

*Pennsylvania Department
Of Transportation*

Project Level Environmental Justice Guidance

Publication No. 746

PREFACE

This document is intended to assist the Pennsylvania Department of Transportation (PennDOT), its consultants, and other potential users in the completion of project level Environmental Justice analyses in compliance with Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, and applicable current federal and state requirements for Federal-aid transportation projects on behalf of the Federal Highway Administration. 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 guidance is for informational purposes only; it is not regulatory.

GLOSSARY OF KEY ENVIRONMENTAL JUSTICE TERMS

Source: USDOT Order 5610.2a and FHWA Order 6640.23A.

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

Disproportionately high effects – Effects that are:

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

Low-income – A person whose median household income is at or below the Department of Health and Human Services poverty guidelines.

Low-income population – Any readily identifiable group of low-income persons who live in geographic proximity, and, if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed U.S. Department of Transportation program, policy or activity.

Minority – A person who is:

- (1) Black: a person having origins in any of the black racial groups of Africa;
- (2) Hispanic or Latino: a person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race;
- (3) Asian American: a person having origins in any of the original peoples of the Far East, Southeast Asia, or the Indian subcontinent;
- (4) American Indian and Alaskan Native: a person having origins in any of the original people of North America, South America (including Central America), and who maintains cultural identification through tribal affiliation or community recognition; or

- (5) Native Hawaiian and Other Pacific Islander: people having origins in any of the original peoples of Hawaii, Guam, Samoa, or other Pacific Islands.

Minority population – Any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed U.S. Department of Transportation program, policy or activity.

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1.0 Introduction

1.1 WHAT IS ENVIRONMENTAL JUSTICE?

Environmental Justice (EJ) refers to the implementation of Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, which directs procedures to be put in place to identify and address any disproportionately high and adverse human health or environmental effects on minority and low-income population groups. The fundamental principles of EJ can be defined as:

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

1.2 EO 12898, FEDERAL ACTIONS TO ADDRESS ENVIRONMENTAL JUSTICE IN MINORITY POPULATIONS AND LOW-INCOME POPULATIONS

President Clinton issued EO 12898 on February 11, 1994, which reinforces the importance of fundamental rights and legal requirements contained in Title VI of the Civil Rights Act of 1964 and the National Environmental Policy Act (NEPA). EO 12898 directs that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations”.

The complete text of EO 12898 may be found at the following link:

<http://www.archives.gov/federal-register/executive-orders/pdf/12898.pdf>

The Presidential Memorandum that accompanied EO 12898 calls for a variety of actions. Four specific actions were directed at NEPA-related activities, including:

1. Each Federal agency must analyze environmental effects, including human health, economic, and social effects, of federal actions, including effects on minority communities and low-income communities, when such analysis is required by NEPA.
2. Mitigation measures outlined or analyzed in Environmental Assessments (EAs), Environmental Impacts Statements (EISs), or Records of Decision (RODs), whenever feasible, should address significant and adverse environmental effects

of proposed Federal actions on minority communities and low-income communities.

3. Each Federal agency must provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities and improving notices to affected communities.
4. In reviewing other agencies' proposed actions under Section 309 of the Clean Air Act, the U.S. Environmental Protection Agency (EPA) must ensure that the agencies have fully analyzed environmental effects on minority communities and low-income communities, including human health, social, and economic effects.

After the publication of EO 12898, the Council on Environmental Quality (CEQ) and EPA developed guidance to further assist Federal agencies in addressing EJ concerns:

- Environmental Justice: Guidance Under the National Environmental Policy Act (CEQ 1997)
http://www3.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_ceq1297.pdf
- Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analyses (EPA 1998)
http://www.epa.gov/environmentaljustice/resources/policy/ej_guidance_nepa_epa0498.pdf

1.3 TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

EO 12898 reinforces many of the requirements contained in Title VI of the Civil Rights Act of 1964 and therefore, it is important to have an understanding of the key provisions of Title VI. Title VI of the Civil Rights Act of 1964 prohibits discrimination by recipients of Federal financial assistance on the basis of race, color, and national origin, including matters related to language access for persons with Limited English Proficiency (LEP). Supplemental legislation provides these same protections from discrimination based on sex, age, disability or religion.

The complete text of Title VI of the Civil Rights Act of 1964 can be found at:
<http://www.justice.gov/crt/about/cor/coord/titlevstat.php>

The Pennsylvania Department of Transportation (PennDOT) has an established policy and set of assurances related to compliance with Title VI. PennDOT's Title VI Policy Statement is incorporated within PennDOT's *Title VI Compliance and Implementation Plan* and can be found at the following link: <http://www.dot.state.pa.us/public/PubsForms/Publications/PUB%20478.pdf>

1.3.1 Relation of EO 12898 to Title VI of the Civil Rights Act

EO 12898 serves to reinforce and reaffirm the fundamental rights and legal requirements contained in Title VI of the Civil Rights Act for specified populations. Title VI imposes statutory and regulatory requirements that are broader in scope than EO 12898 in some respects and narrower in others. EO 12898 and Title VI of the Civil Rights Act have many similarities but have some key differences as noted in Table 1.

Relationship between EO 12898 and Title VI

SIMILARITIES	DIFFERENCES
<ul style="list-style-type: none"> ▪ Both address non-discrimination. ▪ Both capture minority populations. ▪ Both are rooted in the constitutional guarantee (14th Amendment) that all citizens are created equal and are entitled to equal protection. ▪ Both address involvement of impacted citizens in the decision-making process through meaningful involvement and participation. 	<ul style="list-style-type: none"> ▪ EO 12898 covers minority and low-income, while Title VI and supplemental legislation cover race, color, national origin, sex, age, disability and religion. ▪ EO 12898 is an executive order (an order of the President of the United States), while Title VI is a law (an act of Congress). ▪ EO 12898 mandates a process, while Title VI prohibits discrimination.

Engaging in an EJ analysis pursuant to EO 12898 under Federal transportation planning and NEPA provisions will not necessarily satisfy Title VI requirements. Similarly, a Title VI analysis will not necessarily satisfy EO 12898, given that Title VI does not include low-income populations. Also, Title VI applies to all activities of Federal recipients, not solely those activities which may have disproportionately high and adverse human health or environmental effects on EJ populations.

1.4 USDOT AND FEDERAL HIGHWAY ADMINISTRATION IMPLEMENTATION OF EJ

To meet their obligations under EO 12898, and create consistency in implementation, the USDOT and the Federal Highway Administration (FHWA) have published a series of orders, memoranda, and other guidance directed internally and to their funding recipients, including state departments of transportation. Current USDOT and FHWA directives are summarized below.

1.4.1 USDOT Environmental Justice Strategy (March 2012)

The USDOT released a revised EJ Strategy in March 2012 that reiterates the USDOT's commitment to EJ principles and to integrating those principles into USDOT programs, policies, and activities. The USDOT EJ Strategy calls for USDOT operating agencies whose programs, policies, or activities may have disproportionately high human health or environmental effects on

minority populations and low-income populations to have in place or develop tools and documents, that may include guidance, best practices, handbooks, administrative statements, circulars, or other products, as appropriate, for achieving EJ in their programs.

The complete text of the USDOT Environmental Justice strategy can be found at the following link: http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/dot_ej_strategy/

1.4.2 USDOT Order 5610.2(a) Final DOT Environmental Justice Order (May 2012)

USDOT Order 5610.2(a), which updates and replaces the 1997 USDOT Order on EJ, sets forth policy for considering EJ principles in all USDOT programs, policies, and activities. It describes how the objectives of EJ will be integrated into planning and programming, rulemaking, and policy formulation. Order 5610.2(a) sets forth steps to prevent disproportionately high and adverse effects to minority or low-income populations through Title VI and EJ analyses conducted as part of Federal transportation planning and NEPA provisions. It also describes the specific measures to be taken to address instances of disproportionately high and adverse effects and sets forth relevant definitions.

The complete text of USDOT Order 5610.2(a) can be found at the following link: http://www.fhwa.dot.gov/environment/environmental_justice/ej_at_dot/orders/order_56102a/index.cfm

1.4.3 FHWA Order 6640.23A, FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (June 2012)

FHWA Order 6640.23A, which updates and replaces the 1998 FHWA directive on EJ, establishes policies and procedures for FHWA to use in complying with EO 12898. FHWA managers and staff are directed to administer their programs to identify and address, as appropriate, disproportionately high and adverse effects of FHWA programs, policies and activities on minority populations or low-income populations.

The complete text of FHWA Order 6640.23A may be found at the following link: <http://www.fhwa.dot.gov/legsregs/directives/orders/664023a.htm>

1.5 PENNDOT IMPLEMENTATION OF EJ

Following the issuance of EO 12898, PennDOT has incorporated the principles of EJ into its programs, policies, and activities. PennDOT Publication *Every Voice Counts; Moving Toward Environmental Justice*, dated July 2012, outlines planning level policies and procedures for PennDOT planners and planning partners to address EJ during the planning and programming processes.

Planning level EJ responsibilities are described extensively within the *Every Voice Counts* publication and consist of:

- Identifying the presence of EJ populations within planning areas
- Public involvement and outreach that engages EJ populations in planning areas and emphasizes the necessity to document those engagements adequately for potential use in the project delivery process.
- Assessing the effects of transportation planning policies, investments, and programs on EJ populations and as appropriate, avoid, minimize, or mitigate disproportionately high and adverse human health and environmental effects.

The complete text of the *Every Voice Counts* publication may be found at the following link:

<http://www.dot.state.pa.us/public/pubsforms/Publications/PUB%20737.pdf>

Project level EJ responsibilities are outlined in Section 2.0 of the document.

2.0 Project Level EJ Analysis

The following guidance for meeting the requirements of EO 12898 applies equally and in full for all PennDOT transportation projects. However, for certain Level 1a Categorical Exclusions (CEs) and Environmental Documentations (EDs) that do not involve physical construction as defined in PennDOT Publication 10, *PennDOT's Design Manual 1*, project level EJ analysis would not typically be required unless there are known circumstances or community concerns that indicate potential adverse effects on EJ populations. The EJ Analysis Framework (see Figure 1) provides a step-by-step approach for ensuring requirements of EO 12898 are properly identified, considered, and documented. The EJ Analysis Framework involves a sequential process with a decision point between analysis steps. An answer of “yes” at a decision point requires continued consideration of EJ by moving to the next analysis step. If the analyst can answer “no” at a decision point, no further EJ analysis is required (i.e. the remaining analysis steps are not applicable). Upon confirmation of the EJ findings and placement of those findings in the NEPA document and Technical Support Data files, the EJ analysis process is considered complete. The framework is outlined in Sections [2.1](#) to [2.5](#).

2.1 DETERMINE IF PROJECT IS EXEMPT FROM DETAILED EJ ANALYSIS

In recognition that certain types of actions are unlikely to generate disproportionately high and adverse effects on EJ populations, PennDOT, in consultation with the FHWA, Pennsylvania Division Office, has developed a list of projects exempt from detailed project level EJ analysis.

