonable expenditure of public funds. These supplemental elements could make the project fit more harmoniously into the community or assist the community in responding to changes from the transportation project for little or no added cost. Project enhancements may involve specific design upgrades such as physical upgrades/betterments, aesthetic treatments, or community technical and planning assistance.

These techniques should be applied sequentially, starting with avoidance, and they should be performed in coordination with the affected communities. The community can help identify which community resources are most important and help prioritize the resources to be avoided. If an adverse impact cannot be avoided, the next step would be to examine potential ways to minimize adverse impacts, again taking into account community concerns. If adverse impacts cannot be minimized, mitigation strategies to address the adverse impacts should be developed for those adverse impacts that warrant further consideration. These mitigation measures should be developed in conjunction with the community. After mitigation measures have been established, the potential to include project enhancements should be examined. This development of project enhancements should also be performed in conjunction with the affected communities.

Addressing Impacts: Examples

Avoidance

- Change an alignment so that there are no displacements
- Redesign a road segment as an underpass to avoid cutting off access to a community facility

Minimization

- Reroute or shift a highway segment to reduce displacements
- Limit interchanges to minimize incompatible land use development
- Phase the project to minimize impedance to business access during peak shopping periods
- Alter an alignment to increase the distance between the facility and residences to minimize noise impacts

Mitigation

- Set aside land for a park or add to public recreation areas to replace lost facilities
- Erect sound barriers to mitigate noise to surrounding communities
- Provide a bicycle/pedestrian overpass or underpass to provide access to public facilities
- Provide compensation for properties acquired (a mandatory measure under the Uniform Act Amendments)

Enhancement

- Provide signage to recognize specific cultural or historical resources
- Develop bicycle trails or paths adjacent to roadways
- Plant trees and add park benches
- Add public artwork or a façade to a transportation facility to match the aesthetic design goals of a community

Source: CIA: A Quick Reference for Transportation. FHWA 1996.

The development of potential solutions for adverse temporary impacts should be addressed in a similar manner. Starting with avoidance and ending with project enhancement, coordinate with the affected residents, businesses, emergency service providers, health, education, and social service providers to identify and establish appropriate solutions.

In addition to PennDOT, the implementation of solutions may require the involvement of other governmental institutions, other State agencies, or non-governmental interests.

Potential mitigation will be required to meet the legal and authoritative definition of mitigation, which indicates that solutions (1) address impacts that actually result from the transportation improvement, (2) represent a reasonable public expenditure after considering the impacts of the action and the benefits of the proposed mitigation measures, and (3) can be legally implemented.

In concert with the Department's Context Sensitive Solutions (CSS) initiative, it should be the goal of every project to develop and identify transportation improvements or solutions that are context sensitive and help the project fit more harmoniously into the community. These context sensitive solutions should be developed in collaboration with the impacted communities.

Community/public involvement during this step should entail activities that engage stakeholders and the public in the identification, development, and review of potential solutions that are compatible with the context of the community. Visualization of potential solutions may play a key role in the evaluation of potential solutions especially in dealings with the public (see PennDOT Publication No. 295, *Public Involvement Handbook* for more information).

Step 6 – Document Findings

Documentation of CIA activities/findings should be dynamic along each phase as the project progresses through the Transportation Project Development Process. As information is collected, it should be documented and placed in project files that should travel with the project as it moves through the project development process. Information collected by MPOs/RPOs, and other stakeholders should be provided to PennDOT for inclusion in project files. Complete the documentation of CIA activities is needed to ensure adequate consideration of community issues in the decision-making process. The level of detail for documentation should reflect the significance of the community issues present.

Conduct a Community Context Audit at the onset of the project during the Planning stage by the MPO, RPO, PennDOT and/or project sponsor and update it as the project progresses through the project development process.

CIA information should be documented on scoping field view forms when the project is advanced to preliminary engineering and environmental studies during the Preliminary Design phase.

Keep CIA documentation in the project's technical files that are maintained for projects as per Strike-off Letter 440-96-13. Information to be placed in the technical support file may include the following:

- Census data
- Economic data, trends and forecasts
- List, maps, photos and information on community features
- Comprehensive plans
- Land use plans (existing and future)
- Zoning maps
- Information and plans for proposed development and redevelopment projects/areas
- Tax maps

- Tax information
- Map and listing of displacements
- Information on community facilities and services
- List, maps and information on neighborhoods
- Pertinent correspondence, meeting minutes, and field view notes
- List of community/public involvement activities
- List of reference materials

Include the findings and results of CIA analyses as part of the environmental documentation required by NEPA, and Pennsylvania Act 120, for federally or state-funded transportation projects. The level of detail provided in the documentation should be commensurate with the significance of community impacts and the level of NEPA/PA Act 120 documentation required (i.e., CEE Level 1B, CEE Level 2, EA, EIS, or EER). Information in the NEPA document should include a description of community resources present, full disclosure of impacts to community resources, if any, and a discussion of avoidance, minimization, mitigation, and project enhancement measures, if applicable.

For Level 1B or Level 2 CEEs or EERs, information collected and analyses performed during the CIA would be documented and incorporated into various sections within Part B of the CEE or EER form. Much of the CIA information would be documented within the CEE form under Part B, Section A-7 (Socioeconomics). Other portions of the CEE form where CIA information may be documented include: Part A, General (Project Setting and Right-of-Way); Part B, Section A-2 (Land); Part B, Section A-5 (Section 4(f) Resources – Parks and Public Recreation Areas); Part B, Section C (Public Involvement) and; Part B, Section E (Resources to be Avoided and Mitigation Measures).

For EAs, information collected as a part of CIA Steps 1 and 2 should be incorporated into the EA Form, Steps 1 and 2, "Scoping Summary" checklist. Analyses performed during CIA Steps 3, 4, and 5 should be incorporated into EA Step 3, "Alternatives Development and Impact Analysis" with a summary of impacted resources documented in the "Summary of Impacts" table, and written summaries of impacts to community resources documented separately on "Form 3C: Impact Form". When documenting community impacts within the EA on Form 3C, the more important the issue, the more text, graphics, and tables that should be devoted to those issues. Document results from CIA Step 5 under EA Step 4 in tabular form on the "Summary of Mitigation for Preferred Alternative" table.

For an EIS, information collected as a part of CIA Steps 1 and 2 should be incorporated into the "Affected Environment" section, while analyses performed during CIA Steps 3, 4, and 5 should be incorporated into the "Environmental Consequences" section. When documenting community impacts within the EIS documents, present findings in a clear, non-technical manner, using graphics and tables to aid understanding. Typically, the more important the issue, the more text and graphics that should be devoted to that issue. Summarize community/public involvement activities related to CIA in the EIS.

Mitigation commitments should be documented and passed on to final design and construction personnel. Any additional modifications or changes in Final Design or Construction stages affecting community impacts should be documented in the projects technical files.

IV. CIA Process, Application, and Integration

This section discusses the application and integration of CIA into the Transportation Project Development Process. CIA is an iterative process that spans the length of the Transportation Project Development Process from Planning through Maintenance and Operations. Community/public involvement is an important component of both CIA and the Transportation Project Development Process. This section presents ideas for incorporating community/public involvement activities into the CIA and Transportation Project Development processes. Through the application and integration of the CIA process with the Transportation Project Development Process, CIA should become a way of doing business for PennDOT.

Integration of CIA and the Transportation Project Development Process

CIA aims to ensure that important community issues are identified and assessed before a project reaches the later phases of the Transportation Project Development Process. The CIA process contains six steps:

- Step 1 – Project Understanding and Define the CIA Study Area Boundaries
- Step 2 – Establish Baseline Conditions
- Step 3 – Identify and Analyze Potential Beneficial and Adverse Impacts
- Step 4 – Determine Significance of Potential Impacts
- Step 5 – Identify Solutions
- Step 6 – Document Findings

The Transportation Project Development Process defines the various steps required to systematically formulate programs and advance projects from Planning, through Design and Construction, to regular Maintenance and Operations. This process is an effective mechanism through which PennDOT responds to Pennsylvania's diverse transportation needs. The six phases comprising the Transportation Project Development Process are:

- Planning
- Prioritization and Programming
- Preliminary Design
- Final Design
- Construction
- Maintenance and Operations

As presented in Tables IV-1 and IV-2, CIA activities should be initiated during the Planning phase and revisited, at various levels of detail, throughout the various phases of the Transportation Project Development Process.

Table IV-1, CIA and the PennDOT Transportation Project Development Process

PennDOT Transportation Project Development Process	CIA Activities	CIA Participants	Community/Public Involvement
Planning	Focus on developing a broad-based understanding the project and the affected communities, defining the CIA study area boundaries, establishing baseline conditions, and documenting these activities. Initiate Community Context Audit.	MPOs, RPOs, and PennDOT	
Prioritization and Programming	Review and update of broad-based CIA information developed in planning phase to confirm conditions and update community issues and concerns.	MPOs, RPOs, and PennDOT	
Preliminary Design (preliminary engineering and environmental studies)	Detailed CIA activities building on the broad-based information developed at the planning and prioritization/programming phases and incorporating a thorough assessment of project-level impacts. CIA information should be documented and included as part of NEPA/PA Act 120 compliance.	PennDOT, FHWA, and Resource Agencies	
Final Design (design development, right of way and utility coordination)	Review and update of detailed CIA information developed at preliminary engineering phase to confirm effects.	PennDOT, FHWA, and Resource Agencies	
Construction*	Review of CIA solutions and mitigation commitments, if any exist, including the consideration of solutions to temporary impacts resulting from project-related construction activities.	PennDOT, FHWA, and Resource Agencies	
Maintenance and Operations	Obtain feedback from users, document that feedback, and pass that feedback along to project team members.	PennDOT	

*Includes construction done under the maintenance units.

