OS-299 (7-08)	TRANSMITTAL LETTER	**PUBLICATION:** Publication 10B November 2015 Edition
pennsylvania DEPARTMENT OF TRANSPORTATION		**DATE:** November 9, 2015

SUBJECT:

Design Manual Part 1B
Post-TIP NEPA Procedures
November 2015 Edition

INFORMATION AND SPECIAL INSTRUCTIONS:

Publication 10B (Post-TIP NEPA Procedures) is re-issued with this letter. The enclosed November 2015 Edition represents a complete publication. This Edition supersedes the September 2010 Edition and all subsequent changes. The effective date of the November 2015 Edition is December 1, 2015.

These new guidelines should be adopted on all new and existing projects as soon as practical without affecting any letting schedules.

This release includes incorporation of outstanding Strike-off Letters issued through August 31, 2015. Strike-off Letters issued on or after September 1, 2015 are still effective until they are incorporated into this publication.

Also, this release includes additions / deletions / revisions for the following:

*Chapter 3 (reissued in its entirety; supersedes Strike-off Letter 482-14-24)

CANCEL AND DESTROY THE FOLLOWING:

Publication 10B (September 2010 Edition and all associated changes)

SOL 482-13-03 (Jan. 7, 2013)
SOL 482-13-20 (Sept. 5, 2013)
SOL 482-14-24 (July 28, 2014)
SOL 482-15-07 (Feb. 12, 2015)

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Highway Administration

Publication 10B
Design Manual Part 1B

Post-TIP NEPA Procedures

November 2015 Edition

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DESIGN MANUAL PART 1B
POST-TIP NEPA PROCEDURES

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CHAPTER 1

INTRODUCTION

1.0 PURPOSE AND OBJECTIVES

The purpose of Publication 10B, Design Manual Part 1B, *Post-TIP NEPA Procedures* is to provide an overview of the procedures required to support the Preliminary Engineering/ National Environmental Policy Act (NEPA) Decision Phase of the Pennsylvania Department of Transportation's (PennDOT's) Transportation Program Development and Project Delivery Process (Figure 1.1). PennDOT developed this manual to serve as a guide for environmental staff, engineers, administrators, and others, both within and external to PennDOT, who are responsible for NEPA and/or Pennsylvania Act 120 environmental documentation and analysis, preliminary engineering, and final NEPA decision (Record of Decision (ROD), Finding of No Significant Impacts (FONSI), or Categorical Exclusion Approval) for a project. Familiarity with the procedures described herein will contribute to improved efficiency in the coordination and advancement of projects.

The Process and its procedures, discussed in this manual, were developed by PennDOT with input from the Metropolitan Planning Organizations (MPOs)/Rural Planning Organizations (RPOs), counties, municipalities, resource agencies, District representatives, Office of Chief Counsel, and the Federal Highway Administration (FHWA). The information provided in this manual is PennDOT guidance for project delivery and implementation but not a federal or state regulation. Following this guidance will assist in assuring compliance with relevant state and federal requirements.

1.1 ORGANIZATION

A. Design Manual Family of Documents. This manual is Part 1B of a nine-volume series of documents that encompass PennDOT's Design Manual. The Design Manual series of documents includes:

Publication 10	Part 1	*Transportation Program Development and Project Delivery Process*	Design Manual Part 1	(DM-1)
Publication 10A	Part 1A	*Pre-TIP and TIP Program Development Procedures*	Design Manual Part 1A	(DM-1A)
Publication 10B	Part 1B	*Post-TIP NEPA Procedures*	Design Manual Part 1B	(DM-1B)
Publication 10C	Part 1C	*Transportation Engineering Procedures*	Design Manual Part 1C	(DM-1C)
Publication 10X	Part 1X	*Appendices to Design Manuals 1, 1A, 1B, and 1C*	Design Manual Part 1X	(DM-1X)
Publication 13M	Part 2	*Highway Design*	Design Manual Part 2	(DM-2)
Publication 14M	Part 3	*Plans Presentation*	Design Manual Part 3	(DM-3)
Publication 15M	Part 4	*Structures*	Design Manual Part 4	(DM-4)
Publication 16	Part 5	*Utility Relocation*	Design Manual Part 5	(DM-5)

B. Contents of Design Manual Part 1B. Publication 10B, Design Manual Part 1B, *Post-TIP NEPA Procedures*, contains six chapters. This section provides a brief summary of each of the chapters.