2.1.1 Projects Exempt from Detailed Project Level Environmental Justice Analysis

The following types of projects, based on their nature and past experiences with similar actions, are unlikely to have disproportionately high and adverse effects on Environmental Justice populations. No project level analysis is needed if the accompanying stipulations are met and the primary work activities meet one or more of the criteria listed below:

Stipulations:

The following stipulations are applicable to all actions and activities meeting the criteria identified below:

1. Minor right-of-way acquisition is permitted in the form of strip takes where the taking does not affect the use (parking, access, etc.) of the property from which it is acquired and the strip take must abut the existing transportation right-of-way.
2. The project does not result in a significant impact on travel patterns based on detours for the traveling public, including bicycle and pedestrian users. Detours are generally considered as significant if they result in
 - a). a travel delay of greater than 20 minutes for automotive/truck traffic;
 - b). a greater than 0.5 mile detour for pedestrians; or
 - c). a greater than 2.0 mile detour for bicyclists or other non-motorized modes.

Effects such as travel delay, air quality impacts, safety, and access for schools, businesses and communities (including EJ and non-EJ businesses and communities) impacted by diverted traffic must also be considered in the design of detour routes and the determination of significance.

3. If project involves significant lane closures or access restrictions, proper early coordination is performed with affected communities and property owners.
4. No significant public controversy on Title VI issues pertaining to the project.

Criteria for Exempt Project Types:

A. Pavement Preservation and Roadway Rehabilitation

The following four (4) categories of Pavement Preservation and Roadway Rehabilitation activities:

1. Pavement Preservation including: overlay projects; mill and overlay projects; micro-surfacing; ultra-thin friction course; cold in-place recycling; seal coat; ultra-thin white topping; concrete patching and joint rehabilitation; diamond grinding; and dowel bar retrofit. This includes the construction of crossovers in previously disturbed medians.
2. Roadway Maintenance Betterments/Roadway Rehabilitation (3R) (Resurfacing, Restoration, and Rehabilitation) including: pipe replacement; guiderail replacement; and paving and overlays on existing alignment.
3. Roadway Reconstruction within the same approximate footprint including: replacement; crack and seat; and rubblizing.
4. Minor widening provided such widening is performed in accordance with the stipulations outlined above.

B. Bridge Preservation

The following twelve (12) categories of Bridge Preservation activities:

1. Expansion dams: repair, replace or install new expansion dams to ensure leak proof joints. Repairs to deck drainage or down spouting may also be included. Replacement of seals is also permitted, provided other items, if any, relative to leakage are also addressed.
2. Beam end repairs and restoration: restore steel, concrete or pre-stressed (P/S) concrete beam- ends to extend their service life.
3. Bridge bearings and supports: restore or replace the existing bearings to make them functional and repair or rehabilitate substructure units to extend service life.
4. Approach slabs: repair the approach slab as necessary where the condition of the approach slab is affecting the performance of the bridge. Where practical and

needed, repair or replace approach slabs, pavement relief joints, and other high spots adjacent to bridge to restore functionality and/or improve rideability.

5. Deck restoration and overlays: concrete deck patching (Repair Types I, II, or III) and/or waterproofing overlays (i.e., latex concrete, bituminous with membrane) needed to extend deck life and improve rideability.
6. Spot/Zone painting: spot/zone painting can be used as a stand-alone measure or with other steel repair items. Cleaning and waste disposal is included in this item.
7. Painting: full overcoats or complete repainting, with cleaning, waste disposal, and steel repairs.
8. Fatigue and Fracture Retrofits: retrofits or repairs to fatigue-prone details of steel bridges.
9. Scour Countermeasures: scour countermeasures including underpinning, riprap placement, stream bed paving, grout bags, sediment deposition and debris removal, etc. properly designed for predicted scour.
10. Concrete repairs, concrete sealing, crack sealing.
11. Guiderail updates or repairs.
12. Bridge washing and cleaning activities including waste disposal.

C. Bridge Rehabilitation and Replacement

The following ten (10) categories of Bridge Rehabilitation and Replacement activities (the term “bridge” includes bridges as well as culverts (box, metal and concrete pipe, arch, etc.)):

1. Bridge replacement activities including but not limited to, in-kind replacement within the same approximate footprint and reconstruction of bridge superstructure and/or substructure.
2. Bridge decking and/or bridge barrier (parapet) replacements or modifications and substructure repair and modifications.
3. Replacement or strengthening of beams and other structural components of the bridge to extend the longevity of the structure.
4. In-kind replacement, reconstruction or ordinary repair or modification of existing bridge-mounted lighting, guiderails, curbs and gutters, sidewalks, noise barriers, signing, utility supports, fencing, etc. on the bridge.
5. Overlay, milling, grooving, repairing (concrete or asphalt patching), striping, or resurfacing of existing bridges; or addition of pavement markings (normal and raised), and snow and ice detectors to the same.
6. Other bridge related maintenance and repair actions, including but not limited to: overlay of existing approach roads for all bridges (not to exceed 500-feet of approach work (including pavement, guiderail and shoulder work) on either side of the bridge); seismic retrofits; in-kind replacement or repair of pedestals or

bearing seats, bearings, shear blocks, diaphragms, structural steel, bridge and off-structure drainage, slope protection, steel caps, protective jackets, and dolphins; installation of external post-tensioning; and other similar routine actions.

7. Any remedial activity to an existing culvert or concrete rigid frame structure less than 20 feet in length, or pipe, so long as the remedial work is aesthetically and functionally in-kind and in the same footprint (no new elements or expansion).
8. General highway maintenance on bridges, including filling potholes, crack sealing, mill and resurfacing, joint grinding/milling, shoulder reconstruction, minimal bank stabilization, etc. within the bridge right-of-way.
9. Bridge beautification or facility improvement projects (e.g., curb and gutter replacement, decorative lighting, etc.).
10. Construction of bicycle and pedestrian lanes, paths and facilities on existing bridges provided that any required widening is performed in accordance with the stipulations outlined above.

D. Non-Complex Projects

The following ten (10) categories of Non-Complex (minor) Project activities:

1. Intersection improvement projects with minor or no signal layout changes, or unsignalized.
2. Construction of turn lanes at intersections.
3. Construction, replacement or maintenance of sign structures including Dynamic/Variable Message Sign structures.
4. Guiderail/barrier installation, elimination, replacement or updating.
5. Traffic operations activities with minor or no roadway work including signalization, signing, pavement markings (including raised pavement markers (RPM), and roadway lighting.
6. U.S.C. Sections 130 and 148 Highway 130 Safety Projects (relating to railroad grade crossings).
7. Transportation Enhancement Projects designed to address pedestrian and bicycle facilities.
8. Transportation corridor fringe parking areas and park and ride facilities located within previously disturbed right-of-way.
9. ADA curb cuts in areas that involve no disturbance outside of the existing right-of-way or no disturbance beyond the existing curb/sidewalk limits.
10. Slope restoration/slide repairs that involve no disturbance outside of the existing right-of-way.

E. Emergency Projects

The following two (2) categories of Emergency Project activities:

1. Emergency activities that meet the requirements for funding via the FHWA Emergency Relief (ER) Program.
2. Emergency activities that are conducted under a declaration of emergency by the President or the Governor.

F. Other Projects

Activities that are conducted when the Secretary of Transportation has determined that a transportation-related hazard exists and immediate action is necessary to resolve the problem.

Decision Point:

◇ *Is project likely to require EJ analysis per exemption list?*

If the answer is yes, project is not exempt, continue to the next step.

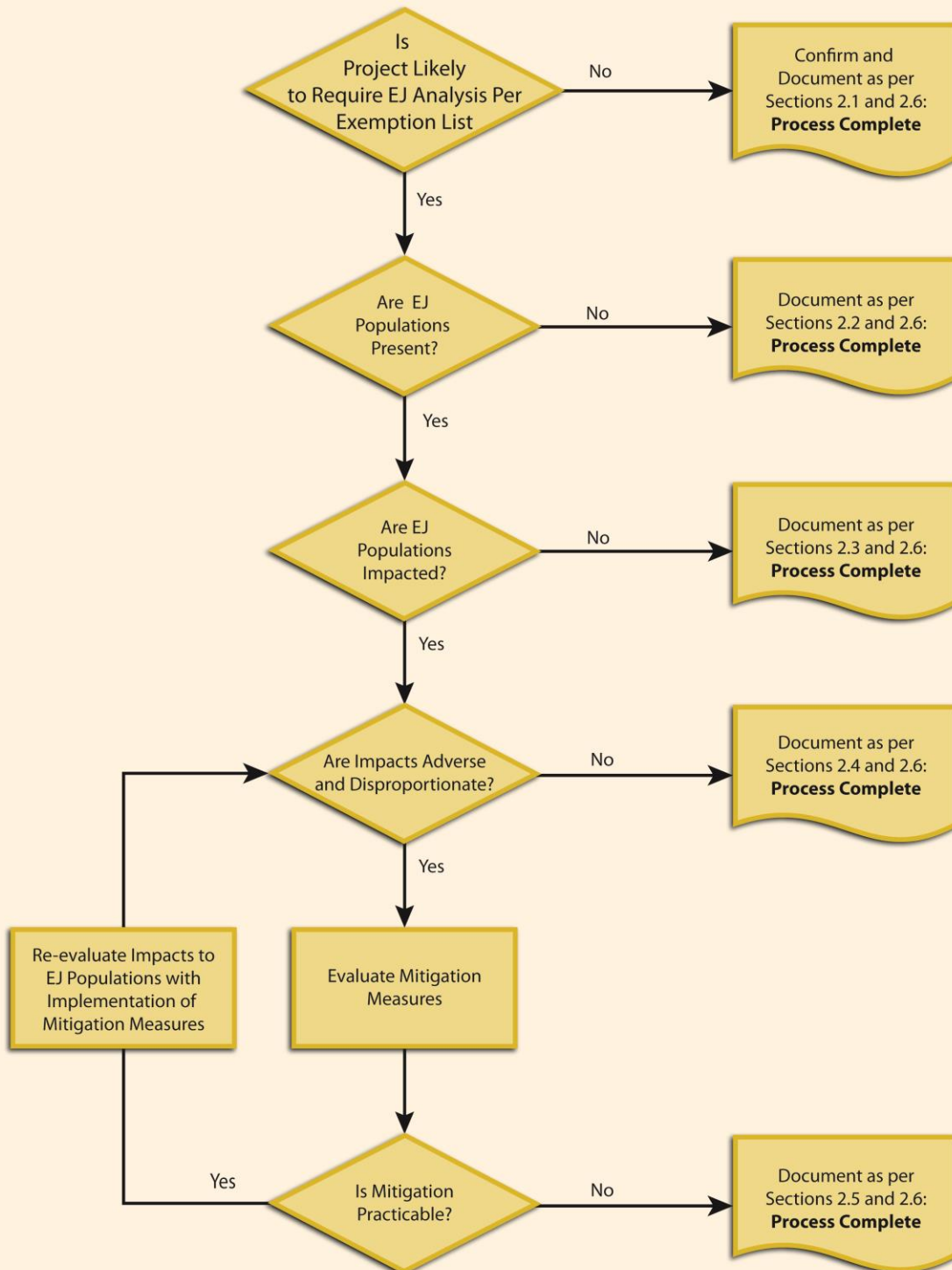
If the answer is no, based upon review of the exempt project list found on pages 6 through 10, confirm this in the NEPA document and place data and information collected in the project's Technical Support Data files (Sections [2.1](#) and [2.6](#)). No further EJ analysis is required.

2.2 IDENTIFYING EJ POPULATIONS WITHIN PROJECT AREAS

A key element of project level EJ analysis entails reviewing basic socioeconomic characteristics about the people who live and work in the vicinity of a proposed project to determine the presence of readily identifiable groups of minority and/or low-income populations. Groups of EJ populations could occur as cohesive neighborhoods within a municipality or could encompass a broad area which is comprised of minority or low-income populations but have no specific concentrations of EJ residents.