Table IV-2, PennDOT Community Impact Assessment Process

CIA Process Steps	PennDOT Transportation Project Development Process					
	Planning	Prioritization and Programming	Preliminary Design	Final Design	Construction	Maintenance and Operations
1. Project Understanding and Define the CIA Study Area Boundaries	Major emphasis	Major emphasis	Minor emphasis	Minor emphasis	Minor emphasis	Minor emphasis
2. Establish Baseline Conditions	Major emphasis	Major emphasis	Major emphasis	Minor emphasis	Minor emphasis	Minor emphasis
3. Identify and Analyze Potential Beneficial and Adverse Impacts	Minor emphasis	Minor emphasis	Major emphasis	Major emphasis	Major emphasis	Minor emphasis
4. Determine Significance of Potential Impacts	Minor emphasis	Minor emphasis	Major emphasis	Major emphasis	Major emphasis	Minor emphasis
5. Identify Solutions	Minor emphasis	Minor emphasis	Major emphasis	Major emphasis	Major emphasis	Minor emphasis
6. Document Findings	Major emphasis	Major emphasis	Major emphasis	Major emphasis	Major emphasis	Major emphasis
Community Involvement	Major emphasis					

Specific CIA activities that should take place within each individual phase of the Transportation Project Development Process are summarized by phase.

CIA and Planning

The Planning phase consists of the development of transportation plans for the state, and research into comprehensive plans developed by local and regional planning commissions. PennDOT and Metropolitation Planning Organizations (MPOs) or Rural Planning Organizations (RPOs) and project sponsors gather traffic data, perform problem assessments to pinpoint deficiencies in the existing transportation system, conduct feasibility studies, and develop general concepts for potential improvement projects.

CIA activities need to begin early in the Transportation Project Development Process, beginning with the Planning phase. CIA during the Planning phase should focus on understanding the project and the affected communities, defining the CIA study area boundaries, establishing baseline conditions, and documenting these activities. There should be lesser focus on identifying and analyzing impacts and developing detailed solutions. CIA activities to be performed during the Planning phase are:

Initiation of Step 1 - Project Understanding and Define CIA Study Area Boundaries – The first step of the CIA process entails developing an understanding of the potential project, identifying potentially affected communities, and establishing CIA study area boundaries. Developing an understanding of the project starts with basic project information such as project purpose and needs and logical termini should be identified

with an idea of potential alternatives. Based on these factors, potentially affected communities should be identified and CIA study area boundaries should be established.

Initiation of Step 2 - Establish Baseline Conditions – Begin collecting data and information on the potentially affected communities identified during Step 1, such as community characteristics and features and identifying community concerns. The Community Context Audit can be used as a data collection tool during the Planning phase and during subsequent phases of the Transportation Project Development Process. This form can be passed on to project personnel over the course of the project and be updated and revised as necessary.

Steps 3, 4, and 5, should be initiated during the Planning Phase, however, the level of attention and detail to be expended on these steps would not be as intense as the effort spent on these steps during the Preliminary and Final Design phases. Step 3 during the Planning phase should be more about "flagging" and identifying potential community impacts rather than detailed analysis of the impacts. Similarly, Step 4 during the Planning phase should entail a cursory review to identify potential significant impacts. Step 5 during the Planning phase should entail generating ideas or concepts for potential solutions rather than focusing on intense analysis of specific details of the solutions.

Initiate Step 6 – Document Findings – It is important to begin documentation of project and CIA activities early in the Transportation Project Development Process. The Community Context Audit is a tool that can be filled out and used to begin to document community characteristics during the Planning phase and during subsequent phases of the Transportation Project Development Process. It is most critical that project information is captured and documented to be passed forward and made available to project team members as the project moves forward through the various phases of the Transportation Project Development Process.

PennDOT, MPO/RPO representatives, and/or project sponsors could be responsible for performing and documenting the initial CIA activities that take place during the Planning phase. PennDOT encourages the MPO/RPO representatives and project sponsors to initiate community/public involvement in accordance with the principles set forth in the PennDOT publication, *Public Involvement Program and Procedures for Transportation Planning and Programming*. PennDOT bureaus, offices, officials involved in coordinating with MPOs and RPOs, project sponsors and other planning partners typically include the Office of Planning's Program Center from Central Office and the District Planning and Programming units and the ADE for Design at the district level.

CIA and Programming and Prioritization

During the Programming and Prioritization phase, PennDOT and MPOs/RPOs review and evaluate planning data, assess available funding resources, and prioritize projects according to need and financial constraints. Projects are scheduled for development and implementation on the Twelve-Year Transportation Program. PennDOT and MPOs/RPOs reevaluate the prioritization of projects every two years.

CIA activities during the Programming and Prioritization phase build on and have similar focus as those discussed for the Planning phase. Primary focus should continue to be on Steps 1, 2, and 6, with cursory review and updating of Steps 3, 4, and 5. CIA activities during programming and prioritization are:

Update/reassess Step 1 – Project Understanding and Define CIA Study Area Boundaries – Team members should continue to develop an understanding for the project and reassess and update CIA study area boundaries.

Update/reassess Step 2 – Establish Baseline Conditions – Team members should continue collecting data and information on community characteristics and features and identifying community concerns.

Steps 3, 4, and 5, should be updated and reassessed during the prioritization and programming phase. Similar to the Planning phase, the level of attention and detail to be expended on these steps should not be as intense as the effort spent on these steps during the Preliminary and Final Design phases.

Update/reassess Step 6 – Document Findings – It is important that additional or revised data and information collected during the Programming and Prioritization phase be captured, documented and conveyed to the various project team members as the project moves forward through the various phases of the Transportation Project Development Process. With the possibility of changes in project team members, it is critical that information and knowledge gained during the Planning and Programming and Prioritization phases be documented and passed forward for the benefit of new team members added during the Preliminary Design phase and beyond.

A key element of the Programming and Prioritization phase involves community/public involvement. Each program from the MPO/RPO and independent counties includes a community/public involvement element which provides an opportunity for the public to comment upon the proposed projects and provide input into the program development process.

It should generally be the responsibility of MPO/RPO representatives (planning partners) and project sponsors, in coordination with PennDOT, to perform and document CIA activities that take place during the Programming and Prioritization phase. PennDOT encourages the MPO/RPO representatives and project sponsors to perform community/public involvement in accordance with the principles set forth in the PennDOT publication, *Public Involvement Program and Procedures for Transportation Planning and Programming*. PennDOT bureaus, offices, officials involved in coordinating with MPOs and RPOs, project sponsors and other planning partners typically include the Office of Planning's Program Center from Central Office and the District Planning and Programming units and the ADE for Design at the district level.

CIA and Preliminary Design

The Preliminary Design phase consists of the preparation of environmental and preliminary engineering studies, designs, analyses and associated documentation. The purpose of this phase is to set a project's preliminary design, conduct the community/public involvement and agency coordination activities required by state and/or Federal law, and obtain environmental clearance.

CIA activities, including community/public involvement activities, are the most extensive during the Preliminary Design phase. During this phase, CIA activities coincide with preliminary engineering and detailed environmental studies activities being performed. It is important to obtain a thorough understanding of the affected communities and utilize that understanding and knowledge in assessing impacts and developing solutions during this phase. The use of effective community/public involvement activities is important to obtain input from the community on alternatives development, impact assessment, and developing context sensitive solutions. Documentation is necessary during this phase as environmental documentation requiring NEPA or state approvals are developed. CIA activities performed during Preliminary Design are:

Update/reassess Step 1 – Project Understanding and Define CIA Study Area Boundaries – New project team members working on the project need to review project information and spend time in study area to obtain a good understanding for the project and the project area. CIA study area boundaries should again be reassessed and updated.

Update/reassess Step 2 – Establish Baseline Conditions – Continue collecting data and information on community characteristics and features and identifying community concerns. Reassess and update collected information. Enough information should be collected to have a thorough understanding of the potentially affected communities.

Update/reassess Step 3 – Identify Impacts – Considerable attention should be focused on the identification and assessment of impacts. When analyzing impacts, it is important to keep in mind the following principles:

- Be cognizant of both positive and negative impacts
- Consider the duration of impacts (short term vs. long term impacts)
- Consider the equitable distribution of those impacts; identify if a certain segment of the community is receiving a majority of the beneficial or adverse impacts, and if that situation is producing an inequitable sharing of those impacts
- Consult with affected populations and keep community goals in mind
- Recognize the public's perception of potential impacts; identify if the public is concerned with particular issues related to a project.

A variety of tools and techniques are available to aid in assessing community impacts. See Section III for more information on Step 3 and for a listing of tools and techniques for analyzing impacts.

Update/reassess Step 4 – Determine Significance of Impacts – Considerable attention should be focused on determining the significance of impacts. The significance of potential impacts should be determined through careful judgment on a case-by-case basis. Determinations of significance should be made in consultation with the affected community/communities.

Update/reassess Step 5 – Identify Solutions – Considerable attention should be focused on identifying solutions. If adverse impacts to communities are identified that warrant further consideration, potential methods to address them should be explored. There are four primary methods for dealing with impacts: avoidance, minimization, mitigation, and project enhancement. These techniques should be applied sequentially, starting with avoidance, and they should be performed in coordination with the affected communities.

Update/reassess Step 6 – Document Findings – During the Preliminary Design phase considerable attention should be focused on documentation of CIA activities and findings. Community impact information should be documented on scoping field view forms as the project is advanced to preliminary engineering and environmental studies during the Preliminary Design phase. The Community Context Audit form, if initiated during the Planning phase, can be updated as needed. Community impact information and findings should be documented in environmental clearance documents prepared for the project (e.g., CEEs, EAs, EISs, and EDs). CIA data and analyses should be documented in project files. It is important that additional data and information collected during the Preliminary Design phase be captured, documented and passed forward to be made readily available to the project team members as the project moves forward through the remaining phases of the Transportation Project Development Process.