Chapter 1, Introduction, describes the purpose of Publication 10B, Design Manual Part 1B, *Post-TIP NEPA Procedures*, provides an overview of the family of documents that encompass PennDOT's Design Manual, and summarizes the contents of the subsequent chapters and appendices. This chapter also outlines the proper procedures for implementing modifications and additions to this design manual.

Chapter 2, NEPA Introduction, details the regulatory background of NEPA and discusses the three NEPA Classes of Action - Class I Actions (Environmental Impact Statements (EISs)), Class II Actions (Categorical Exclusions (CEs)), and Class III Actions (Environmental Assessments (EAs)). The NEPA class of action is determined based on the significance of impacts to the environment (natural, cultural, and/or human environment); therefore, the

potential for each proposal's impacts must be identified. Impacts to the environment can be direct impacts, indirect impacts, or cumulative impacts.

Chapter 3, Categorical Exclusion Evaluations, outlines the Preliminary Engineering/NEPA Decision Phase activities for projects which have no significant impacts, and are therefore, categorically excluded from preparing an EIS or EA. Chapter 3 details project scoping, the verification of project information provided through pre-TIP screening, and CE preparation, circulation, and approval (if necessary).

Chapter 4, Environmental Assessments, describes the Preliminary Engineering/NEPA Decision Phase activities for projects where the significance of the environmental impacts is not clearly known. Chapter 4 details project scoping, the verification of project information provided through pre-TIP screening, and Environmental Assessment (EA) preparation, circulation, and issuance of a FONSI.

Chapter 5, Environmental Impact Statements, focuses on the Preliminary Engineering/NEPA Decision Phase activities for projects with significant impacts. Chapter 5 provides details on the following: verification of project information provided through pre-TIP screening, Project Initiation Letter, Notice of Intent, Scoping, Cooperating Agencies, Participating Agencies, Coordination Plan and Schedule, Draft EIS (DEIS) preparation and circulation, Final EIS (FEIS) preparation and availability, and issuance of the ROD.

Chapter 6, Documentation for 100% State-Funded Project with No Federal Involvement, provides guidelines for preparing documentation for projects that do not involve any major Federal actions, including Federal-aid funding. Projects that are 100% State-funded (in both design and construction) and do not require any other major Federal action fall into this category. Chapter 6 details the applicability and preparation of Environmental Documentation (ED) and Environmental Evaluation Reports (EERs). Generally, ED is prepared for projects that otherwise would qualify as a CEE, while EERs are prepared for projects that otherwise would qualify as an EA or EIS.

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Transportation Program Development and Project Delivery Process

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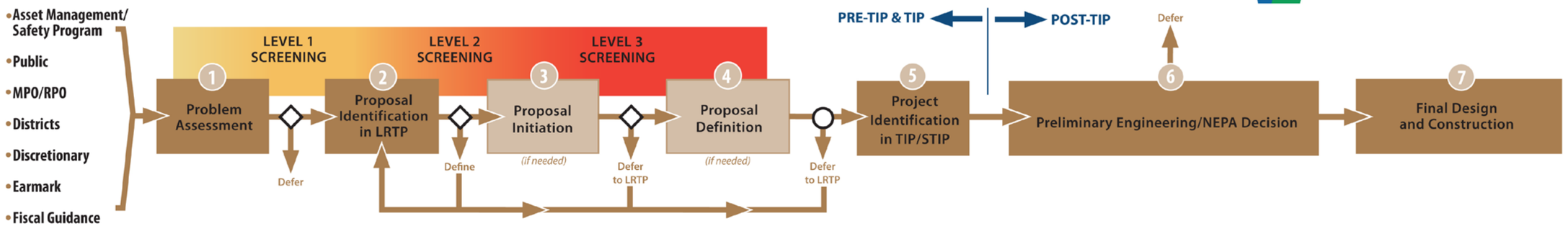