Initially, information and data collected and documented during the planning and programming phase via the Linking Planning and NEPA (LPN) screening forms should be transferred to the project team and reviewed. EJ issues, if identified during planning, are typically documented under the "public and agency involvement" section of the LPN screening forms. Other documents developed during the planning stages that may contain data and information on EJ populations and should be reviewed include Long Range Transportation Plans and Public Participation Plans prepared by metropolitan and rural planning organizations. This information will assist in understanding community characteristics and potential EJ concerns. Information that may be available would include data on identified EJ populations (e.g. successful contact methods, key contacts (names and contact information), neighborhood boundaries, key employers and community facilities, etc.), results of public involvement efforts including EJ

Figure 1: Project Level Environmental Justice Analysis Framework



outreach, and assessments of potential planning level impacts (both adverse and beneficial) on EJ populations.

EJ considerations at the planning and programming phase are generally developed at a broader scale than necessary for a project level EJ analysis, so additional consideration of EJ populations and impacts may be necessary to meet the requirements of EO 12898.

In determining a proper evaluation area for identifying EJ populations, the entire area within which direct and indirect impacts of the project could be generated should be considered. This means the evaluation area might need to be expanded beyond the immediate area of construction, as necessary, to include areas such as those along detour or bus routes.

Once an evaluation area has been defined, the identification of EJ populations should be based on available demographic data, field observations, and/or coordination with persons or organizations with knowledge of the area.

2.2.1 Demographic Data

PennDOT's *Every Voice Counts*, Section 3, Identifying EJ Communities, highlights a variety of data sources and tools potentially valuable for performing EJ analysis. The most commonly used and comprehensive source of demographic data comes from the U.S. Census Bureau. Detailed Census data can be collected directly from the U.S. Census Bureau using the on-line American Fact Finder tool (<http://factfinder2.census.gov/>). Using the geographies tab allows you to identify Census geography (e.g. census tract, block group) applicable to your study area with a map tool. With this information, users can then directly obtain extensive minority and low-income data available from various Census products. One such Census product is the American Community Survey (ACS). The ACS is an ongoing statistical survey that samples a small percentage of the population every year. The ACS provides estimates on minority and low-income populations at various Census geographies (<http://www.census.gov/acs>). The ACS and other Census Bureau tools use the U.S. Department of Health and Human Services (HHS) poverty guidelines to determine the low income threshold. The most current HHS poverty guidelines can be found at HHS's website: <http://aspe.hhs.gov/poverty/>.

One of the tools identified in *Every Voice Counts* which may be particularly helpful in determining the presence of EJ populations is the U.S. Environmental Protection Agency's on-line EJSCREEN tool (<http://www.epa.gov/ejscreen>). This internet mapping tool allows users to outline a potential transportation improvement area (using either a linear or polygon study area) and then outputs a series of EJ-related data (Appendix A). EJSCREEN allows users to generate standardized reports that provide various EJ Indexes, Environmental Indicators, and Demographic Indicators in tabular and graphic format. Project level analysis will need to look at percent low income and percent minority, which is provided in EJSCREEN through the 2000

and 2010 Decennial Census, and the 2008-2012 American Community Survey (ACS). An additional feature of EJSCREEN is the ability to input layers from a web service, such as the layers available through PennShare.

While information from the U.S. Census Bureau, EJSCREEN and similar national databases provide core foundational data for identifying EJ populations, this data should be supplemented as necessary through other data directly applicable to the affected community from other federal, state or local sources. Information that may be helpful in characterizing an EJ community includes data on subsidized housing, free or reduced school lunch program participation, ethnic languages, supplemental nutrition assistance programs (SNAP) participation, or data on public assistance recipients.

Please note that EJ determinations are made based on effects, not population size. A very small minority or low-income population in the vicinity of a project does not eliminate the possibility of a disproportionately high and adverse impact on these populations. It is incorrect to suggest that if minority or low-income populations are small in numbers, there is no need for further EJ consideration. For example, based on a review of demographic data for a project area the data indicates that out of a total population of 700 people the percentage of low-income populations is 5 percent (35 people). While the percentage of low-income populations may be considered to be small, the project entails intersection improvements and there is a government subsidized housing development in one quadrant of the intersection. The government subsidized housing development may contain concentrations of low-income populations, possibly the majority of the 35 noted in the demographic data. Therefore, low-income populations may be present and warrant further consideration.

2.2.2 Field Observations

Field views of the project area should be performed with the intent to identify potential indicators of EJ populations in the vicinity of the project area, supplementing available demographic characteristics in understanding the affected community. These potential indicators could include:

- Grocery stores specializing in ethnic cuisine and associated provisions
- Retail stores specializing in ethnic goods and services
- Places of worship serving ethnic groups or providing minority language services
- Identifiable public and elderly housing facilities
- Local government agencies serving special minority or low-income needs
- Local non-governmental minority or low-income advocacy organizations
- Use of non-English language on local signs and advertising
- Local newspapers or newsletters or radio stations

Identifying and understanding the presence and importance of these indicators will provide context to the demographic data previously collected and lead to better understanding potential effects on EJ populations.

2.2.3 Coordination with Knowledgeable Parties

Each PennDOT District has an EJ Coordinator who is an available resource for EJ issues. Coordination with the EJ Coordinator or other knowledgeable parties can be performed to assist in the identification of EJ populations and further supplement available demographic characteristics and field observations in understanding the characteristics of potential EJ populations. These knowledgeable parties may be able to provide additional understanding or contextual information that may be especially important in characterizing EJ populations. Knowledgeable parties could include:

- PennDOT District EJ Coordinators
- Local MPO/RPO representatives
- County planning agencies
- Local governments
- School district administrators
- Chambers of Commerce or other local business or industry associations

Decision Point:

◇ *Are EJ populations present?*

If the answer is yes, EJ populations are present, continue to the next step.

If the answer is no, confirm your findings in the NEPA document and place data and information collected in the project's Technical Support Data files (Sections [2.2](#) and [2.6](#)). No further EJ analysis is required.

2.3 DETERMINE IMPACTS ON EJ POPULATIONS

To meet the intent of EO 12898, adverse and disproportionate impacts of proposed projects must be determined if EJ populations are present and impacted. The analysis of adverse effects must include the totality of significant individual or cumulative natural, social, community or human health effects. This analysis must consider the community context that may be impacted by the project. Some effects may be considered as beneficial by a portion of the community, while others may consider the same effect to be adverse.

Many transportation projects involve both adverse effects (such as short-term construction impacts or displacement of residential or business properties) and positive benefits such as

improvement in air quality or expanded connectivity. Whether adverse effects will be disproportionately high is dependent on the net impact on the community recognizing the totality of effects upon the community. Engagement of EJ populations is a crucial step in properly identifying and analyzing what is important to them as individuals and as a community, and then analyzing overall project effects to those important factors.

The analysis of impacts on EJ populations should identify and discuss both direct impacts and indirect/cumulative effects that would result. Direct impacts are those which are readily identifiable as caused by the proposed project, and are typically evident as an effect of project construction and operation. If the project was planned to meet the needs of an EJ community, that should be evident throughout the NEPA document. Examples of potential direct impacts could include residential or commercial displacements, changes in transportation access, effects on community aesthetics, and changes in community noise levels.

Indirect effects are those which may be caused or influenced by the project but occur later in time or farther removed in distance, but are still reasonably foreseeable. Often, indirect effects are related to changes in the patterns of land use, population density, or growth, which are generated by the changed community context associated with a proposed project – in this case the proposed transportation system. Indirect effects associated with transportation projects may be related to community cohesion, changes in land use, and changes in economic development potential, as influenced by improved transportation connectivity or access. Similar effects to EJ populations and communities could occur as a result of the aggregate cumulative impacts from foreseeable future actions in the community.

Decision Point:

◇ *Are EJ populations impacted?*

If the answer is yes, EJ populations would be impacted, continue to the next step.

If the answer is no, confirm your findings in the NEPA document and place data and information collected in the project's Technical Support Data files (Sections [2.3](#) and [2.6](#)). No further EJ analysis is required.

2.4 DETERMINE DISPROPORTIONATE HIGH AND ADVERSE EFFECTS

In evaluating potential disproportionate impacts on EJ communities, the relative distribution of adverse impacts between EJ and non-EJ populations is of importance. Disproportionality analysis must determine if:

1. the adverse direct, indirect and cumulative effects are predominately borne by EJ populations and/or

2. if the effects borne by EJ populations are appreciably more severe or greater than those effects borne by non-EJ populations.

The issue of disproportionality relies on the results of an analysis for a proposed project. In addressing the question of disproportionality, the following questions should be considered.

2.4.1 Does a high or substantial impact exist which adversely affects an EJ population?

In order to determine if there are disproportionately high and adverse effects on EJ populations, you will have to take into consideration the context of the community and the comparative impacts in non-EJ areas. Does the project impact a resource that is especially important to an EJ population? Does a potentially impacted property serve an especially important social, religious or cultural function for the EJ community? For example, is a park which is used regularly for cultural festivals being impacted by the project? Would the project require substantial displacements within the community?

2.4.2 Do effects on EJ populations exceed those borne by non-EJ populations (including indirect and cumulative effects)?

This question focuses on the distributional characteristics of project impacts and the unique context of the population. For example, are more minority or low-income people impacted than non-minority or non-low-income people? Is the percentage of minority or low-income people impacted greater than the percentage of non-minority or non-low-income people in the project study area? In other words, will the EJ population carry an unfair share of the impact? To address this question, impact analysis should address the relative distribution of impacts versus the distribution of EJ/non-EJ populations within the project study area. Does the EJ community bear a greater portion of a certain impact than non-EJ areas? For example, if ten (10) EJ residences and ten (10) non-EJ residences will each experience noise levels above the Federal standard, but noise at the EJ residences will increase by 20 decibels and noise at the non-EJ residences will increase by 10 decibels, there may be a disproportionate impact. This question should also consider project benefits. For example, will EJ communities receive the same potential benefits (e.g., improved access to employment opportunities, streetscape improvements, and safety benefits) as non-EJ populations?

2.4.3 Are there off-setting benefits to EJ populations?

In answering this question, the relative consideration of adverse effects versus benefits to the community should be evaluated. Does the transportation improvement and associated benefits (e.g., improved access, safety, air quality, etc.) balance or outweigh the adverse effects (e.g., displacements, construction business disruption, noise effects) borne by the EJ population? Effective public outreach is a key to properly addressing this question.

2.4.4 Will mitigation and enhancement measures be undertaken?

If there are adverse and disproportionate effects identified which cannot be offset by project benefits, are there measures which could be taken to minimize those effects? Measures could involve special considerations such as pedestrian access for EJ populations to community activity centers, employment/shopping areas, or special signing or alternative access to reduce construction stage impacts on EJ businesses. Mitigation should be developed in cooperation with the populations and relevant to (and commensurate with) the identified or anticipated impacts.

Decision Point:

◇ *Are impacts adverse **and** disproportionate?*

If the answer is yes, impacts to EJ populations may be adverse and disproportionate, continue to the next step.

If the answer is no, confirm your findings in the NEPA document and place data and information collected in the project's Technical Support Data files (Sections [2.4](#) and [2.6](#)). No further EJ analysis is required.