The number of parties involved in CIA activities grows during the Preliminary Design phase and may include:

- District Design Unit
- District Environmental Unit
- District Community Relations Coordinator
- District Right of Way Unit and Administrator
- District Utilities Unit
- District Bridge Unit – possible
- District ADE for Design
- Bureau of Design
- FHWA
- Consultants
- Resource Agencies
- MPOs or RPOs
- Project Sponsors and other Planning Partners

The number of parties involved and the intensity of their participation will vary depending on the complexity of the project and the significance of community impacts. The primary responsibility for CIA during Preliminary Design typically rests with

PennDOT District staff in cooperation with FHWA, Bureau of Design, consultants, resource agencies and to a lesser extent, MPOs or RPOs, project sponsors, and other planning partners. Key PennDOT district staff involved in CIA activities should include the Design Unit, Environmental Unit, Right of Way Administrator and Community Relations Coordinator with support from other district staff.

CIA and Final Design

The Final Design phase includes the integration of mitigation measures into design, right-of-way acquisition, and utility relocation, and advertisement of the construction plans and award of contract. It is during Final Design that the preferred alternative is further refined, detailed, and let for construction.

CIA activities during the Final Design phase should involve a review and update of detailed CIA activities and commitments made during Preliminary Design. Typically by the time a project reaches the Final Design phase, many project and community issues have been identified, analyzed, and addressed, and solutions, along with mitigation commitments, have been identified. However, if final design revisions depart from past commitments or could result in additional impacts to the community, community impacts should be reevaluated and reassessed. Changes, revisions, or updates should be documented, passed forward, and made available for project team members involved in future phases of project development. CIA activities performed during Final Design are:

Update/reassess Steps 1 and 2 – While the CIA study area boundaries and baseline conditions should be well established prior to Final Design, CIA Steps 1 and 2 should be updated and reassessed during the Final Design phase as necessary. To become familiar with the project and community concerns, environmental documents and other project documentation should be reviewed. Changes in study area boundaries or baseline conditions should be documented.

Update/reassess Step 3 – Identify Impacts – If Final Design revisions depart from past commitments a reassessment/reidentification of impacts to the community should be performed.

Update/reassess Step 4 – Determine Significance of Impacts – If Final Design revisions depart from past commitments, a reassessment of the significance of impacts to the community should be performed.

Update/reassess Step 5 – Identify Solutions – If Final Design revisions result in adverse impacts to communities, potential methods to address the adverse impacts should be explored and performed in cooperation with the affected community/communities.

Update/reassess Step 6 – Document Findings – Reassessments of analyses performed during Final Design along with additional CIA data and information collected during the Final Design phase should be captured, documented and made readily available to the various project team members as the project moves forward to construction.

Additional community/public involvement opportunities should be provided for significant changes that arise during Final Design to inform and work with affected parties.

The parties involved in CIA activities during the Final Design phase may include:

- District Design Unit
- District Environmental Unit
- District Community Relations Coordinator
- District Right of Way Unit and Administrator
- District Utilities Unit
- District Bridge Unit – possible
- District Roadside Specialist
- District ADE for Design
- Bureau of Design
- FHWA
- Consultants
- Resource Agencies
- MPOs or RPOs
- Project Sponsors/other Planning Partners

The number of parties involved and the intensity of their participation will vary depending on the complexity of the project and the significance of community impacts. The primary responsibility for CIA during Final Design typically rests with PennDOT District staff in cooperation with FHWA, Bureau of Design, consultants, resource agencies and to a lesser extent, MPOs or RPOs, project sponsors and other planning partners. Key PennDOT district staff involved in CIA activities should include the Design Unit, Environmental Unit, Right of Way Unit, Right of Way Administrator, Utilities Unit, and Community Relations Coordinator, with support from other district staff.

CIA and Construction

During the Construction phase, the selected contractor constructs the improvement along with any required mitigation measures. PennDOT follows up on the mitigation commitments made during Preliminary and Final Design, ensuring that measures designed to minimize environmental impacts are implemented properly. The new or improved transportation facility is then opened to the public after a thorough final inspection. The Construction phase also refers to construction activities performed by the District Maintenance Units.

CIA activities during the Construction phase should focus on a review of CIA solutions and mitigation commitments and their implementation, including evaluations of temporary impacts related to construction activities. Typically, when a project reaches the Construction phase, many project commitments and community issues have been identified, analyzed, and addressed, and solutions, along with mitigation commitments,

have been identified. However, if during construction revisions depart from past commitments or could result in additional impacts to the community, then community impacts should be reevaluated and reassessed. Changes, revisions, or updates should be documented (It should be noted that if a substantial change occurs, environmental permits may have to be amended or reissued). Feedback on changes that were made during construction should be provided to planners, engineers, and designers associated with previous project phases, for reference on future projects. Appropriate coordination with affected businesses, property owners, and public facilities and services should take place, as necessary. CIA activities performed during Construction are:

Update/reassess Steps 1 and 2 – While the CIA study area boundaries and baseline conditions should be well established prior to construction, CIA Steps 1 and 2 should be updated and reassessed during the Final Design phase as necessary. To become familiar with the project and community concerns, environmental documents and other project documentation should be reviewed. Changes in study area boundaries or baseline conditions should be documented.

Update/reassess Step 3 – Identify Impacts – If during construction revisions are made that depart from past commitments, a reassessment/reidentification of impacts to the community should be performed. Particular attention should be given to potential community impacts associated with temporary construction activities.

Update/reassess Step 4 – Determine Significance of Impacts – If during construction revisions arise that depart from past commitments, a reassessment of the significance of impacts to the community should be performed.

Update/reassess Step 5 – Identify Solutions – If during construction it is determined that changes to design plans are necessary, these potential changes should be examined. In addition to examining potential solutions, if changes are proposed that would result in adverse impacts to communities, potential methods to address the adverse impacts should be explored and performed in cooperation with the affected community/communities. This would require not only an update and reassessment of Step 5, but also of Steps 3 and 4.

Update/reassess Step 6 – Document Findings – Changes to design plans implemented during construction that would impact community resources should be documented and made readily available to the project team members as the project moves forward to Maintenance and Operations. It is equally important that feedback on changes that were made during construction be provided to planners, engineers, and designers associated with previous project phases, for use on future projects.

Additional community/public involvement opportunities should be provided for substantial changes that arise during construction to inform and work with affected parties.

The parties involved in CIA activities during the Construction phase may include:

- District Construction Unit
- District Design Unit
- District Environmental Unit
- District Community Relations Coordinator
- District Right of Way Unit and Administrator
- District Utilities Unit
- District Bridge Unit – possible
- District Maintenance Unit
- District ADE for Construction
- Bureau of Design
- FHWA
- Contractors
- Consultants
- Resource Agencies
- MPOs or RPOs
- Project Sponsors/other Planning Partners

The number of parties involved and the intensity of their participation will vary depending on the complexity of the project and the significance of community impacts. The primary responsibility for CIA during the Construction phase rests with PennDOT District staff in cooperation with FHWA, Bureau of Design, consultants, contractors, resource agencies and to a lesser extent, MPOs or RPOs, project sponsors and other planning partners. Key PennDOT district staff involved in CIA activities should include the Construction Unit, Design Unit, Environmental Unit, Right-of-Way Unit, Right-of-Way Administrator, Utilities Unit, ADE for Construction and Community Relations Coordinator, with support from other district staff.

CIA and Maintenance and Operations

The purpose of Maintenance and Operations is to maintain the transportation facility in a safe and functional condition. District and County Maintenance forces are often PennDOT's front line of contact with our communities. Drainage, paving, and a multitude of other transportation system concerns are brought to the attention of District and County Maintenance staff. CIA activities during the Maintenance and Operations phase should focus on obtaining feedback from users, documenting that feedback, and passing that feedback along to project team members. The District and County Maintenance staff would be the parties with the primary responsibility for obtaining, documenting, and passing feedback along to appropriate project team members involved in previous phases of the project. Finding out what worked, what didn't work, what could be done better or differently can be important information to have for planners, engineers, designers, and other team members, for use in future projects. For construction activities performed within PennDOT's Maintenance Units, please refer to the previous section on CIA and Construction.

Community/Public Involvement

As evidenced by the preceding portions of this Section, community/public involvement is a key component of both the transportation project development and the CIA processes. An emphasis on early and continuing community/public involvement throughout the entire Transportation Project Development Process is a key principle of CIA. Community/public involvement is aimed at community stakeholders, such as MPOs, RPOs, municipal officials, business leaders, neighborhood groups, special interest groups, and the general public, including those who have not traditionally participated in other traditional public involvement activities. CIA cannot be effectively performed without community input and involvement.