• **Asset Management, Minor Safety and ITS Projects that Maintain, Repair or Replace facilities in-kind**	• PennDOT proactively or reactive to public concerns prepares Asset Management Measures • PennDOT assesses Asset Management Needs and begins discussion with MPO/RPO on investment strategies	• PennDOT provides line items for asset management and other projects, specific details provided as soon as possible for inclusion in LRTP • Collaboration with all partners to identify potential issues	• PennDOT continues its asset management investigation in preparation for delivery of an Asset Management Form and Level 2 Form	• PennDOT provides Asset Management Form with project information and priorities • MPO/RPO provides project contextual info to include environmental, land use, connectivity to regional goals on Level 2 Form	• PennDOT and MPO/RPO collaboratively list projects on LRTP and TIP • Consideration given for proposals in the +2 years in TIP+2 (years 5-6)
• **Major Projects or Studies, Complex Transit, Environmentally Controversial or Complex Engineering, New Asset Projects**	• MPO/RPO receives problem statements and proposals from public, municipalities, counties, legislators, other interested parties on a Level 1 Screening Form • Staff reviews for presentation to MPO/RPO	• MPO/RPO leads Level 2 screening to add suggested approaches to problems • MPO/RPO leadership recommends deferral/dismissal, additional screening, or places proposal or study on LRTP	• MPO/RPO actions to study a proposal further move to Programming Advisory Committee (PAC) consideration	• MPO/RPO defers/ dismisses idea, or refers to TIP as study • If study, needs/ alternative analysis and appropriate screening forms are done, including Detailed Studies Report • DSR or other study results reviewed by PAC for recommendation to MPO/RPO, which makes decision to defer, include on LRTP or on TIP	• Projects on TIP have background environmental, land use, and public involvement documentation for NEPA clearance or use in future NEPA activities • Projects have a more accurate budget, scope, and schedule than in the past

• Project Initiation Letter • Notice of Intent (EIS) • Coordination Plan and Schedule • Identify/Invite Cooperating & Participating Agencies • Verify Engineering and Environmental Scoping • Mode choice(s) • Alternatives Analysis • Conceptual mitigation opportunities • Public/Agency input • Staging plan (if required) • Land use evaluation with planning partners • Scoping Field View • TS&L approval • Line & grade approval	• Technical documentation by subject area • Environmental Documentation • Mitigation Plan • VE/ACTT • Public/Agency input • Detailed alternatives analysis • Identification of Preferred Alternative • Project Management Plan and Annual Financial Plan (Major Projects > $500m) • Cost estimating • TIP Confirmation • Environmental Decision - ROD/Federal Register Notice - FONSI - CE - ED - EER - Commitment Summary - Section 4(f)/6(f) Approval - Mitigation Plan	• Permits • Environmental Tracking • CSS Themes • Public Involvement • Value Engineering • Re-evaluation (if necessary) • PS & E	• Permit Conditions • Pemit Amendment (if applicable) • Environmental Mitigation Review • Commitment Tracking • Value Engineering

◇ Decision Point

○ Go/No Go Decision Point at the completion of the Definition Phase for the MPO/RPO
- Based upon results of further definition, either program project on the TIP or defer it based on currently available information.

Prepared by: McCormick Taylor, Inc. on 8-19-10

Figure 1.1

1.2 PROCEDURES FOR MODIFICATIONS OR ADDITIONS TO THIS DOCUMENT

This Design Manual is published in digital form to facilitate future changes and additions. PennDOT recognizes that the regulations and policies affecting its procedures are continuously changing and that this manual must be a dynamic document to remain current. Whenever modifications or additions are required to improve the present procedures, the following procedure shall be followed:

1. Bureau Directors and District Executives should submit suggestions in the form of revised pages in digital form to the Central Office Bureau of Project Delivery for evaluation and processing. The Bureau of Project Delivery is to evaluate and process the submittals, and coordinate with other Central Office Deputates and Bureaus as necessary concerning any changes and/or additions. The suggestions should include:

- The title and page number of the existing procedures if applicable.
- The recommended revised page(s) and the Chapter into which it (they) should be incorporated.
- The reasons for recommending modifications or additional procedures.