2.5 EVALUATE MITIGATION

If unique burdens are identified, the EJ analysis should seek to minimize or eliminate burdens through design modifications or implementation of mitigation measures. Mitigation measures for EJ must consider the context and needs of the community which would bear the effects. Often, the concern for EJ communities goes beyond the physical design of an improvement to the resultant socioeconomic impacts. Economic and safety concerns may be especially relevant areas of concern for EJ communities. Mitigation measures, if determined to be necessary, should be developed in concert with the affected community. Potential mitigation measures could involve:

- Enhanced community interaction and education during construction phase to reduce adverse effects of access restrictions, traffic detours, closings, etc.
- Adjusted construction phasing to reduce impact on community events/facilities
- Noise reduction measures (walls, embankments, etc.)
- Landscaping for aesthetic and environmental benefits
- Visual screening
- Improved lighting
- Improved pedestrian network (sidewalk extensions, crosswalks, etc.)

- Multi-modal transit amenities (bus shelters, bicycle/pedestrian facilities)
- Rehabilitation of community amenities impacted by the undertaking (e.g. park or recreation center)
- Relocation opportunities within community

In assessing the practicability of mitigation measures, the social and environmental effects, including costs, of implementing measures must be taken into account.

Decision Point:

◇ *Is mitigation practicable?*

If the answer is yes, go back to the previous step and reevaluate the disproportionality of the high and adverse impacts assuming the proposed mitigation measures are in place. If, when considering the mitigation measures the impacts are no longer disproportionately high and adverse, confirm your findings in the NEPA document and place data and information collected in the project’s Technical Support Data files (Sections [2.4](#) and [2.6](#)).

If the answer is no and mitigation (or additional mitigation) is not practicable, confirm your findings in the NEPA document and place data and information collected in the project’s Technical Support Data files (Sections [2.5](#) and [2.6](#)). If the results of the analysis determine that high adverse and disproportionate impacts to EJ populations would occur with implementation of the project, consultation with PennDOT Central Office EPDS personnel is required prior to the completion of draft NEPA compliance and documentation.

2.6 DOCUMENT EJ ANALYSIS, OUTREACH AND FINDINGS

EJ should be considered and addressed in NEPA decision-making and appropriately documented in Environmental Impact Statements (EIS), Environmental Assessments (EA), Environmental Evaluation Reports (EER), or CEs/EDs. The project level EJ framework outlined above applies to all projects regardless of the NEPA class of action, with the exception of certain Level 1a CEs/EDs and those projects that meet the exemption stipulations and project criteria as noted in Figure 2. As with any issue evaluated as a part of the NEPA process, the extent of analysis and documentation will be dependent on the nature of the project and its potential impacts.

For projects, regardless of class of action, where EJ analysis has been performed and it has been determined that either: 1) there are no minority or low-income populations present in the project area or if present, 2) there are no disproportionately high and adverse effects to minority and low-income populations, the following finding statement should be included in the NEPA document: **“No known minority or low-income populations have been identified that would be disproportionately highly and adversely affected by this project as determined above.**

Therefore, this project has met the provisions of Executive Order 12898.” This statement should be incorporated as appropriate into the CE/ED determination, EA/Finding of No Significant Impact (FONSI) or an EIS/Record of Decision (ROD).

Project level EJ analysis and documentation begins during project scoping. All projects, with a few minor exceptions for some CE/ED actions, are required to perform project scoping and to document the results via a Scoping Document in the CE Expert System. If EJ populations are not present in the vicinity of a project, this should be documented in the appropriate section of the Scoping Document and your EJ analysis is considered to be complete for the scoping phase. If EJ populations are present this should be documented in the appropriate section of the Scoping Document and additional analysis should be performed to determine if there is potential for disproportionately high and adverse effects to EJ populations. Additionally, if EJ populations are present, any public involvement and outreach with/to EJ populations, either previously performed or to be performed, should be documented in the appropriate section of the Scoping Document.

Please note that changes in demographics can occur over time and consideration should be given to the length of time between planning, scoping and NEPA document preparation. Consult with planning partners and/or other knowledgeable parties to determine if conditions are likely to have changed in a specific area.

For Level 1b and 2 CE/ED actions, any known effects on EJ populations and whether these effects are disproportionately high and adverse should be documented along with any mitigation measures and any public involvement efforts associated with EJ populations within the CE Expert System. With regard to CE/ED Level 1a actions, these actions coincide with the listing of categorically excluded projects outlined in 23 CFR 771.117 (c) and typically require minimal environmental analysis and documentation in the CE Expert System unless there are some known circumstances that indicate potential environmental effects. Any known effects on EJ populations associated with CE/ED Level 1a actions and whether these effects are disproportionately high and adverse should be documented, along with any mitigation measures and public involvement efforts and the appropriate pages should be marked for inclusion within the CE Expert System. Copies of pertinent EJ information, data, analyses, and outreach activities should be placed in the project's Technical Support Data files. Mitigation measures related to EJ populations, if any, should be documented and tracked through PennDOT's Environmental Commitments and Mitigation Tracking System (ECMTS).

For EA projects, any known effects on EJ populations and whether these effects are disproportionately high and adverse should be documented, along with any mitigation measures, in the appropriate sections of the NEPA document. Public involvement efforts associated with EJ populations should be documented in the appropriate sections of the NEPA document. A

finding statement should be incorporated into the FONSI. Copies of pertinent EJ information, data, analyses, and outreach activities should be placed in the project's Technical Support Data files. Mitigation measures related to EJ populations, if any, should be documented and tracked through PennDOT's ECMTS.

For EIS projects, any known effects on EJ populations and whether these effects are disproportionately high and adverse should be documented, along with any mitigation measures, in the appropriate sections of the EIS. Public involvement efforts associated with EJ populations should be documented in the appropriate sections of the EIS. A finding statement should be incorporated into the ROD. Copies of pertinent EJ information, such as data, analyses, agency coordination (e.g. EPA), and public outreach activities should be placed in the project's Technical Support Data files. Mitigation measures related to EJ populations, if any, should be documented and tracked through PennDOT's ECMTS.

2.7 PUBLIC OUTREACH IN SUPPORT OF PROJECT LEVEL EJ ANALYSIS

A primary goal of EJ is to engage those groups traditionally underrepresented in the project development process. Effective public engagement strategies for EJ populations must strive to eliminate barriers for full and active participation. If an EJ population is identified and is likely to be impacted by the proposed project, public outreach aimed at effectively engaging EJ populations should be developed, implemented and integrated into the Public Involvement plan for the project. Effective public outreach entails providing minority and low-income populations greater access to information and opportunities for public participation in matters that may impact human health and the environment. Effective outreach to EJ populations may require the use of innovative or nontraditional approaches and strategies beyond traditional tools such as public meetings, open houses and newsletters or project websites to overcome linguistic, institutional, cultural, economic, historical or other potential barriers to effective participation in the decision-making process.

Outreach strategies for engaging EJ communities should consider access, timing, location, language, literacy, and availability of technology. EJ populations may feel hesitant to participate in large public gatherings at a government facility, but would be more receptive to small group or individual discussions in community centers, places of worship, or individual homes. Available time periods for outreach to EJ populations may be limited by employment shifts, child care needs, or public transit schedules. Alternative language and/or oral communications may need to be prioritized over the use of traditional written information. Use of radio announcements may be more effective for advertisement of outreach events than television, print or internet communications.

Public participation under NEPA involves two-way communications, with PennDOT receiving information, comments, and advice, as well as disseminating information on possible

approaches, analyses, and decisions. This is particularly important when there are potential EJ issues involved. A good strategy involves a diverse array of techniques for conveying public information to reflect the variety of ways people access information. Some possible examples for public information materials are listed below:

- advertisements
- badges and buttons
- billboards
- brochures
- church bulletins
- community newsletters
- display boards
- ethnic specific media
- fact sheets
- fast food placemats
- fliers
- grocery bags
- placards
- magnets
- newsletters
- newspaper inserts and articles
- notices
- posters
- press releases
- radio announcements
- school handouts
- utility bill stuffers
- websites
- social media
- transit vehicle placards

While LEP populations are not always EJ populations, this indicator is highly correlated with minority populations. If the demographic analysis reveals minority or low-income populations that do not speak English well or at all, public involvement materials should be prepared in both English and in the language(s) spoken by the communities being addressed.

While not all members of EJ populations have convenient access to a computer, researchers have identified high rates of mobile phone and smartphone use amongst EJ populations. Thus, the use of “blast” public engagement information via text messages can be an effective way to reach your target audience.

Social media (e.g., YouTube, Twitter, and Facebook) can also be an effective tool for creating a forum for public dialogue. Social media can be accessed on mobile devices, as well as on laptops, desktops, and some video game consoles and televisions. This level of accessibility makes social media ideal for broadcasting information and questions, and generating comments, virtual conversations, increased visibility, and excitement. Consider recording in audio and visual formats presentations about your transportation plan or project and posting the digital file not only on your website but on YouTube, iTunes, and other outlets.

To announce meetings, distributing flyers or meeting notices through the appropriate neighborhood shops, religious facilities, social service agencies, public health clinics, food banks, homeless shelters, community centers or organizations may be a better approach than a

notice in the newspaper. Announcements on ethnic radio stations or neighborhood newsletters should also be considered.

Flyers or postcards are likely to get more attention than standard notices on letterhead. These can be sent to residences and posted in public places and popular gathering places to reach target audiences. Care should be exercised that the written content uses a tone familiar within the community. It may be helpful to have local community leaders review printed materials in advance to see if they feel the approach used will be effective.

Low-income people may be limited in their ability to attend meetings by a lack of transportation. Holding meetings at locations near public transportation routes can potentially increase attendance. Meetings could possibly be combined with regularly scheduled meetings of community, neighborhood or school organizations, or conducted at places where the target population frequently goes. “Road show” presentations at some venues can supplement formal meetings. Some of the options include the following venues:

- religious organizations
- homeowners’ or tenants’ meetings
- senior centers
- local schools
- business associations
- county fairs
- school meetings
- recreation centers
- fraternal orders
- labor union meetings
- sporting events
- street fairs, art fairs
- transit stops
- grocery stores/farmer’s markets
- barber shops, beauty salons, and other personal service establishments
- shopping malls (kiosks)

Common barriers to public involvement among EJ populations and potential solutions are listed in *Every Voice Counts* (see Table 12 of the *Every Voice Counts* document). Remember to be respectful of cultural and/or ethnic differences of EJ communities and be sensitive to the fact that certain communities may not want to be identified as EJ populations due to negative connotations with this term.

In addition to the strategies offered in this section, Publication 295, PennDOT’s *Public Involvement Handbook*, guides the public involvement process for projects. As in any public outreach effort, there may be times where there is no response or interest expressed. Always document each outreach effort and regularly seek new approaches. Do not stop reaching out.

2.8 PROJECT EXAMPLES

Appendix B provides details and strategies employed for EJ analysis associated with several past projects. Analysts are encouraged to incorporate the experience gained from these efforts, as appropriate, when developing EJ analysis for a particular project. Coordination with the District

EJ Coordinator and Central Office personnel on the development of EJ analysis and outreach strategies is also suggested to ensure compliance with EO 12898. Early consultation with the EPA should be initiated for more complex EA and EIS projects that potentially involve substantial EJ considerations.