Community/public involvement activities can identify issues of public concern and identify public perceptions on potential impacts of the project. Traditional public involvement methods, such as public meetings and hearings, used for transportation projects have been thought to generally interest only a small portion of the potentially interested population. Capturing the attention of a larger, more representative group requires careful planning. To be most effective, community/public involvement techniques need to be tailored to each project, because styles of communication and behavior patterns differ from community to community. Project team members should take full advantage of community/public involvement activities as a means to talk with people of affected communities, listen to what they have to say, and incorporating this information gained into the assessment of impacts. There are a wide variety of community/public involvement activities that can be utilized to assist in CIA during the various phases of the Transportation Project Development Process. Community/public involvement activities and techniques can include:

- Public meetings
- Charettes
- Workshops
- Open houses
- Design centers
- Focus groups
- Public officials meetings
- Neighborhood meetings
- Community advisory committees
- Community events/fairs/festivals
- Local project offices
- Public hearings
- Web sites
- Toll-free telephone lines
- Newsletters
- Flyers/posters

This listing is not exhaustive or all inclusive. Be creative in developing a community/public involvement program that best fits the project and the community in which it is situated. For more in depth information on potential community/public involvement activities, see PennDOT Publication No. 295 *Public Involvement Handbook* and PennDOT publication entitled *Public Involvement Program and Procedures for Transportation Planning and Programming.*

The community/public involvement program needs to be flexible. New issues may arise that may necessitate a change in community/public involvement strategy or perhaps participation from obvious segments of the community is lacking and a change of meeting location, time or notification practices is necessary for wider participation from the community. Therefore, the community/public involvement program should be reviewed periodically to assess its effectiveness. The assessment could come through feedback elicited from the community at community/public involvement events or through the project team's assessment of performance measures associated with community/public involvement activities.

APPENDIX A

Appendix A. Glossary of Terms

Alignment – The line which represents the location of a highway being considered.

Alternative – One of a number of specific transportation improvement proposals, alignments, options, design choices, etc. in a study. Following detailed analysis, one improvement alternative is chosen for implementation. Sometimes, the term "alternate" is used interchangeably with "alternative."

Categorical Exclusion – 1. A classification given to federal aid projects or actions that do not have a significant effect on the environment either individually or cumulatively. Categorical Exclusions do not require extensive levels of environmental documentation. 2. The written documentation to support a Class of Action that satisfies federal criteria describing nonsignificant impacts.

Charette - A series of intensive project workshops involving the Department, agencies, local government officials, and affected citizens.

Community – A community is comprised of people having common interests, and the places where these people live, work, shop, socialize, conduct business, and recreate. Communities can be identified based on geographical, natural, physical, social, racial, ethnic, religious, or economic relationships or characteristics that members have in common with one another.

Community Context Audit – A PennDOT guide to identify various community characteristics that make each transportation project location unique to its residents, its businesses and the public in general.

Community Impact Assessment – A process used to evaluate the effects of a transportation project on a community and its quality of life.

Community/Public Involvement – Coordination events and informational materials geared at encouraging the public to participate in project development. A successful community/public involvement program facilitates the exchange of information among project sponsors and outside groups and the general public, and includes meetings, surveys, committees, presentations, etc.

Community stakeholders – a person or organization with a stake in a particular issue or resource. For example, when establishing a law relating to land use, local and state government, citizen's groups, local community representatives and private businesses are each considered stakeholders.

Conceptual Stage Survey Report – A PennDOT report designed to identify the number of families, businesses, and farms that would be displaced by a project and establish the probable availability of adequate replacement housing, buildings, or land.

Context Sensitive Solutions – A PennDOT-adopted policy to plan, design, construct, maintain, and operate multimodal transportation improvements and services that reflect community consensus with respect to identified transportation needs. The intent is to address safety and mobility and community impacts while preserving scenic, aesthetic, historic, environmentally sensitive areas and community valued resources.

Council on Environmental Quality – A branch of the Executive Office of the President that develops regulations used to implement the National Environmental Policy Act of 1969.

Department – The Pennsylvania Department of Transportation (PennDOT). This would encompass the District Offices as well as the various Bureaus within the Central Office of PennDOT.

Environmental Assessment – An exploratory report which is prepared when the significance of impacts is not clearly known. Referred to as Class III Action.

Environmental Impact Statement – A written assessment of the anticipated significant effects, both positive and negative, which a prospective agency decision may have upon the quality of the human environment, as provided in the National Environmental Policy Act of 1969.

Metropolitan Planning Organization – The agency designated by the Governor (or Governors in multi-state areas) to administer the federally required transportation planning process in a metropolitan area. An MPO must be in place in an urbanized area with a population over 50,000. The MPO is responsible for the 20-year long range plan and the transportation improvement program.

National Environmental Policy Act – Federal legislation requiring states to document the environmental impacts of a transportation project. PennDOT's Six-Step Transportation Project Development Process for Environmental Assessments has been developed to comply with NEPA. The 6-Step Process addresses all potential environmental, social, cultural, and economic impacts of a proposed transportation project before decisions are reached on design.

PennDOT – The agency of the Pennsylvania State Government responsible for the design, construction and maintenance of state highways and bridges in Pennsylvania, not including toll highways that are under the jurisdiction of the Pennsylvania Turnpike Commission. PennDOT is funded by state and federal tax dollars.

Qualitative Analysis – A general concept which categorizes a process used in certain types of environmental or route location studies where multiple factors are compared in a systematic and comprehensive manner on the basis of sound judgment. Factors analyzed by using a qualitative analysis are such that they cannot be measured in monetary terms, have no apparent common denominators, and are not readily quantifiable.

Quantitative Analysis – The process used in economic, cost-benefit, engineering, or traffic studies where multiple factors, elements, and/or outcomes are evaluated and compared by the use of measurable data. Certain mathematical models, formulas, numerical indices, rankings, and value matrices may be used to assist with such a process.

Regulatory Agency – An agency empowered to issue permits or recommend approval or denial of a permit.

Resource Agencies – Federal and state agencies which review regulated projects for their consistency and sensitivity to conservation and environmental laws and policies. Several resource agencies also possess regulatory power. These agencies include, but are not limited to:

- US Army Corps of Engineers
- US Environmental Protection Agency
- US Fish and Wildlife Service
- Pennsylvania Department of Agriculture
- Pennsylvania Department of Conservation and Natural Resources
- Pennsylvania Department of Environmental Protection
- Pennsylvania Fish and Boat Commission
- Pennsylvania Game Commission
- Pennsylvania Historical and Museum Commission

Rural Planning Organization – A decision-making forum, similar to Metropolitan Planning Organizations (MPOs), with similar responsibilities, representing rural areas of the Commonwealth.

Section 4(f) – Enacted as a portion of the U.S. Department of Transportation Act of 1966, Section 4(f) declares, "special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites". Section 4(f) applies to all historic sites, but also to only publicly-owned parks, recreation areas, and wildlife and waterfowl refuges.

Section 4(f) Evaluation – Statement of the Federal Department of Transportation Act of 1966, as amended, which documents that, with regard to any transportation program or project which requires the "use" of publicly owned land from a publicly owned park, recreation area, waterfowl or wildlife refuge, or historic site of national, state or local significance as determined by the Federal, State, or local officials having jurisdiction thereof, that (1) there is no feasible and prudent alternative to the use of such land; and (2) such program or project includes all possible planning to minimize harm to such land resulting from such use.

Section 106 – As required under the National Historic Preservation Act of 1966, federal agencies are required to take into account the effects of a proposed action that they may assist, permit, or license on National Register listed or eligible historic properties, and give the Advisory Council on Historic Preservation a reasonable opportunity to comment

with regard to such undertaking. The National Historic Preservation Act (at Section 101) and the Advisory Council on Historic Preservation's regulations (36 CFR 800) provide for the involvement of the State Historic Preservation Officer in the Section 106 process.

Technical Support Data – A compilation of raw data from all of the technical studies (e.g. noise and air quality analyses) conducted for a transportation improvement project. Also includes technical documents prepared as part of the environmental and preliminary design analyses.

Transportation Project Development Process – PennDOT's procedures for advancing a
transportation improvement project from concept to construction. The philosophy behind the process emphasizes the integration of engineering and environmental studies and coordination among Department offices, state and federal resource agencies and the public. The ultimate goal is to select, design, and construct the most reasonable, practical, cost-effective, technically sound and environmentally sensitive transportation improvement option.

Twelve-Year Transportation Program – The official prioritized listing, as adopted by the PA Department of Transportation and the State Transportation Commission, of those transportation improvements identified for development and implementation in Pennsylvania during the upcoming 12 years. The plan, together with any additions or changes, is subject to review and re-adoption biannually.

APPENDIX B

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF TRANSPORTATION

DATE: October 24, 2003 438-03-04

SUBJECT: ***Community Impact Assessment Policy/Guidance***

TO: ***All District Executives and Highway Administration Bureau Directors***

FROM: ***Gary L. Hoffman, P.E.***
Deputy Secretary for Highway Administration

Attached for your information and use is the newly developed PENNDOT Policy on Community Impact Assessment (CIA). All Engineering Districts and Highway Administration Bureaus are encouraged to review this policy and then to incorporate community considerations as part of their project development process.

CIA is a process to evaluate the effects of a proposed transportation action on a community and its quality of life. The elements of the PENNDOT CIA Policy provide for a number of considerations that should be addressed in all phases of the Transportation Project Development Process, including: planning, programming and prioritization, preliminary design, final design, and construction.

The purpose of PennDOT's CIA policy is to provide a framework to enhance and improve CIA activities and practices that PennDOT is already performing. This policy is consistent with the Governor's and PennDOT's "Plan for A New Pennsylvania" strategy and strives to make the Department increasingly aware of and respectful of community needs, values, goals, and desires.

It is anticipated that a handbook on Community Impact Assessment will be developed to provide more detailed suggestions for applying the principles and considerations to the transportation project development process.

Any questions or comments regarding this policy should be directed to Mr. Ralph Zampogna of the Environmental Quality Assurance Division at (717) 705-1481.

Attachment

PENNDOT Policy on Community Impact Assessment

Introduction

Transportation facilities and services make important contributions to a community's quality of life and its economy. Proposed transportation improvements can have a variety of impacts, positive and/or negative, on people and the surrounding natural, cultural, and community environment. The assessment of environmental impacts for major transportation improvements has been taking place for many years. Over time, the Pennsylvania Department of Transportation, (PENNDOT) has become more sensitive to developing transportation projects that better fit within the context of the many diverse communities found throughout Pennsylvania. Consequently, a better understanding and assessment of community issues in relation to the impacts of transportation actions is becoming increasingly important in the transportation decisionmaking process.