2. The Director, Bureau of Project Delivery, will review the recommended changes or additional procedures and transmit copies to the various affected Bureau Directors for their comments.

3. The affected Bureau Directors shall provide their comments to the Director, Bureau of Project Delivery, who will take appropriate action.

4. The Director, Bureau of Project Delivery, will submit the final version of all changes to FHWA for approval prior to issuing the revised manual.

5. When modifications or additions are made to pages in this manual, a revision date will be indicated below the page number in the upper right-hand or upper left-hand corner, and the revision will be distributed by the Bureau of Project Delivery by Transmittal Letter.

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CHAPTER 2

NEPA INTRODUCTION

After being programmed on the TIP and State Transportation Improvement Program (STIP), projects that involve Federal actions, including projects that receive Federal-aid funding and/or require Federal actions (approval/permits) in any project phase, must comply with the National Environmental Policy Act (NEPA) and its associated implementing regulations (40 CFR §1500-1508). NEPA applies to all Federal agencies and the many activities they undertake, regulate, or fund that could affect the environment. It requires Federal agencies to disclose and consider the environmental consequences of their proposed undertakings before deciding a course of action. NEPA also established the Council on Environmental Quality (CEQ), which is charged with the administration of NEPA. The NEPA process consists of a set of fundamental objectives that include interagency coordination and cooperation and public participation in pre-TIP and project development decision making. The CEQ promulgated the Federal implementing regulations (40 CFR §1500-1508) for NEPA, which gave additional direction to all Federal agencies on how to comply with NEPA. Each Federal agency is authorized to implement its own regulations for NEPA. The Federal Highway Administration (FHWA)/Federal Transit Administration (FTA) implementing regulations can be found at 23 CFR §771 and prescribe documentation requirements for the NEPA process and establish three levels, or Classes of Action, which prescribe documentation requirements for the NEPA process.

- **Class I Actions (Environmental Impact Statements):** Actions that would significantly affect the natural, cultural, and/or human environment require preparation of an Environmental Impact Statement (EIS). EIS projects tend to be complex projects with substantial impacts to a variety of environmental resources. An example of such an action would be a new limited access highway.

- **Class II Actions (Categorical Exclusions):** Actions that do not individually or cumulatively have a significant environmental effect are categorically excluded from the requirement to prepare an EIS or an Environmental Assessment (EA). The majority of proposals will likely be determined to be Categorical Exclusions (CEs). Examples of such proposals include small bridge replacements, intersection improvements, resurfacing activities, minor widenings, construction of bicycle and pedestrian paths, traffic signal installation, and alteration of facilities to make them compliant with the Americans with Disabilities Act (ADA). Additional project types that may qualify as a CE can be found in 23 CFR §771.117(c) and (d), as well as those listed in Chapter 3.

- **Class III Actions (Environmental Assessments):** An EA is prepared for those projects for which the significance of impacts is not clearly established. More analysis is necessary to determine whether impacts are significant and an EIS will need to be prepared.

The NEPA class of action is determined based on the significance of impacts to the environment (natural, cultural, and/or human environment); therefore, the potential for each project's impacts must be identified. Impacts to the environment can be one of three types:

- **Direct Impacts** - Impacts caused by the action

- **Indirect Impacts** - Impacts caused by the action, but that are later in time or farther removed in distance but are still reasonably foreseeable

- **Cumulative Impacts** - Impacts on the environment which result from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions

More information regarding indirect and cumulative impacts can be found in Publication 640, *Indirect and Cumulative Effects (ICE) Desk Reference.* Once impacts are assessed for the proposal, the likely significance of the impacts should be considered (40 CFR §1508.27). There is no threshold to apply uniformly to all proposals to determine significance. The context and intensity of the impact(s) need to be examined for each individual project.