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APPENDICES

APPENDIX A: EJSCREEN Process

EJSCREEN uses EJ Indexes to identify EJ communities. These indexes combine environmental and demographic indicators to show which block groups are more likely to contain EJ populations.

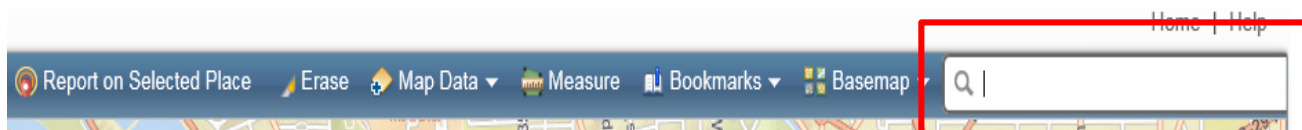
The EPA EJSCREEN Tool is available at <http://ejscreen.epa.gov/mapper/>.

For project level screening, only the demographic indicators Percent Minority and Percent Low Income need to be reviewed.

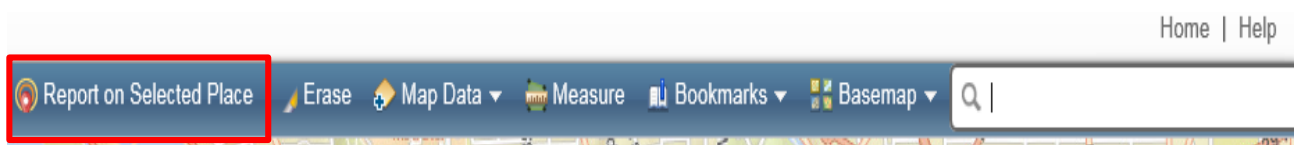
An additional feature of EJSCREEN is the ability to input layers from a web service, as is available through PennSHARE.

The following steps provide a basic process for obtaining detailed data for Demographic Indicators using USEPA's online EJSCREEN tool:

Step 1: Enter address or place in the **Find an address or place** text box. This can be a street address, a town, a ZIP code, X Y Coordinates, or other location.

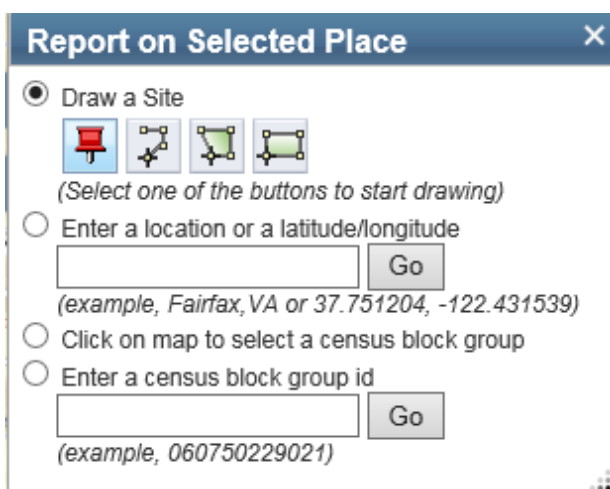


Step 2: Use the **Report of Selected Place** widget to identify a specific location and generate



demographic reports for that location.

With this tool you can draw a site; enter a location or latitude/longitude; click on the map to select a census block group; or enter a census block group id.



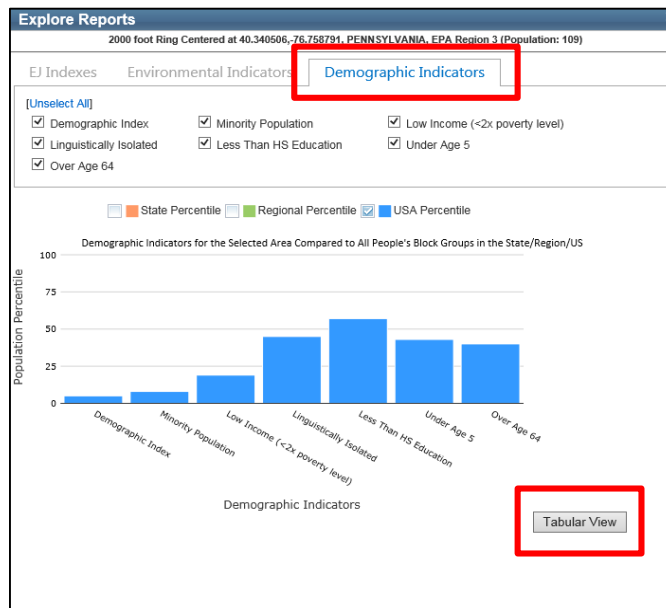
Step 3: From the pop-up window, enter a name, select the unit of measurement for the buffer, the buffer distance, and then select **Add to Map**.



Note on buffer: when using the geographic point, a buffer is applied as a ring around the point. The ring will aggregate appropriate portions of the intersecting block groups, weighted by population, to create a representative set of data for the entire ring area, honoring variation and dispersion of the population in the block groups within it.

Step 4: Use **Explore Reports** to look at the EJ Indexes, Environmental Indicators, and Demographic indicators. For a project level analysis, select **The Demographic Indicators** tab and then the **Tabular View** button. Click the Category column to bring the Demographic rows to the top. The first data column titled **Raw Data** provides percentages of the Demographic variables. Focus on rows 26 and 27, minority population and low income population, as these are the two criteria for an EJ population.

Note: The bar graph reports percentiles, not percentages. To get percentages, you must look at the Raw Data column found in the table.



Tabular View

1 mile Ring Centered at 40.273831,-76.884762, PENNSYLVANIA, EPA Region 3 (Population: 18122)

*The National-scale Air Toxics Assessment (NATA) environmental indicators and EJ indexes will be added into EJSCREEN during the first full public update after the soon-to-be-released 2011 dataset is made available.

#	▲ Category	Selected Variables	Raw Data	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
25	Demographic	Demographic Index	58%	25%	89	29%	88	35%	80
26	Demographic	Minority Population	65%	21%	89	30%	83	36%	77
27	Demographic	Low Income Population	51%	30%	84	28%	86	34%	78
1	EJ Index	EJ Index for Particulate Matter (PM 2.5)			89		86		78
2	EJ Index	EJ Index for Ozone			88		83		75
3	EJ Index	EJ Index for NATA Diesel PM*			N/A		N/A		N/A
4	EJ Index	EJ Index for NATA Air Toxics Cancer Risk*			N/A		N/A		N/A
5	EJ Index	EJ Index for NATA Neurological Hazard Index*			N/A		N/A		N/A
6	EJ Index	EJ Index for NATA Respiratory			N/A		N/A		N/A

Step 5: Use the three census reports available for a more detailed analysis: 2008-2012 ACS Report, 2010 Census report, and 2000 Census report.



The 2008-2012 ACS (American Community Survey) report provides minority population, percent minority, and income. *Note: Income in the ACS report is based on income levels reported in 1999.*

The 2010 and 2000 Census report provides minority population and percent minority. The Census reports are based off the Summary File 1.

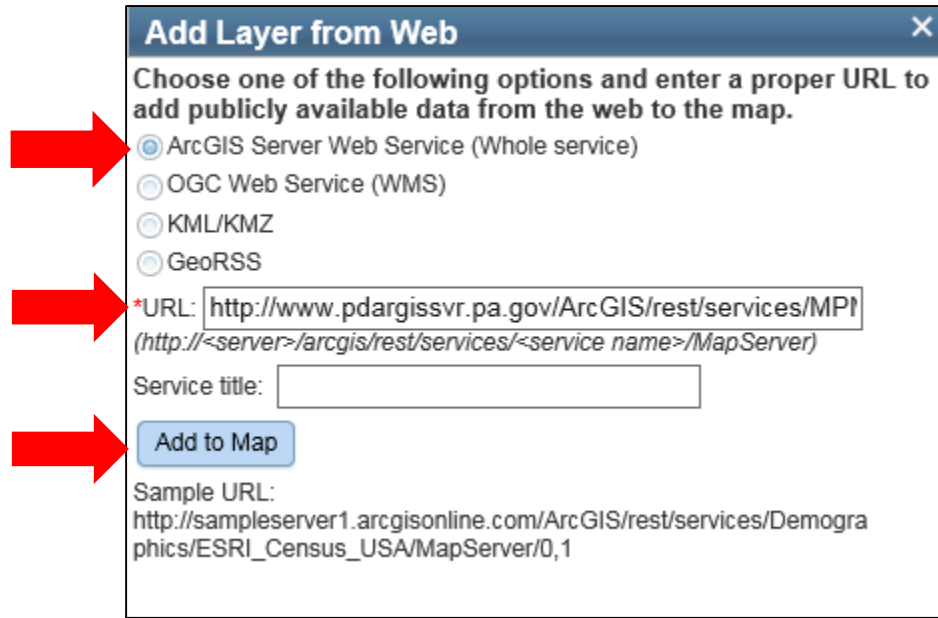
The numbers between the ACS and Census may vary slightly due to rounding errors.

Step 7: Inputting Projects from PennShare.

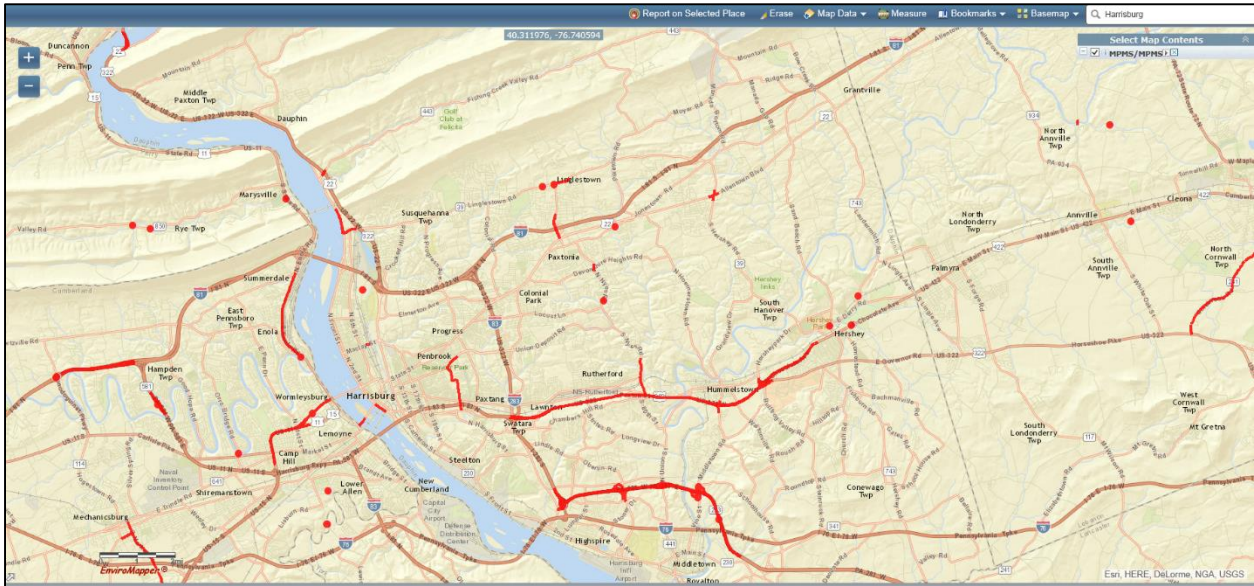
- a) Go to <http://www.pdargissvr.pa.gov/ArcGIS/rest/services/MPMS/MPMS/MapServer>
- b) Under TIP select In Development (29), copy the URL.
it is important to select In Development (29), otherwise both In Development (30) and In Development (31) will need to be added
- c) In EJSCREEN, click **Map Data**, then **Add Layer from Web**.