Community impact assessment (or CIA) is a "process used to evaluate the impacts of a (proposed) transportation action on a community and its quality of life" (Community Impact Assessment: A Quick Reference for Transportation, FHWA 1996). While the assessment of community impacts of transportation actions is currently taking place within PENNDOT, there is no formal policy, guidance, or procedure for performing CIA. The purpose of PENNDOT's CIA strategy initiative is to provide a framework to enhance and improve CIA activities and practices that PENNDOT is currently performing.

The following procedures serve to provide guidance to PENNDOT's District Offices on Community Impact Assessment. The procedures herein are not an adjudication or regulation. There is no intent on the part of PENNDOT to give the procedures in this guidance weight or deference. This document establishes the framework within which PENNDOT will exercise its administrative discretion in the future. PENNDOT reserves the discretion to deviate from this guidance if circumstances warrant. **This policy/guidance is for informational purpose only; it is not regulatory.**

CIA Policy

It is the policy of PENNDOT to work proactively in collaboration with communities in implementing the principles of Community Impact Assessment throughout the transportation project development process.

This policy is not a new initiative; rather it seeks to enhance and improve CIA activities and practices that the Department is currently performing. The goal of this policy is to better fulfill the intent of Federal and State laws, regulations, and policies concerning CIA, and to better serve Pennsylvania's communities. The elements of this policy on CIA provide for a number of principles and considerations that should be addressed in the planning, programming, design, and construction of transportation improvements in our Commonwealth's communities. This policy is consistent with PENNDOT's "Plan for a New Pennsylvania", and strives to make the Department increasingly aware and respectful of community resources, needs, values, goals, and objectives.

CIA Principles

In Pennsylvania, implementation of the following CIA principles shall be promoted during all phases of transportation project development:

- Recognize and understand the importance of community resources, needs, values, goals, and objectives in achieving balanced and equitable transportation decisions.
- Proactively identify and analyze community impacts throughout all phases of the project development process.
- Recognize those attributes and characteristics that define a community's "quality of life," even if they are not easily measured or quantified.
- Recognize the transportation needs and concerns of all populations within communities during the transportation decisionmaking process, including those who have not traditionally participated in public involvement activities.
- Promote meaningful citizen participation and public involvement throughout all phases of the transportation project development process.

Authority for CIA

The principles of CIA are contained in a series of Federal and State laws, regulations, and policies.

National Environmental Policy Act of 1969

The National Environmental Policy Act (NEPA) [42 U.S.C. § 4321-4347] requires that any activity or project receiving Federal funding or requiring Federal approval undergo an analysis of the effect of such action upon the natural and human environment. The Council on Environmental Quality (CEQ) regulations implementing NEPA [40 CFR 1508] defines the human, natural, and physical environments, and the relationship of people with the environment. The effects to be assessed include the ecological, social, economic, aesthetical, historic, cultural, and health, whether direct, secondary, or cumulative.

Federal-Aid Highway Act of 1970

The Federal-Aid Highway Act of 1970 as codified in 23 U.S.C. § 109(h) requires agencies to "…assure that possible adverse economic, social, and environmental effects relating to any proposed project on any Federal-aid system have been fully considered in developing such project, and that the final decisions on the project are made in the best overall public interest." The community and social effects to be considered include: "…destruction or disruption of man-made resources, aesthetic values, community cohesion, and availability of public facilities and services; adverse employment effects; tax and property value losses; injurious displacement of people, businesses, and farms; and disruption of desirable community and regional growth."

Other Federal Laws, Regulations, and Policies

Other Federal laws and regulations addressing the consideration or assessment of transportation impacts upon communities include:

- Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended
- Title VI of the Civil Rights Act of 1964 as amended and related statutes
- The Americans with Disabilities Act of 1990
- 23 CFR 771, Environmental Impact and Related Procedures (1987)
- 1987 FHWA Technical Advisory 6640.8A, Guidance for Preparing and Processing Environmental and Section 4(f) Documents

- Executive Order 12898 on Federal Actions to Address Environmental Justice

Pennsylvania Act 120
Pennsylvania Act 120 [71 P.S. § 512] requires the Department of Transportation to consider "residential and neighborhood character and location, ...displacement of families and businesses, ...recreation and parks, ...aesthetics, ...public health and safety, ...economic activity, ...employment, ...fire protection, ...public utilities, ...religious institutions, ...the conduct and financing of government including the effect on the local tax base and social service costs, ...natural and historic landmarks, ...and education, including the disruption of school district operations" in the preliminary planning and design of certain transportation projects.

Pennsylvania Act 247
Pennsylvania Act 247 of 1968 as amended, also known as the Municipalities Planning Code (MPC), is the State law which prescribes the procedural requirements for the development of comprehensive plans, zoning ordinances, subdivision and land development ordinances, and other aspects of land use planning in all jurisdictions of the Commonwealth, except for Philadelphia and Pittsburgh. Under Section 619.2, "Effect of Comprehensive Plans and Zoning Ordinances of the MPC," State agencies are to consider the comprehensive plans and zoning ordinances of local municipalities in reviewing applications for funding or permitting of infrastructure or facilities.

Pennsylvania Executive Orders 1993-3 and 1999-1
Commonwealth of Pennsylvania Executive Order 1993-3, "State Land Use Planning – Goals and Objectives for Commonwealth Agencies," and Executive Order 1999-1, "Land Use Planning," seek to increase the consideration and understanding of the link between transportation actions and local planning initiatives. Under EO 1993-3, State agencies are to consider a series of State-level land use goals and objectives in implementing agency plans and actions. One of these goals is to "…establish efficient land use patterns by encouraging growth which is consistent with existing infrastructure patterns."

EO 1999-1 establishes policy to guide all State agencies when making decisions that impact the use of land by seeking to improve the understanding of the impact of land use decisions on the environmental, economic, and social health of communities.

Importance of CIA
The assessment of a community's needs, values, goals, and objectives helps ensure that transportation policies and investments embrace the views of neighborhoods, communities, and society as a whole. Understanding the relationship between transportation actions and quality of life may lead to projects that fit more harmoniously within the context of the community while meeting the transportation needs of the community. Recognition of these attributes allows PENNDOT to provide needed transportation facilities and services that support overall community goals and objectives.

Defining Community
The definition of "a community" is an abstract concept that is not easily defined. Communities can be identified based on geographical, natural, physical, social, racial, ethnic, religious, or economic relationships that likely differ among the individuals or groups of individuals within that community.

Each of these varied relationships contributes to a sense of common unity and community cohesion that truly define one's sense of place.

These different concepts of community can occur within, what appears to an outsider to be, a rather homogeneous group of individuals who happen to live in a similar geographic location. Because of this complexity, it is important for PENNDOT to expand the traditional definition and concept of community to be inclusive of these subtle but distinct differences that can occur in a community. As communities in Pennsylvania become more diverse in physical (rural, suburban, and urban) and social (ethnicity, race, economics, etc.) characteristics, PENNDOT should strive to identify and understand local transportation needs, and evaluate how transportation projects affect our Commonwealth's communities.

Relationship of CIA to the PENNDOT Transportation Project Development Process

CIA is an iterative process that spans all phases of PENNDOT's project development process, from planning through construction. Performing effective CIA includes: the consideration of community resources, needs, values, goals, and objectives; the evaluation of potential project impacts; the determination of the significance of those impacts; the development of context sensitive solutions; the documentation of community impacts; and continuing collaboration with affected communities. CIA activities should be initiated and revisited, at various levels of detail, throughout the development of transportation projects in Pennsylvania (See tables 1 and 2).

A key consideration is the emphasis on early and continuing community coordination throughout the project development process. To better evaluate the impact of our transportation program on communities, the Department shall strive to involve all stakeholders [such as metropolitan planning organization (MPOs), rural planning organizations (RPOs), municipal officials, business leaders, neighborhood groups, the general public, etc.] within communities, including those who have not traditionally participated in public involvement activities. PENNDOT's *Public Involvement Handbook, Publication No. 295* provides suggestions for innovative and effective community involvement tools and techniques.

CIA Process and Methodology

Traditionally, evaluation of community issues has been based mainly on demographic, land use, and economic data and information, in combination with public meetings beginning in the preliminary design phase. These evaluations generally provided a good understanding of the needs of municipal governments and some segments of the community. However, these approaches relied heavily on readily available quantitative data and public input via traditional public meetings and public hearings. To truly understand the dynamics of a community requires PENNDOT to take an expanded approach. CIA provides the framework for the identification and analysis of not only quantitative data, but also qualitative characteristics that help define "quality of life" which must be derived from interaction with community stakeholders. The improved identification, understanding and consideration of those "quality of life" characteristics are an important element of PENNDOT's "Plan for a New Pennsylvania" transportation strategy. The development of timely transportation improvements that balance community and environmental concerns and improve the quality of life in Pennsylvania's communities is a strategic goal of this initiative.

The basic process for performing CIA is outlined below. This methodology provides a framework for understanding the community, the identification and analysis of potential community impacts, and development of transportation solutions that complement community goals and objectives while meeting the transportation needs of the project.

Step 1. Define the community study area through a synthesis of community boundaries

The CIA study area should reflect the varied physical and social boundaries that help define the geographic limits of a community. CIA practitioners need to recognize that social impacts can occur throughout a community and are not limited in extent to those areas immediately adjacent to a proposed transportation project. The CIA study area, because of the wide-ranging nature of community impacts, may involve a broader area than the typical project study area boundaries, which are typically based on the direct physical impacts of the alternatives under consideration.