- **Impact Context** refers to the setting and helps determine the significance of impacts. Questions to ask

include but are not limited to: Is the impact to an entire watershed or limited to a single stream channel? Is the setting rural or urban? Is the impacted environment pristine or already disturbed? The context may need to be looked at from multiple perspectives. Are the impacts significant at a national, regional, statewide, and/or local level?

- **Impact Intensity** is the degree to which a project may affect a resource and is determined through any of the following:

  - Adverse and beneficial considerations
  - Public health or safety involved
  - Unique or unusual area of setting
  - Degree of public controversy
  - Uncertainty or a precedent set
  - Land use changes
  - Relocations
  - Impacted historic properties or parklands
  - Threatened or Endangered Species affected
  - Known and substantial cumulative impacts

Input from resource and regulatory agencies, as well as the public, can help determine the significance of impacts.

2.0 APPLICABILITY OF NEPA

For projects where there will be no major federal action (including permits) or Federal-aid funding (100% State-funded in both design and construction), NEPA regulations do not apply. However, in the absence of federal funds or other major federal action, a state Environmental Documentation (ED) would be prepared for projects that would be considered CEs under NEPA, and an Environmental Evaluation Report (EER) would be prepared for projects that would be EAs or EISs under NEPA. Projects completed as EDs and EERs must still comply with PA Act 120 and other applicable state laws. Refer to Chapter 6 for more information on EDs and EERs.

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CHAPTER 3

CATEGORICAL EXCLUSION EVALUATIONS

3.0 INTRODUCTION

This chapter provides guidance and information for the Preliminary Engineering/National Environmental Policy Act (NEPA) Decision Phase (Step 6) of the Process (Figure 1.1) for transportation projects determined to have no significant impacts, and which therefore, fall under the Categorical Exclusion (CE) class of NEPA action. To document that the project indeed does not result in any significant impacts and is categorically excluded from preparation of an Environmental Impact Statement (EIS), or an Environmental Assessment (EA), a Categorical Exclusion Evaluation (CEE) is conducted and documented.

This chapter provides the guidance support for the completion of CEEs in the CE Expert System. The CE Expert System, which operates through the Pennsylvania Department of Transportation's (PennDOT's) Engineering and Construction Management System (ECMS), is the electronic documentation tool for CEEs in Pennsylvania.

The information gathered and analyses conducted and documented in pre-TIP phases of the Process through use of the screening forms (as discussed in Publication 10A, Design Manual Part 1A, *Pre-TIP and TIP Program Development Procedures*) serves as the starting point for CE projects in the NEPA process. The pre-TIP information should be transferred and accepted into NEPA unless a determination has been made that it is no longer valid, in which case further study is necessary.

A. Bridge and Roadway Programmatic Agreement (BRPA). This Bridge and Roadway Programmatic Agreement (BRPA) is a programmatic agreement (PA) intended to address NEPA approval for a majority of the bridge, roadway and non-complex projects that PennDOT undertakes.

Federal Highway Administration (FHWA) regulations contain a list of specific actions and types of actions that normally do not result in significant environmental impacts and are classified as CE activities. While some of those activities do not require the submission of any further documentation to FHWA for NEPA approval (23 CFR 771.117(c)), this PA addresses the actions that meet the criteria for a CE but do require the submission of documentation to FHWA. The required documentation must demonstrate that the project meets the specific conditions and criteria to be classified as a CE, and that significant environmental impacts will not result (23 CFR 771.117(d)). This PA, negotiated in partnership with FHWA, serves as the required documentation for certain project actions determined to be CE actions and not have significant environmental impacts.

The BRPA is a formal NEPA approval document that pre-approves projects meeting the outlined stipulations and criteria in the PA.

Applicable Activities

Stipulation 1 of Part A, Stipulations 1, 2, and 4 of Part B, and Stipulation 1 of Part C of the PA define the following authorized activities:

- Roadway rehabilitation and pavement preservation activities (Part A),
- Bridge replacement, rehabilitation, preservation, and removal (Part B), and
- Other non-complex projects (Part C).