- d) Paste the copied URL into the *URL slot, making sure ArcGIS Server Web Service (Whole service) is checked, and click **Add to Map**.



- e) This layers all PennDOT TIP projects in development into the EJSCREEN system.
Note: added layers are not factored into any of the calculations EJSCREEN conducts.



EJSCREEN should only be used as a screening tool. All projects should also be field verified.

Detailed instructions for the U.S. Environmental Protection Agency's on-line EJSCREEN toll can be found at <http://www2.epa.gov/ejscreen/learn-use-ejscreen>.

APPENDIX B: Case Studies

ENVIRONMENTAL JUSTICE CASE STUDY #1

Juniata River Bridge Replacement Project

S.R. 0035, Sections A02 and Z05, and S.R. 3002, Section N19

**Mifflin and Mifflintown Boroughs; Fermanagh, Milford and Walker Townships,
Juniata County, Pennsylvania**

Project Overview

This project involved the replacement of two bridges; one that spanned the Juniata River between the Boroughs of Mifflin and Mifflintown (Section A02) and another that spanned the Norfolk Southern Railroad in Mifflin Borough (Section Z05) in Juniata County. The project also involved improvements to the roadway approaches to correct the existing deficiencies. The existing Juniata River Bridge connected Mifflin Borough to Mifflintown Borough and served as the only local access between the two communities and the surrounding townships. The railroad bridge over the Norfolk-Southern rail lines was to the west of the river bridge, and it was the only vehicular connection between the two parts of Mifflin Borough. In addition to vehicular traffic, both bridges, in particular the river bridge, served a substantial and steady volume of pedestrian traffic. Bicycle traffic and occasional horse and buggy traffic also used the bridges to travel to and through the boroughs.

Purpose and Need

The project needs were based on the existing bridges' structural deficiencies and functionally obsolete characteristics in addition to the difficult geometrics of the connecting roadway. The project purpose was to replace the functionally obsolete and structurally deficient bridges with structures that meet current design criteria and to accommodate pedestrian access between Mifflin and Mifflintown and large truck traffic accessing local industries.

Alternatives

A variety of alternatives were developed and evaluated for replacing the S.R. 0035 bridge, which crossed over the Juniata River between the Boroughs of Mifflin and Mifflintown at the north end of the boroughs, on alignment and at new locations. Ultimately, a location for the proposed new bridge was identified that was approximately ¼ mile south of the existing bridge at the south end of the two boroughs and the existing bridge was proposed for demolition.

Environmental Justice Analysis

Determine the Presence of an EJ Population in the Project Area

Census data (2000) were obtained at the census tract and block group level for the entire study area. In order to determine the presence of low income populations, census data were consulted for both persons below the poverty level and households receiving public assistance. Additional

data were collected for minority populations, Hispanic populations, persons who are Spanish speaking and persons who self-identify as black or African American.

Census data obtained did not separate Mifflin Borough from Census Tract 9702, Block Group 1 within Milford Township; therefore, for the purpose of this study, Mifflin Borough was viewed at the municipal level separate from Milford Township.

Review of 2000 Census data pertaining to the project's study area found several populations that are 5% above the state average of low income populations, Hispanic persons as well as Spanish speaking populations.

- Within Tract 9702, Block Group 1, Mifflin Borough had 104 persons (16.6%) living below the poverty level which was the highest percentage in the study area. This was higher than the Pennsylvania state level (10.6%) and the Juniata County level (9.2%). Also, Mifflin Borough had 41 persons (6.5%) that speak Spanish and this was higher than Pennsylvania (2.9%) and Juniata County (1.5%).
- Tract 9701, Block Group 5 which was the geographic area of Mifflintown Borough had a Hispanic population of 75 persons (8.7%) which was higher than Pennsylvania (3.2%) and Juniata County (1.6%). There were 67 Spanish speaking persons in Mifflintown (7.8%), while both Pennsylvania (2.9%) and Juniata County (1.5%) had fewer. .

The remaining block groups within the project area had minority, Hispanic, Spanish speaking populations and low income populations, but none were greater than 5% above the County or Pennsylvania population levels.

The presence of a relatively large Latino population within the project area residing on both sides of the Juniata River in both Mifflin and Mifflintown Boroughs was verified through field views and discussions with local stakeholders. It was also noted that many Latinos work at the Empire Kosher Poultry plant located in Walker Township just south of Mifflintown Borough. Local representatives of the Latino community indicated that walking was a common mode of travel for members of their community and that maintaining a link between the commercial and residential communities on both sides of the river was important to them.

Environmental Justice Outreach

The project team incorporated the following public outreach tools and strategies into the project's public involvement program to provide meaningful opportunities to engage for Environmental Justice populations:

- Initial outreach to the Latino community included enlisting a member of the local Latino community to translate public involvement documents into Spanish and to provide translations at public meetings.

- Leaders of the local Latino community were identified and the initial meeting with the leaders was held at the start of the project in the local Catholic church to receive information on the transportation needs of the Latino community and recommendations for involving the Latino community in the project development process.
- Follow-up coordination included several informal meetings at the local Latino community grocery/service store and operating a project booth at the Latino Festival sponsored by the local Catholic church.
- The public involvement activities conducted for the general public also incorporated special efforts to encourage the involvement of the Latino community. All public meetings included Spanish versions of the handouts and surveys and Spanish translators were present (Note: very few members of the Latino community attended the general public meetings. It is suspected that the legal status and/or short-term residency of community members may have been a factor in the low turnout. However, copies of the Spanish versions of the surveys and handouts were provided to the Latino community representatives to distribute to the community after each meeting). Spanish versions of the project newsletters and a project flyer were made available at community and business establishments within the study area.

Determine Presence of Disproportionately High and Adverse Effects

The Preferred Alternative would require three (3) residential displacements consisting of two (2) residential structures located in Mifflin Borough, within Tract 9702, Block Group 1. The displacements would be managed in full compliance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Act and Title VI of the Civil Rights Act. It was determined that the project would not have a disproportionately high and adverse effect on low income or minority populations.

However, while not identified as an Environmental Justice impact, adverse impacts to community cohesion were identified. The river crossing of the proposed new bridge would be 1,300 feet (west side) to 1,900 feet (east side) south of the existing bridge, which would be demolished. The existing distance between the town centers (using Juniata Street/Main Street intersection in Mifflin, just west of existing bridge, and the Main Street/Bridge Street intersection in Mifflintown, just east of existing bridge) was approximately 1,200 feet (less than ¼ mile) by way of the existing bridge. Using the new proposed river bridge, the distance between these two intersections would be increased to approximately 6,050 feet (over 1 mile). This would result in an adverse impact to the community cohesion between the town centers of Mifflin and Mifflintown. In particular, it would isolate the area known as Mifflin Flats from the commercial and community amenities of Mifflintown. The only access to Mifflin Flats from the east would be the new connector road connecting the southern end of Juniata Street to the new

vehicular bridge over the river. Public concern was expressed over the change in pedestrian travel patterns that would occur with the demolition of the existing bridge and how this would adversely affect community cohesion in the two boroughs that share many community services and facilities.

Determine Appropriate Mitigation

Since it was determined that the project would not result in disproportionately high and adverse effects on Environmental Justice populations, there was no mitigation related to Environmental Justice concerns.

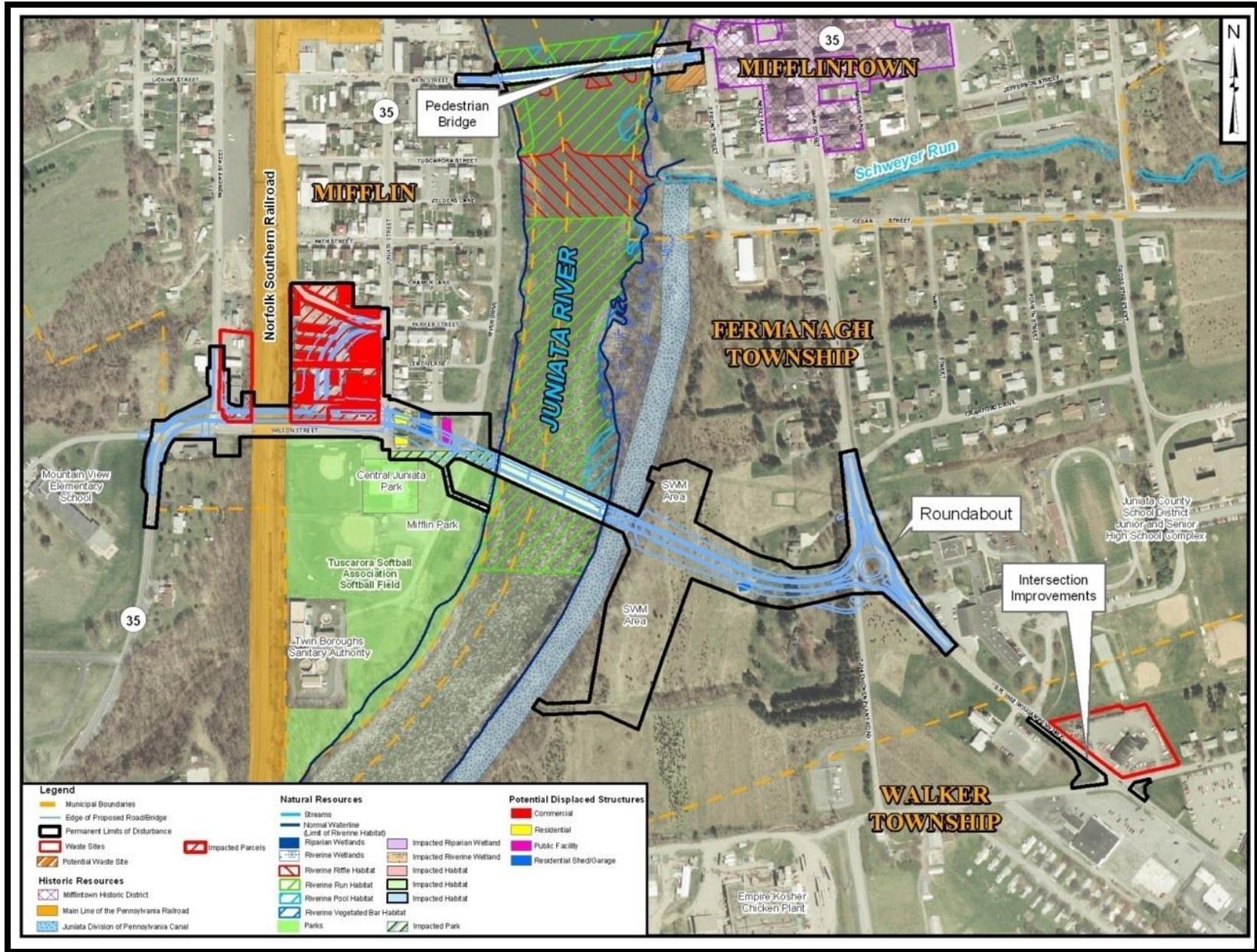
However, mitigation was proposed for the adverse impact on community cohesion. The construction of a pedestrian bridge at the site of the existing bridge was proposed. The new pedestrian bridge would maintain the pedestrian connectivity between the town centers of Mifflin and Mifflintown. A new pedestrian bridge at this location, in conjunction with the Preferred Alternative that also provides for pedestrian traffic, would enhance the overall pedestrian movements between the two communities.