The CIA study area may include a synthesis of the following community boundaries:

- Physical boundaries – boundaries attributable to man-made elements (bridges, roadways, buildings, etc.) or land use characteristics.
- Natural boundaries – boundaries attributable to natural features of the landscape; such as topography, watersheds, bodies of water, wildlife habitat, and vegetative natural communities.
- Administrative boundaries – political boundaries and boundaries attributable to such organizations as school districts and infrastructure authorities.
- Social boundaries – boundaries attributable to ethnic concentrations, influence and extent of social, civic, and religious backgrounds.
- Economic boundaries – boundaries attributable to areas and types of employment and commercial opportunities.

While the limits of some of these boundaries are easily identified, the interpretation of others will require input from various community stakeholders.

The CIA study area boundaries should be clearly delineated on project mapping and graphics and made available to the public in a variety of forums (plans displays, public meetings, project websites, newsletters, etc.). The CIA study area boundaries should be periodically reassessed throughout the course of the project development process and modified as necessary based on community stakeholder input relative to changes in the proposed action or in the dynamics of the affected community.

Step 2. Develop baseline conditions

The development of community baseline conditions involves the collection of qualitative and quantitative data from field views, published agency sources, prior transportation studies, community organizations, municipal governments, and community and individual coordination activities. The documentation of community resources should not focus only on the physical location of resources, but also on the function, value, quality, and capacity of those resources. CIA is not only a collection and assessment of the physical location of resources and structures, but also the

functional and social characteristics of those features as they relate to the community's "quality of life."

To adequately characterize a community, information on a wide variety of community characteristics should be collected. A list of recommended community considerations on which to base the development of community baseline conditions is discussed later in this document (See Community Considerations section). In addition, a Community Context Audit, developed in PENNDOT's Context Sensitive Solutions initiative, should be completed during this step.

Comprehensive plans at both the municipal and county level can provide a wealth of information on communities and often include vision statements, and community goals, objectives, and values related to quality of life concerns. Comprehensive plans and other relevant planning studies, documents and ordinances should be reviewed as part of the development of baseline conditions.

Public involvement during this step can include a range of activities aimed at gathering information from community stakeholders and presenting the collected baseline information to the stakeholders. The goals of these activities are to verify that the study team has adequately identified baseline conditions, and to ensure a thorough understanding of important community issues. The identification and review of baseline conditions should be performed in consultation with the MPO or RPO, local officials, and other community stakeholders. The baseline conditions should be reassessed periodically throughout the project development process and modified as necessary.

Step 3. Identify and analyze potential beneficial and adverse impacts
Impact assessment in the CIA process is directly tied to community coordination efforts. The assessment of potential impacts of proposed transportation projects can be better determined with the direct input of those individuals, organizations, neighborhoods, and community stakeholders who are beneficially or adversely impacted. Information on the assessment of potential impacts should be shared with all stakeholders and their input should be considered during the transportation decision-making process.

Impact identification in the CIA process requires the consideration of both the beneficial and the adverse impacts of all project alternatives under consideration, including the no action alternative. Community impacts to be identified and analyzed should include both direct and secondary effects of the transportation project, and cumulative effects of transportation and other actions of other agencies, organizations, and/or individuals. Social impacts are often interrelated and may vary considerably between the different populations that comprise a community. The assessment of impacts should recognize those special and valued community elements that are of utmost importance to the community.

An important consideration in the identification and analysis of potential impacts is the equitable distribution of those impacts. The CIA process should identify and address if a certain segment of the community is receiving a majority of the beneficial or adverse impacts and if that situation is producing an inequitable sharing of those beneficial or adverse impacts from a community perspective.

A variety of tools and techniques are available to aid in assessing community impacts. Statistical analysis, geographic information systems (GIS) mapping analysis, visual assessments, focus groups, Delphi techniques, and case study comparisons are a few of the tools commonly used to examine the impacts of a transportation project on a community. Public involvement tools and techniques are also an important component of the CIA process. CIA practitioners should review *Community Impact Assessment: A Quick Reference for Transportation*, FHWA 1996, for additional information on available community impact assessment tools and FHWA's Pennsylvania Division Office guidelines entitled, *Environmental Justice: What You Should Know.*

CIA practitioners are encouraged to review transportation projects of similar scope or location for tools and results of CIA activities. This review can provide valuable information concerning successful CIA initiatives and offer suggestions for improving the assessment of community impacts.

Step 4. Determine significance of potential impacts
A CIA practitioner cannot determine the significance of community impacts without community collaboration. It should be recognized that the perception of impact significance may differ among segments of the community: however, the perception of those segments most directly affected is important. In determining the significance of community impacts, practitioners should consider several key factors, including: people potentially affected, the pervasiveness and duration of those impacts, and the magnitude of the impact upon community quality of life. Some of the tools and techniques used in Step 3 can also be used to help determine the significance of impacts. Coordination with community stakeholders is necessary to determine if those impacts can be avoided or minimized or if mitigative measures are necessary.

Another important consideration is the identification and analysis of impacts to community cohesion. Community cohesion is the degree to which residents have a sense of belonging to their neighborhood; a level of commitment of residents to the community; or a strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Cohesion refers to the degree of interaction among the individuals, groups, and institutions that make up a community. An evaluation of an action's effect (both positive and negative) on the cohesiveness among individuals, groups, and institutions within neighborhoods and the community as a whole should consider the following: splitting of neighborhoods; isolation of parts of neighborhoods or neighborhood groups; separation of residences from community facilities and services; adverse changes in access to neighborhoods; potential changes in land use development patterns; and changes in neighborhood/community quality of life.

Step 5. Identify context sensitive solutions
In concert with the Department's Context Sensitive Solutions (CSS) initiative, it should be the goal of every project to develop and identify transportation improvements/solutions that are context sensitive and help the project fit more harmoniously into the community. These context sensitive solutions should be developed in collaboration with the impacted communities.

If adverse impacts are identified, potential methods to address them may be explored. There are four primary methods for dealing with impacts that may be considered: avoidance, minimization, mitigation, and project enhancement. Avoidance involves changes to the project so that an adverse

impact does not occur. Minimization provides for project changes to reduce the amount, severity, or significance of the adverse impact. Mitigation involves the implementation of specific actions or design changes to alleviate or offset any adverse impacts that remain. Project enhancement, as defined under the CIA process, involves implementation of supplemental features or elements that provide additional benefits to a community and can be implemented at a reasonable expenditure of public funds. These supplemental elements could make the project fit more harmoniously into the community or assist the community in responding to changes brought about by the transportation project for little or no added cost. Project enhancements may involve specific design upgrades such as physical upgrades/betterments, aesthetic treatments, or community technical and planning assistance. In addition to PENNDOT, the implementation of solutions may require the involvement of governmental institutions, other State agencies, or non-governmental interests.

Potential solutions will be required to meet the legal and authoritative definition of mitigation, which indicates that solutions (1) address impacts that actually result from the transportation improvement, and (2) represent a reasonable public expenditure after considering the impacts of the action and the benefits of the proposed mitigation measures.

Public involvement during this step should entail activities that engage community stakeholders in the identification, development, and review of potential solutions. Visualization of potential solutions may likely play a key role in the evaluation of potential solutions especially in dealings with the public.

Step 6. Document findings
Documentation of CIA activities should be completed to ensure adequate consideration of community issues in the decisionmaking process. Documentation of CIA findings should be dynamic along each phase as the project progresses through the project development process.

As part of the CIA, a Community Context Audit should be conducted at the onset of the project during the planning stage by the MPO, RPO, PENNDOT and/or municipal officials and updated as the project progresses through the project development process. The results of the CIA should be summarized, documented and included in NEPA/PA Act 120 compliance documents to demonstrate consideration of community resources in project development and decisionmaking. The level of detail provided in the documentation should be commensurate with the significance of community impacts and the level of NEPA/PA Act 120 document (i.e., CEE, EA, EIS or EER).

Community Considerations
The following community considerations should be investigated and documented in establishing the community baseline (Step 2 of the CIA process) from which to assess project impacts. Data and information collected may involve quantitative and qualitative data derived from a variety of sources, including public involvement activities. Considerations involve developing an understanding of the interactions of the human environment, the physical environment, and the natural environment that define a community and its quality of life characteristics.

Human Environment

Community cohesion – the degree to which residents have a sense of belonging to their neighborhood or community, a level of commitment of residents to the community, or a

strong attachment to neighbors, groups, and institutions, usually as a result of continued association over time. Cohesion refers to the degree to which the interaction among the individuals, groups, and institutions that occur in a community. It is about people and their quality of life.

Community interaction and information flow – information and media sources, locations for popular informal social interaction.

Community leadership and activism – community organizations (social, business, volunteer, civic, etc) and other non-governmental groups and the influence and role of these groups in representing the community during decisionmaking.

Demographic characteristics – population, gender, age, ethnic, racial, income and economic characteristics and trends.

Economic and business conditions and employment – types of employment, employers, types of businesses, types of occupations, income and wage levels, cost-of-living index, local taxation, unemployment levels, local economic development programs, and poverty levels.

Governance – local government structure, advisory boards, and demographic profiles of elected and appointed government leaders

Local identity and heritage – history, traditions, events, and other cultural resources (historic structures, archaeological resources, historic districts, etc.) that contribute to community identity and pride, relationship to adjacent communities, and the identification and characterization of significant ethnic neighborhoods.

Recreational and creative arts opportunities – location and mobility/access to/from parks, trails, greenways, musical, theatrical, artistic, ethnic, athletic, and other recreational opportunities in the community (e.g., events, parades, festivals).

Religious and spiritual practices – identification of places of worship within the community, influence of these groups in the community (providing community and social services, role in community social events, etc.), identification of cemeteries and other places of special, spiritual importance.