Specific activities of these types authorized by the PA are described in detail within the PA.

Projects may involve activities from only one part, or a combination of activities from more than one part, as long as the project meets the following requirements:

- The entire project must have logical termini and independent utility.
- The entire project (consisting completely of PA activity types) must be cleared in its entirety in the same BRPA Applicability Matrix.
- The project description and list of activities must be clearly documented in the BRPA applicability matrix.
- All requirements and limitations specified under the stipulations for each part/activity of a project must apply to that activity. For example, if a project includes both roadway resurfacing (part A) and Americans with Disability Act (ADA) curb ramps (part C), right-of-way cannot be acquired to complete the ADA curb ramps, even though minimal right-of-way may be acquired for the resurfacing. Information to clarify where right-of-way is being acquired, and for what purpose, should be included in the additional information/remarks section at the end of the applicability matrix.

Note that a project cannot be broken up into smaller parts that do not have independent utility and logical termini.

Use one applicability matrix to document a project with logical termini and independent utility. Multiple matrices can be included in a BRPA package in the Categorical Exclusion Expert System (CE Expert System) to accommodate projects grouped in Multimodal Project Management System (MPMS).

Limitations

The PA identifies specific limitations on the type of activities authorized under the PA within the Preamble, Stipulation 2 of Part A, Stipulation 3 of Part B, Stipulation 2 of Part C, and Part D. Those limitations generally include, but are not limited to:

1. No adverse effects to resources under Section 106,

2. Does not require the preparation of an individual Section 4(f) evaluation (programmatic 4(f) evaluations and *de minimis* findings are allowed),

3. No adverse impacts to Federal or State Threatened or Endangered Species,

4. Limitations on permanent right-of-way acquisition (temporary easements for construction are also allowed),

5. Permanent wetland impacts shall not exceed 0.05 acres,

6. No reduction in hydraulic capacity,

7. No significant floodplain encroachment, and

8. Widening is generally authorized, but widening cannot exceed 12 ft on each side.

For purposes of this PA, it is assumed that replacement of structures will occur within the same approximate footprint of the existing structure except for any widening that is required.

NOTE: The BRPA should be used for all applicable projects over traditional CEE documentation.

B. Categorical Exclusion Levels. For those projects for which the BRPA does not apply, the PennDOT and the FHWA have agreed to two levels of review and approval for CEs. The appropriate level of CE for a project is determined based on the type of action and conditions of a project and is based on the implementing regulations in 23 CFR §771.117(c) and (d), which provides two lists of actions that are classified as CEs. Criteria to determine the appropriate level of CE follow.

The actions included in the first list under 23 CFR §771.117(c) - "the C list" - are projects which technically require no formal documentation. The types of actions included in the second list under 23 CFR §771.117(d) - "the D list" - are projects which require documentation and approval by the FHWA. The following paragraphs detail how the FHWA Pennsylvania Division and PennDOT have agreed to address CEs and the criteria used to determine the appropriate CE level in Pennsylvania.

Based on the Stewardship and Oversight Agreement between PennDOT and FHWA (Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix C), the PennDOT Districts have approval authority for Level 1 CEEs, while Level 2 CEEs are reviewed by PennDOT Bureau of Project Delivery (BOPD), Highway Design and Technology Section (HDTS) and approved by the FHWA Pennsylvania Division Office.

Although Level 1 CEEs are not formally signed by FHWA, FHWA retains ultimate responsibility for all federal-aid documents. It is important to consult with PennDOT's HDTS and FHWA early in the process to ensure that the CE classification is appropriate for the project. Periodically, FHWA will conduct an audit to ensure that the PennDOT District offices are preparing adequate documentation and appropriately approving their CEs. This is done as prescribed in the Stewardship and Oversight Agreement between the two agencies. More information regarding this agreement and project oversight are contained in Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*.

Refer to Figure 3.1 CE Level Determination for additional assistance in determining the appropriate level of NEPA documentation.