Lessons Learned

- Project study area boundaries do not always coincide neatly with census geography boundaries. Practitioners may have to mix and match census geographies when identifying the presence of EJ populations within the study area.
- While review of demographic data helps to identify the presence of EJ populations, field views and discussions with local stakeholders can provide valuable insights that cannot be drawn from review of demographic data alone.
- Discussions with EJ community leaders at the outset of the project helped to shape the public involvement program to more meaningfully engage the EJ community.
- Be conscious of EJ community preferences when establishing meeting locations (churches, ethnic businesses, etc.).
- Despite careful planning and advertising of public meetings aimed at boosting EJ attendance and participation, realize that there may be other factors that result in poor attendance by EJ populations at public meetings. In this case it was surmised that the legal status and/or short-term residency of community members may have been a factor in the low turnout of EJ populations.
- Special purpose meetings held within the EJ community may draw better attendance and participation from EJ community than traditional public meetings.

- Enlisting EJ community representatives to serve on community advisory committees can be beneficial to gain the EJ community's trust and to receive valuable feedback from the EJ community.
- Meaningful engagement of EJ communities throughout the project development process helped lead to better decision-making for the project and the community as a whole.

Juniata River Bridge Replacement Project Map



ENVIRONMENTAL JUSTICE CASE STUDY #2
S.R. 0412, Section 001 Corridor Transportation Improvements Project
City of Bethlehem
Northampton County, Pennsylvania

Project Overview

This project involved the upgrading, widening, and modernizing of the S.R. 412 corridor from Interstate 78 (I-78) at the northern boundary of Hellertown Borough to the Hill-to-Hill Bridge in the South Bethlehem portion of the City of Bethlehem, Northampton County. The S.R. 412 corridor provides access to/from I-78, and serves as a major regional entry point to the Bethlehem area. The setting for the S.R. 412 corridor changes from more of a suburban setting between I-78 and the Minsi Trail Bridge, to more of a downtown, central business district and highly urban environment on Third Street between the Daly Avenue and the Hill-to-Hill Bridge in South Bethlehem.

South Bethlehem contains a variety of land uses including residential, commercial, institutional, and industrial. Commercial uses are concentrated along Third Street. A mix of commercial, residential and public/institutional uses (churches and schools) are found along Fourth Street, which lies south of and runs roughly parallel to Third Street. Prominent institutional and industrial uses in the vicinity of the corridor include Lehigh University and land formerly owned by the Bethlehem Steel Corporation.

A variety of planning and redevelopment efforts have been proposed to revitalize South Bethlehem. The City of Bethlehem prepared “South Side master plans” for portions of South Bethlehem. Two major redevelopment efforts were proposed for former Bethlehem Steel lands along the S.R. 412 corridor: Bethlehem Works and the Bethlehem Commerce Center. Bethlehem Works is a 163 acre site proposed to provide a mix of retail and entertainment uses including the Sands Casino Resort Bethlehem. The Bethlehem Commerce Center is proposed to accommodate a mix of office, warehouse, and industrial uses including an intermodal distribution center on approximately 1,627 acres.

The City of Bethlehem has a long history of ethnic diversity. The settlement of the city began in 1741, when a group of Moravians, a religious group with Eastern European origins, settled on the north side of the Lehigh River. Throughout the 18th and 19th centuries, the Moravians acquired land on the south side of the Lehigh River. In 1847, the Moravians relinquished their south side properties and the ensuing railroads, zinc works, and iron works brought rapid change to South Bethlehem. In 1860, the Bethlehem Iron Company (later the Bethlehem Steel Corporation) bought land in South Bethlehem to begin steel production for iron rails. The steel industry attracted many immigrants seeking employment. In 1910, two-thirds of the residents of South Bethlehem were foreign born. By 1927, an estimated 48 nationalities were represented,

including Russians, Poles, Ukrainians, Irish, Slovaks, Italians, Germans, and Portuguese. More recently, newcomers with Hispanic or Latino ethnic backgrounds, including many with Puerto Rican heritage, have settled in South Bethlehem.

Purpose and Need

A draft project purpose and needs statements were first generated by the Community Advisory Committee (CAC) established for the project. The project purpose and needs drafted by the CAC were discussed with area residents and interested citizens at public meetings. Based on the public input and several meetings with the CAC, the following purpose statement was generated: “The purpose of the S.R. 412 Corridor Project is to improve transportation safety and mobility, to compliment the planned economic development/redevelopment by reducing or relieving congestion, and to accommodate all modes of transportation while sustaining the quality of life in the corridor.” The process was also used to generate the following project needs statement:

1. Present and future congestion on S.R. 412 impedes mobility
2. High crash rates on S.R. 412 exceed statewide averages for facilities of this type
3. Inadequate access to regional and local employment and commercial centers
4. Inadequate pedestrian and bicycle accommodations along S.R. 412
5. Lack of consistency with regional and local planning
6. Insufficient intermodal connectivity between I-78, downtown South Bethlehem, and neighborhoods
7. Inadequate transit service and facilities based on existing and anticipated demand

Alternatives

A variety of transportation improvement strategies were initially developed and screened. Alternatives that were most responsive to the project purpose and needs were identified, further developed, and evaluated. The selected alternative will entail the widening of the southern portion of the S.R. 412 corridor from two (2) lanes to four (4) and five (5) lanes between I-78 and Daly Avenue, with most of the widening along the east side of S.R. 412. Appropriate shoulders will be provided to accommodate bicycle traffic and sidewalks for pedestrians. From Daly Avenue to the Hill-to-Hill Bridge, Transportation Systems Management (TSM) improvements will be made with no widening outside of the existing right-of-way, with the exception of a new ramp connecting Second Street with the Hill-to-Hill Bridge. TSM improvements will include the installation of a state-of-the-art computerized traffic signal system, new/upgraded traffic signals at approximately 20 intersections, signal retiming, emergency pre-emption, and traffic calming measures in the vicinity of the Elementary School on East Fourth Street. Pedestrian accommodations in this portion of the corridor will be improved to include pedestrian signal heads, ramps and crosswalks, countdown pedestrian signal heads, and a lighted crosswalk.

Based on community feedback, special features were added to the project to provide access to local properties in the southern section of the corridor in the general vicinity of I-78 and the Coke Works neighborhood. These features included a service road opposite of Commerce Center Boulevard, a mid-block access opening between Commerce Center Boulevard and I-78 and a jughandle at the I-78 westbound ramps.

Environmental Justice Analysis

Determine the Presence of an EJ Population in the Project Area

The potential presence of EJ populations within the project study area was first identified by PennDOT District 5-0 and Federal Highway Administration (FHWA) staff, who were familiar with the ethnic diversity of South Bethlehem's population, during the Engineering and Environmental Scoping Field View (SFV). U.S. Census data (2000) were obtained at the census tract level for the three tracts in South Bethlehem and one tract in Hellertown traversed by the study area in order to determine the presence of minority and low income populations.

Review of 2000 Census data found several populations that are substantially above the statewide, county and city averages for both Hispanic and low income persons:

- Tracts 112 and 113 within the City of Bethlehem had minority populations of 3,303 persons (61.2%) and 1,999 (62.9%), respectively. These percentages of minorities were substantially higher than the Pennsylvania state level (15.9%), the Northampton County level (11.8%), and the City of Bethlehem level (25.1%). The number of Hispanic persons within these two tracts of 2,766 persons (51.3%) and 1,711 persons (53.9%), respectively, were substantially higher than the Pennsylvania state level (3.2%), the Northampton County level (6.7%), and the City of Bethlehem level (18.2%). Furthermore, the number of persons of Puerto Rican descent within these two tracts of 2,301 persons (42.7%) and 1,431 persons (45.1%), respectively, were substantially higher than the Pennsylvania state level (1.9%), the Northampton County level (4.5%), and the City of Bethlehem level (14.2%).
- Tracts 110, 112 and 113 within the City of Bethlehem had low income populations of 1,341 (46.3%) 1,696 persons (31.7%) and 910 (28.7%), respectively. These percentages of low-income populations were substantially higher than the Pennsylvania state level (11.0%), the Northampton County level (7.9%), and the City of Bethlehem level (15.0%).
- Census tract 179.01 within Hellertown Borough had small percentages of minority and low income populations well below the state and county levels.

The presence of EJ populations within the project area was further verified through field views and discussions with local stakeholders.

Environmental Justice Outreach

Following the initial public meeting introducing the project, which was held one week after the SFV, the project team incorporated public outreach tools and strategies into the project's public involvement program to provide meaningful opportunities to engage EJ populations as follows:

- The CAC developed for the project was expanded to include South Side residents, including Latino representatives.
- Latino CAC members offered to proofread public involvement documents translated into Spanish.
- The public involvement activities conducted for the general public also incorporated special efforts to encourage the involvement of the Latino community.
- Project newsletters and flyers announcing public meetings were translated into Spanish and distributed to Latino CAC members, two local Spanish newspapers and local neighborhood organizations, businesses, clubs, and churches.
- Public meeting advertisements were translated into Spanish and placed in a Spanish newspaper.
- Meeting handouts were translated into Spanish.
- Spanish-speaking interpreter provided for public meetings.

Even with these outreach efforts, very few members of the Latino community attended the public meetings, perhaps due to venues used that included a middle school and a hotel function room. The Latino community invited the project team to present information about the project at the Puerto Rican Beneficial Society Club in downtown South Bethlehem. The Latino community advertised the meeting themselves. The meeting was well attended with over 40 people. The Mayor of Bethlehem was in attendance. Meeting materials were provided in Spanish and an interpreter was used. There was good interaction during the question and answer session after the formal presentation. Following the question and answer session the project team and the mayor were invited to stay and have food and drink provided by the Latino community. The project team along with the mayor accepted the hospitality. Following the meeting, the Latino leaders provided positive feedback and indicated that it was culturally important to the Latino community that the mayor and project team stayed to socialize.

Determine Disproportionately High and Adverse Effects

The project would require partial takes on 31 properties and total takes on 14 properties. Most of the sliver takes would occur along the segment to be widened between I-78 and the Minsi Trail Bridge on lands formerly owned by Bethlehem Steel and its subsidiary, the PB&NE Railroad. Twelve of the 14 total takes would take place within a two-block area on the east side of S.R. 412, immediately south of Coke Works Road in South Bethlehem in Tract 113. These 12 takes would include ten (10) residential properties, one (1) vacant commercial building, and one

(1) mixed use property (restaurant and residential). A total of about 20 residential units would be displaced. The 20 residential displacements (four owner and 16 tenant occupied units) were located in an older, established neighborhood bordered by Coke Works Road and Yale Avenue. The neighborhood was historically populated by persons of Portuguese and European decent, but today contains a mixture of ethnicities. The remaining two (2) takes would occur in the northwest quadrant of the S.R. 412/Broadhead Avenue/Riverside Drive intersection where two (2) commercial properties would be acquired to accommodate a proposed right turn lane for traffic to access the proposed relocated ramp to the Hill-to-Hill Bridge.