Special community values – resources or relationships that substantially define the values and identity of a community (e.g., community linked to a special industry, educational facility, or cultural/recreational resource; a community identified as a center of governmental activity (local, county, State, Federal); or a community strongly linked to a famous individual or event, etc.

Physical Environment

Aesthetic considerations – recognized places, buildings, views, landscapes, or natural features important or valued by the community, and recognized areas seen as adverse to the aesthetic qualities of the community.

Educational characteristics – education level of community, quantity and location of schools, mobility/access to library services, and the integration of school activities and community participation.

Health services – location and mobility/access to/from comprehensive (physical, mental, sensory) health services for all segments of community (including children and elderly), special care resources such as retirement, assisted-living and nursing-care facilities, and recognized health hazards in community.

Infrastructure and public services – information on location and provision of water, wastewater, waste disposal, electrical, natural gas, transportation (e.g., roadways, sidewalks, bikeways, railroad track and facilities, airports, and ports or water terminals), and other infrastructure and services (including Act 537 plans), and the identification of issues associated with maintenance and protection of traffic of proposed alternative.

Public safety and emergency services – location and mobility/access to/from police, fire, ambulance services, identification of issues related to crime or personal safety within community, and the identification of issues associated with maintenance and protection of traffic of proposed alternative.

Social services – location and access to/from a variety of services,, such as, local food banks, homeless shelters, job training, transportation services, financial counseling services, and related government offices.

Natural Environment

Ecological context – recognized natural resources, landscapes, habitats or ecological qualities important to the community (either economically, recreationally, visually etc.), identification of any special relationship between community and natural environment that contributes to a sense of place.

Land use and land management – information on current and future land use patterns, local planning programs (including comprehensive plans and zoning ordinances), land acquisition costs, land organizations and conservation groups, conservation easements and conserved open space, substantial land owners, special land uses which contribute to the uniqueness of a community, property values, land protection or taxing programs (e.g., Agricultural Security Areas, Clean and Green, Enterprise Zones, PA Executive Order 2003-2)

Conclusion

This policy/guidance presents principles, processes, and considerations associated with the assessment of community impacts related to transportation plans and projects. This policy is effective immediately. The Department plans to prepare a Community Impact Assessment Handbook that will provide further guidance on implementation of this policy

Table IV-1: CIA and PennDOT Transportation Project Development Process

PENNDOT Transportation Project Development Process	CIA Activities	CIA Participants	
Planning	Broad-based scoping of community boundaries and identification of baseline conditions and potential beneficial and adverse effects. Conduct community context audit.	MPOs, RPOs, PENNDOT	Community Involvement
Prioritization and Programming	Review and update of broad-based CIA information developed in planning phase to confirm conditions and update community issues and concerns.	MPOs, RPOs, PENNDOT	
Preliminary Design (preliminary engineering and environmental studies)	Detailed CIA activities building on the broad-based information developed at the planning and prioritization/programming phases and incorporating a thorough assessment of project-level impacts. CIA information should be documented and included as part of NEPA/PA Act 120 compliance.	PENNDOT, FHWA, and Resource Agencies	
Final Design (design development, right of way and utility coordination)	Review and update of detailed CIA information developed at preliminary engineering phase to confirm effects.	PENNDOT, FHWA, and Resource Agencies	
Construction	Review of CIA solutions and mitigation commitments, if any exist.	PENNDOT, FHWA, and Resource Agencies	

Table IV-2: PennDOT Community Impact Assessment Process

CIA Process Steps	PENNDOT Transportation Project Development Process				
	Planning	**Prioritization and Programming**	**Preliminary Design**	**Final Design**	**Construction**
1. Define the community study area boundary	Major emphasis	Major emphasis	Minor emphasis	Minor emphasis	Minor emphasis
2. Develop baseline conditions	Major emphasis	Major emphasis	Major emphasis	Minor emphasis	Minor emphasis
3. Identify and analyze potential impacts	Minor emphasis	Minor emphasis	Major emphasis	Minor emphasis	Minor emphasis
4. Determine significance of potential impacts	Minor emphasis	Minor emphasis	Major emphasis	Minor emphasis	Minor emphasis
5. Identify solutions	Minor emphasis	Minor emphasis	Major emphasis	Major emphasis	Major emphasis
6. Document findings	Minor emphasis	Minor emphasis	Major emphasis	Major emphasis	Major emphasis
Community Involvement	Major emphasis				

APPENDIX C

Community Context Audit
For Transportation Projects

Purpose: The Community Context Audit form is intended to be a guide to identify various community characteristics that make each transportation project location unique to its residents, its businesses and the public in general. This information will help to define the purpose and need of the proposed transportation improvements based upon community goals and local plans for future development. The audit is designed to take into account the community's history or heritage, present conditions and anticipated conditions. As you complete this audit, please consider the interaction of persons and groups within your community when considering factors such as mobility and access *(vehicular, non-vehicular and transit modes)*, safety, local and regional economics, aesthetics and overall quality of life.

Municipality: _____

Project Location & Limits: _____

Attach a project location map to this form.

State Route #: _____ Road Name: _____

Township Route #: _____ Road Name: _____

For MPO/LDD Use Only

MPMS#: _____

Project Estimate/Budget/Funding Sources: _____

_____

Project Type:

Resurfacing	New Roadway	Intersection Improvements
Widening	Bridge Rehabilitation	Enhancement Project
Betterment Project	Bridge Replacement	Other _____

Project Description: _____

Reason for Project: _____

_____

Contact Person: _____ **Telephone #:** _____

Individual Completing Context Audit Form: _____ **Date:** _____

Section 1: Community Characteristics/Land Use

Please conduct a visual assessment in the field and attach a project location map. If appropriate, include a photo index for the project area. If appropriate gather public opinions and concerns about the proposed project. Consider community needs as the basis for this assessment. Assess the community characteristics and indicate the community's perception of importance for each characteristic.

	Yes	No	Importance High/Medium/Low
Is this place an established center?			H__ M__ L__
Is this place a multi-modal transportation center?			H__ M__ L__
Is this place is a commercial center?			H__ M__ L__

Community Context Audit
For Transportation Projects

Section 1: Community Characteristics/Land Use (continued)

	Yes	No	Importance High/Medium/Low
Is this place is a residential center?			H__ M__ L__
Is this place is a mixed residential /commercial center?			H__ M__ L__
Is this place an industrial center?			H__ M__ L__
Is this place a rural/agricultural area?			H__ M__ L__

Comments: _____
_____

Are there important cultural features or identifiers within the project area? H__ M__ L__
If yes, list: _____
_____
_____

Are there social/community features or identifiers within the project area? H__ M__ L__
If yes, list: _____
_____
_____

Are there important architectural features within the project area? H__ M__ L__
If yes, list: _____
_____
_____

Are there important natural features within the project area? H__ M__ L__
If yes, list: _____
_____
_____

Is this place of historical significance to the community? H__ M__ L__
If yes, list: _____
_____
_____

Overall assessment of community characteristics and setting: Urban Suburban Rural
(Please note, this is not the identification of a functional classification. This is an assessment of the community based upon physical characteristics noted above.)

Community Context Audit
For Transportation Projects

Section 2: Infrastructure Assessment

Assess the project or study area for the presence and adequacy of the following infrastructure items. If present *(a yes response)* and in poor condition, please make notation and provide any other relevant comments in space provided for each item. If not present (*a no response)*, indicate in the comment section if the item needs further evaluation. Indicate the level of importance each item may have to the community.

	Yes	No	Importance High/Medium/Low
Sidewalks			H__ M__ L__
Comments: _____			
ADA Compliance			H__ M__ L__
Comments: _____			
Bicycle Lanes/Paths/Facilities			H__ M__ L__
Comments: _____			
On-street Parking			H__ M__ L__
Comments: _____			
Transit Connections			H__ M__ L__
Comments: _____			
Transit Shelters			H__ M__ L__
Comments: _____			
Street Lighting			H__ M__ L__
Comments: _____			
Pedestrian Lighting			H__ M__ L__
Comments: _____			
Pedestrian Crossings			H__ M__ L__
Comments: _____			
Signals (Traffic & Pedestrian)			H__ M__ L__
Comments: _____			
Crosswalks			H__ M__ L__
Comments: _____			
Signage (traffic & directional)			H__ M__ L__
Comments: _____			

Overall Comments: _____

Community Context Audit
For Transportation Projects

_____

_____

Section 3: Neighborhood Culture, Aesthetics and Street Amenities

Assess the study area for the following amenities and cultural, aesthetic and comfort factors. If present *(a yes response)* and items are in poor condition, please make notation and provide any other relevant comments in the space provided for each item. If not present *(a no response)*, indicate in the comment section if the item requires further evaluation. Indicate the level of importance each item may have to the neighborhood.

	Yes	No	Importance High/Medium/Low
Public Space			H__ M__ L__
Neighborhood Parks /Open Space /Civic Areas			
Comments:_____			
Benches			H__ M__ L__
Comments:_____			
Trash Containers			H__ M__ L__
Comments:_____			
Street Trees			H__ M__ L__
Comments:_____			
Landscaping			H__ M__ L__
Comments:_____			
Wayfinding Signage			H__ M__ L__
Comments:_____			
Community Safety Issues			H__ M__ L__
Comments:_____			
Traffic Safety			H__ M__ L__
Comments:_____			

Please list any seasonal events affected by proposed improvements at this location. _____

_____

_____

Overall Comments: _____

_____

_____

Community Context Audit
For Transportation Projects

Section 4: Economic Development

Assess the project or study area for the following community development indicators. Indicate the level of importance for each indicator.

	Yes	No	Importance High/Medium/Low
Has this area been identified for new development?			H__ M__ L__
If yes, describe the proposed or planned development. _____			
Are visitors attracted to this area?			H__ M__ L__
If yes, indicate why? _____			
Is the local economy supported by historic, natural, cultural and entertainment resources?			H__ M__ L__
Does the roadway serve as a commuter corridor or gateway?			H__ M__ L__
Do stakeholders include business or other advocacy groups? *(in addition to public agencies and residential associations)*			H__ M__ L__
Is limiting sprawl a regional concern applicable to this place?			H__ M__ L__
Is redevelopment underway or planned for this place?			H__ M__ L__
If yes, how does the proposed transportation project impact redevelopment? _____			

Other comments regarding economic/community development: _____

Section 5: Community Planning

Assess the proposed project in context to local planning initiatives. Please provide the following information and documentation related to the project or study area.

	Yes	No
Does the municipality have a comprehensive plan?		
If yes, indicate the date of the plan. _____		
Is this project generally consistent with the municipality's comprehensive plan?		
If yes, indicate how. _____		
Are there any special studies associated with this project?		
If yes, please indicate the name of study or studies nd attach copies. _____		

Community Context Audit
For Transportation Projects

Section 5: Community Planning (continued)

Yes No

Has the municipality adopted a growth management plan or designated growth area?

If yes, is this project located within the designated growth area

Does this project have regional significance?

If so, explain. _____

_____

Identify planning and project development partners for this project. _____

_____

Are there other scheduled or planned projects that may tie into this project or impact this project?

If yes, please indicate the project name(s) and type of project(s). _____

_____

_____

Other Comments: _____

_____

_____

_____

APPENDIX D

Appendix D. References and Resources

PENNDOT COMMUNITY IMPACT ASSESSMENT GUIDANCE

PennDOT Community Impact Assessment Policy/Guidance and SOL 438-03-04, October 24, 2003

PennDOT Publication 216 "Community Impact Assessment" Brochure, 2003

COMMUNITY IMPACT ASSESSMENT WEB SITES

Community Impact Assessment web site for FHWA and the Florida Department of Transportation administered by the Center for Urban Transportation Research (CUTR) at the University of South Florida, http://www.ciatrans.net

FEDERAL HIGHWAY ADMINISTRATION (FHWA) COMMUNITY IMPACT ASSESSMENT GUIDANCE

23 U.S.C. 109(h) (from Federal-aid Highway Act of 1970).
http://environment.fhwa.dot.gov/projdev/imp109_h.htm

FHWA. *Community Impact Assessment: A Quick Reference for Transportation*. September 1996. http://www.ciatrans.net/TABLE.html

FHWA/Florida Department of Transportation. *Community Impact Assessment Strategic Plan*. April 1999. http://www.ciatrans.net/ciastrategicplan.html

FHWA. *Community Impact Mitigation: Case Studies*. May 1998.
http://www.ciatrans.net/Casestud.html

FHWA web site for "Legislation, Regulations, and Guidance".
http://www.fhwa.dot.gov/hep/legreg.htm

OTHER STATE DOT COMMUNITY IMPACT ASSESSMENT GUIDANCE

California Department of Transportation (CALTRANS), CALTRANS Environmental Program, Cultural Studies Office. *Community Impact Assessment*. CALTRANS Environmental Handbook Volume 4. June 1997. http://www.dot.ca.gov/hq/env/cultural/cia/index.htm

Florida Department of Transportation. *Community Impact Assessment: Enhancing Florida's Quality of Life*. Informational Brochure. http://www.dot.state.fl.us/emo/

Florida Department of Transportation, Central Environmental Management Office, and CUTR. *Community Impact Assessment Handbook: A Handbook for Transportation Professionals*. November 2000. http://www.cutr.usf.edu/pubs/cia_handbook.htm

Florida Department of Transportation, Central Environmental Management Office, and CUTR. *Community Impact Assessment in Florida Transportation Projects: Case Studies*. 2001. http://www.cutr.eng.usf.edu/pubs/reports.htm

Florida Department of Transportation, Public Transit Office, and CUTR. *Community Impact Assessment and Environmental Justice for Transit Agencies: A Reference*. January 2002. http://www.nctr.usf.edu/pdf/416-05.pdf

Florida Department of Transportation and Powell, Fragala & Associates, Inc. *Report of the Working Group on Community Impact Assessment, Public Involvement & Environmental Justice.* May 1997. http://www.dot.state.fl.us/emo/

Maryland State Highway Administration and Straughan Environmental Services, Inc. *Community Impact Assessment Manual, Tool Boxes, and Resources*. August 2004.

Washington Department of Transportation "Building Projects that Build Communities: Recommended Best Practices," http://www.wsdot.wa.gov/biz/csd/BPBC_Final/building_projects.pdf

OTHER COMMUNITY IMPACT ASSESSMENT MATERIALS

National Cooperative Highway Research Program (NCHRP). *NCHRP 456: Guidebook for Assessing the Social and Economic Effects of Transportation Projects*. 2001. http://gulliver.trb.org/publications/nchrp/nchrp_rpt_456-a.pdf

U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, and the Interorganizational Committee on Guidelines and Principles for Social Impact Assessment. *Guidelines and Principles for Social Impact Assessment*. May 1994. http://www.st.nmfs.gov/tm/spo/spo16.pdf

U.S. Environmental Protection Agency. *Community Culture and the Environment: A Guide to Understanding a Sense of Place*. November 2002. http://www.epa.gov/ecocommunity/pdf/ccecomplete.pdf

COMMUNITY IMPACT ASSESSMENT CONFERENCE AND WORKSHOP PROCEEDINGS

First National CIA Workshop, Sept. 15-16, 1998, Tampa, FL, proceedings http://www.ciatrans.net/First_CIA_Workshop.pdf

Second National CIA Workshop, Aug. 29-Sept. 2, 2000, San Diego, CA, proceedings http://www.dot.ca.gov/hq/env/cultural/cia/NatlCIAWorkshopProceedings.pdf

Northeast Regional CIA Workshop, Oct. 29-31, 2001, Newark, NJ, proceedings http://www.pps.org/cia.htm

Southern Regional CIA Workshop, Dec. 5-7, 2001, Raleigh, NC, proceedings
http://www.ciatrans.net/CIAWorkshopSummary2001.pdf

Third National CIA Workshop, Aug. 19-21, 2002, Madison, WI, proceedings for "CIA in the 21st Century: Making Connections and Building Relationships"
http://gulliver.trb.org/publications/circulars/ec054/CircE-C054%20CIA.pdf

Northwest Regional CIA Workshop, April 8-10, 2003, Spokane, WA, proceedings for "CIA: Connecting with People Today for a Well-Designed Tomorrow" are not available. The original event website is:
http://www.engr.washington.edu/epp/cia/

Midwest Regional CIA Workshop, Sept. 9-12, 2003, Indianapolis, IN, --"Community Impact Assessment: Putting It Into Context" proceedings
www.state.in.us/dot/programs/presentations.html

Community Impact Assessment Peer Roundtable, September 8-9. 2003, Indianapolis, IN, proceedings
http://www.planning.dot.gov/Peer/Forums/indiana_PF.htm

Fourth National CIA Workshop, Aug. 23-26, 2004, Portland, ME, event website
http://www.maine.gov/mdot/workshops-conferences-events/cia/index.php

FHWA, Center for Transportation and the Environment, and Powell, Fragala and Associates. *FHWA Community Impact Assessment Pilot Training Course: Course Participant's Notebook*. Harrisburg, PA. March 22-24, 2005.

WEB LINKS TO POTENTIAL COMMUNITY IMPACT ASSESSMENT DATA SOURCES

PASDA, various GIS data layers related to communities http://www.pasda.psu.edu

PA DCED (e.g., KOZs, KIZs, EZs) http://www.invent.pa.com

PA DCNR, state parks information, http://www.dcnr.state.pa.us

PA DEP eMap, community featurescand mapping of potential EJ areas
http://www.emappa.dep.state.pa.us

PA Fish and Boat Commission http://www.fish.state.pa.us

PA Game Commission http://www.pgc.state.pa.us

PA L&I, employment statistics, http://www.dli.state.pa.us

PHMC, listings of historic resources, http://www.phmc.state.pa.us

Pennsylvania Growing Smarter, PA comprehensive plans and land use plans
http://www.landuseinpa.com

U.S. Bureau of Economic Analysis, economic statistics web site, http://www.bea.gov

U.S. Bureau of Labor Statistics, economic statistics web site, http://www.bls.gov

U.S. Census Bureau, demographics web site, http://www.census.gov

U.S. Department of Health and Human Services, poverty level web site,
http://www.aspe.dhhs.gov/poverty/index.shtml

U.S. Department of Housing and Urban Development, low –income and public housing sites and community features mapping web site, http://hud.esri.com/egis/

U.S. Environmental Protection Agency, community features mapping web site,
http://www.epa.gov/enviro/wme/

OTHER PENNDOT RESOURCES

PennDOT VideoLog http://www.dot7.state.pa.us/ividlog/video_locate.asp

PennDOT Cultural Resources GIS

PennDOT. Publication 10A, *Design Manual Part 1A*

PennDOT Publication No. 273, *A Guide to Effective Surveying*

PennDOT. Publication 295, *The Transportation Project Development Process, Public Involvement Handbook*.

PennDOT Publication No. 349, *Section 4(f) Handbook*

PennDOT. Publication 378

PennDOT *Public Involvement Program and Procedures for Transportation Planning and Programming*

PennDOT *Every Voice Counts – environmental justice brochure.*

OTHER FHWA RESOURCES

FHWA, Pennsylvania Division, *Environmental Justice: What You Should Know*. 2002