Since minority and low-income populations would be impacted in the Coke Works neighborhood, further analyses of these impacts were performed. The displacements to occur in this neighborhood would be from the proposed widening on the east side of the roadway. What if the widening occurred on the west side? What were the population characteristics on the west side where widening was not proposed versus the east side? The properties on the west side of S.R. 412 were of similar stock and vintage of the properties to be displaced on the east side based on field reconnaissance. Census data was further analyzed at the census block level for the blocks on both the east and west sides of S.R. 412 in the immediate vicinity of the Coke Works neighborhood. The analysis focused on the percentage of Hispanic populations present on both sides of the roadway as poverty data was not available at the block level. The analysis of the census block level data revealed that the percentage of Hispanic populations was similar on both the east and west sides with 38.3% on the east side and 39.0% on the west side. Thus the EJ populations present on the east side were not to be impacted at the expense of non-EJ populations. Furthermore, when breaking down the City of Bethlehem's population and looking at just South Bethlehem, 37.9% of persons are Hispanic, which is nearly identical to the percentage of potentially displaced Hispanic persons (38.3%) in the Coke Works neighborhood. The displacements would be managed in full compliance with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Act and Title VI of the Civil Rights Act. It was determined that the project would not result in disproportionately high and adverse effects on minority or low income populations.

While not identified as an EJ impact, both beneficial and adverse impacts to community cohesion were identified. On the positive side, the provision of TSM improvements, which include upgrading pedestrian accommodations, in the downtown portion of the corridor, would have positive effects. Pedestrian activity is an important component of the downtown South Bethlehem quality of life. Enhancements to the pedestrian system are viewed as enhancements to the quality of life. The provision of sidewalks on both sides of the roadway and widened shoulders for bicyclists, from Fourth Street to I-78 would improve pedestrian/bicycle connectivity between the downtown and the majority of the residential neighborhoods to Saucon Park, proposed Bethlehem Commerce Center, and Hellertown. The proposed boulevard/gateway concept for this portion of the corridor would also provide a more positive image for the

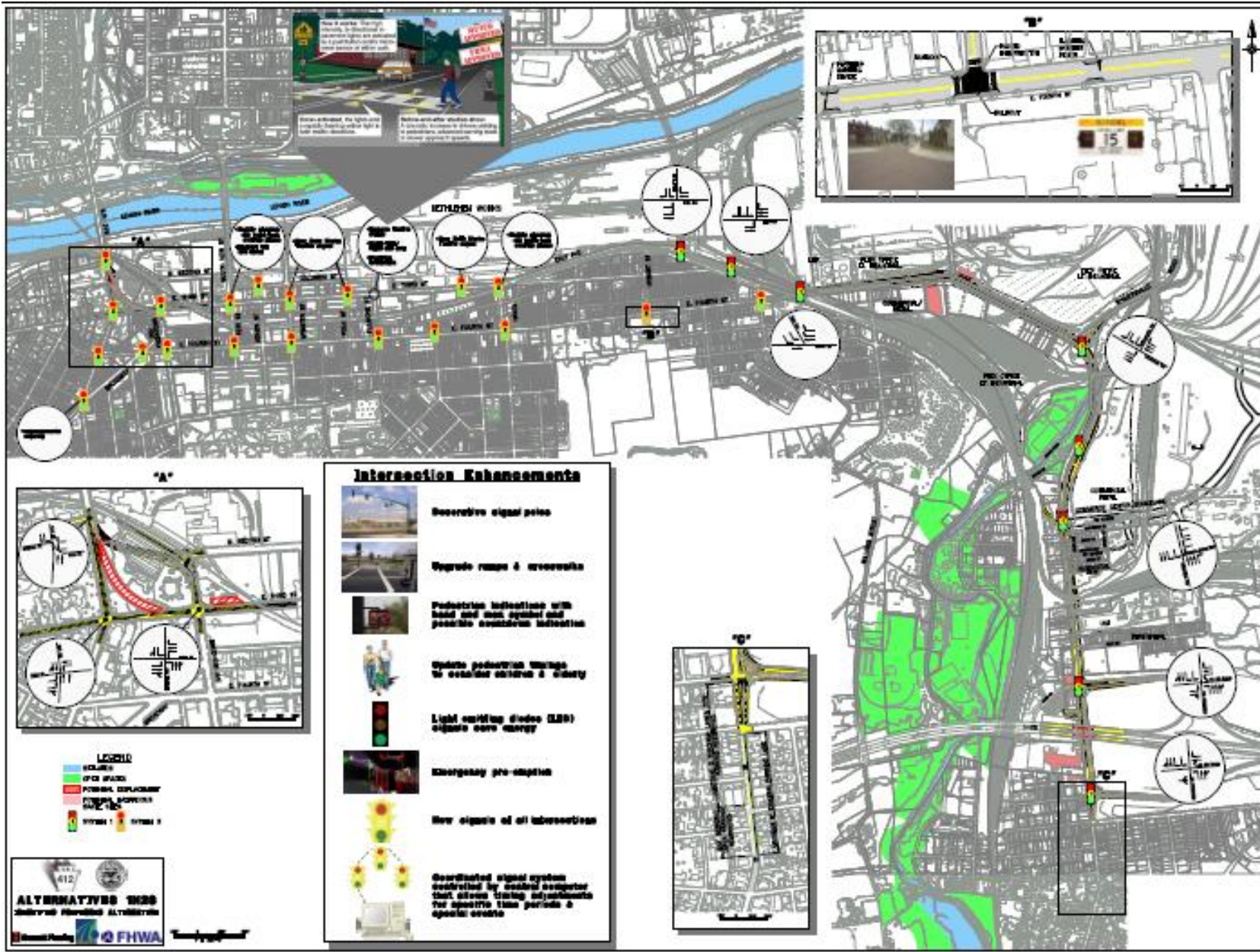
community. Indirectly, the proposed transportation improvements would help facilitate the redevelopment of former Bethlehem Steel lands and contribute to the creation of an estimated 10,000 jobs within the Bethlehem Works and Bethlehem Commerce Center redevelopment projects, leading to employment opportunities for South Bethlehem residents and generating an estimated 70 million dollars annually in direct revenues to local governments, schools, and the Commonwealth. On the negative side, the project would result in the displacement of 20 residential units and four (4) commercial properties. Most of the displacements would take place in the Coke Works neighborhood. The displacement of 20 of the 50 or so residential units would have a negative effect on the neighborhood. In this case, the proposed transportation improvements and associated benefits outweighed the adverse effects.

Determine Appropriate Mitigation

Since it was determined that the project would not result in disproportionately high and adverse effects on EJ populations, there was no EJ-related mitigation.

Lessons Learned

- Be conscious of EJ community preferences when establishing meeting locations (churches, ethnic businesses, etc.).
- Special purpose meetings held within the EJ community may draw better attendance and participation from the EJ community than traditional public meetings.
- Be conscious of the cultural/ethnic customs and traditions of the EJ communities in which you are working.
- Enlisting EJ community representatives to serve on community advisory committees can be beneficial to gain the EJ community's trust and to receive valuable feedback from the EJ community.
- Meaningful engagement of EJ communities throughout the project development process helped lead to better decision-making for the project and the community as a whole.





Bethlehem—Una Ciudad de Cambio y Crecimiento

El Sur de Bethlehem ha sido durante mucho tiempo un área de gran actividad y transformación y el nuevo desarrollo de las Propiedades de la Fábrica de Acero (Steel Works Properties), que se ubican en el South Side, significará cambios aun mayores. Además de los resultados económicos positivos, el nuevo desarrollo será causa de muchos otros impactos en el área. La infraestructura de transporte dentro del área del proyecto, que incluye la Ruta 412 desde la Carretera Interestatal 78 hasta el puente "Hill to Hill", se verá afectada. (Ver el mapa del proyecto mas abajo).

La Ciudad de Bethlehem, junto con el Departamento de Transportación de Pennsylvania, está manejando los estudios preliminares de ingeniería y ambientales de este proyecto para evaluar las necesidades futuras de la viabilidad de la Ruta 412.

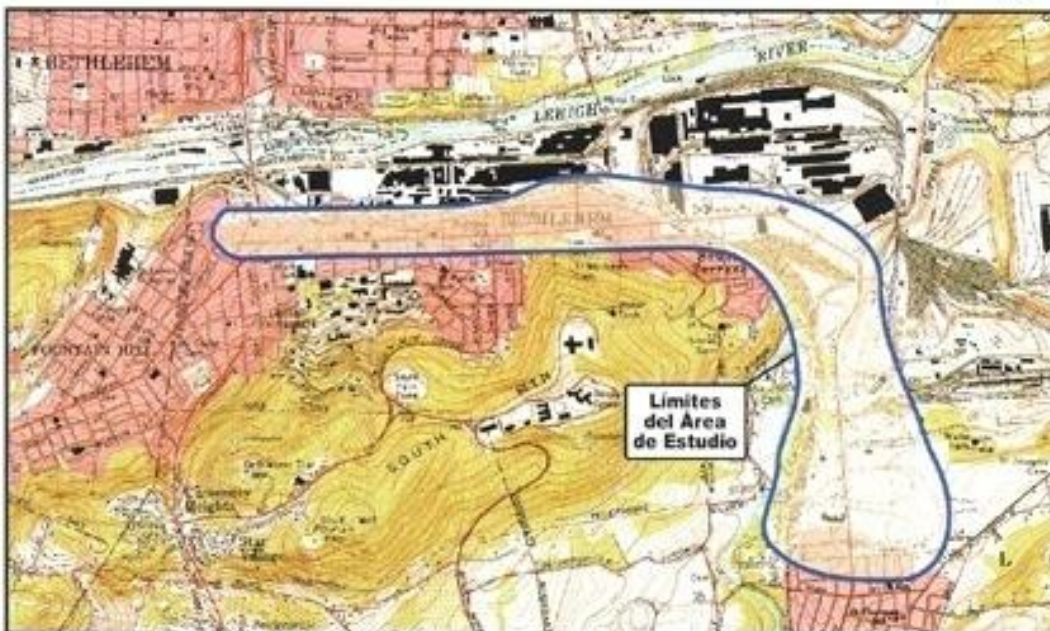
Los estudios preliminares de transporte indican que el sistema vial actual no soportará el tráfico adicional que

resultará del desarrollo futuro del área. El desarrollo tendrá efectos sobre el acceso y la movilidad en el área, así que el equipo del proyecto está trabajando para identificar las mejoras requeridas para mantener el movimiento de tráfico y el nivel de servicio a un nivel aceptable en esta viabilidad. Estas mejoras se evaluarán desde el punto de vista ambiental y de ingeniería.

Identificación de las Necesidades del Proyecto

Una de las primeras etapas de la ingeniería preliminar es identificar las necesidades del proyecto. El Análisis de Necesidades del Proyecto es un documento que identifica los problemas de transporte dentro del área del estudio. Las necesidades preliminares se presentaron en la primera reunión del proyecto, en enero de este año.

Continúa en la próxima página



ADDITIONAL CASE STUDIES

City of Lebanon Bridges Over Norfolk Southern Project: This project was developed to provide improved access for emergency services within a minority/low-income section of the City of Lebanon, PA. This project was awarded an FHWA *Enhancing the Environment for Human Activities* award in 2011.

<http://www.fhwa.dot.gov/environment/ehei/awards/2011/pennsylvania.cfm>

<http://lebanonpa.org/Pages/BridgeProject.aspx>

Additional on EJ analyses and case studies prepared by the FHWA can be found at the following links:

http://www.fhwa.dot.gov/environment/environmental_justice/ej_and_nepa/

http://www.fhwa.dot.gov/environment/environmental_justice/case_studies/