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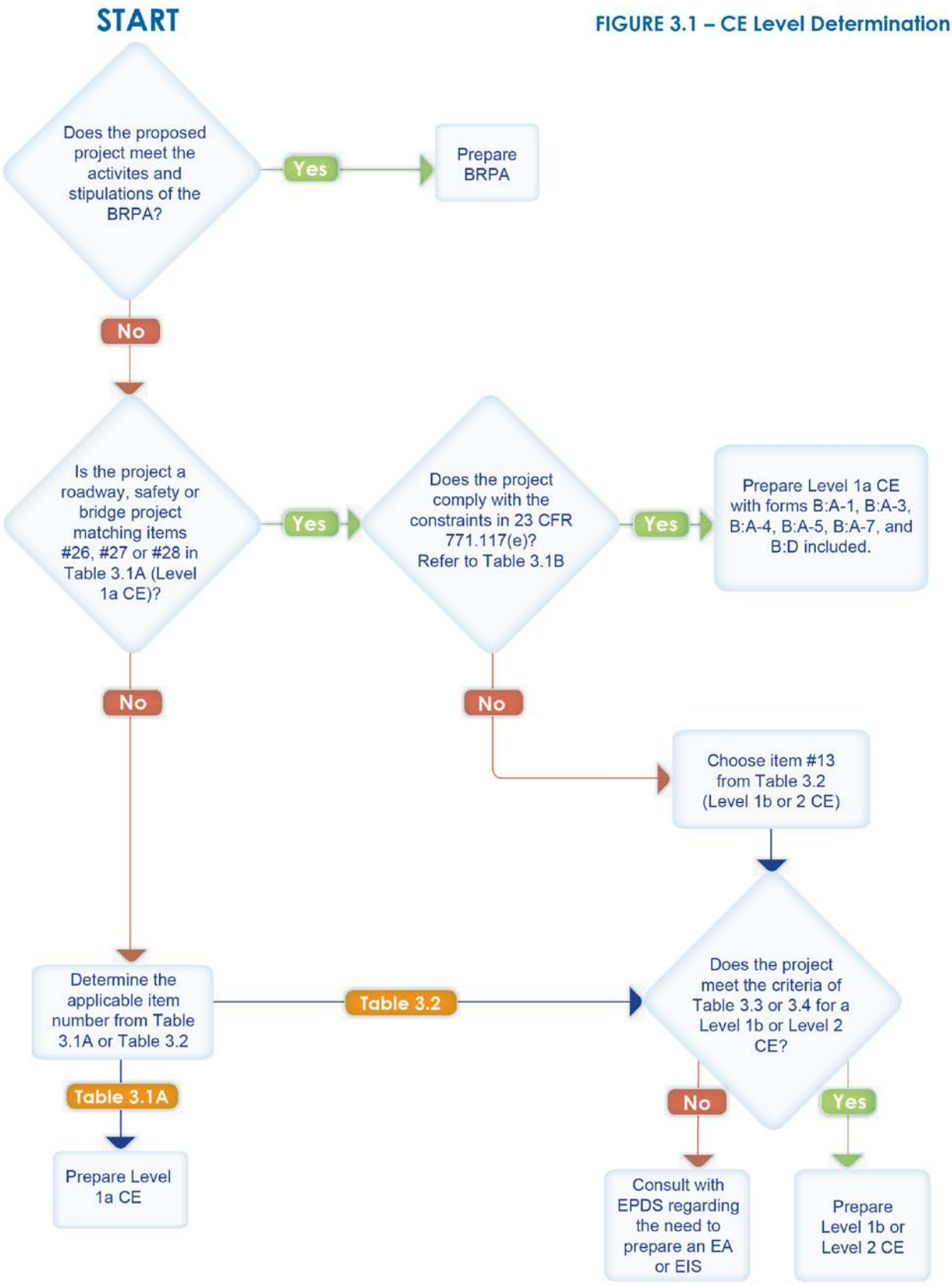
FIGURE 3.1 – CE Level Determination



Level 1 CE Actions

- **Level 1a CE Actions:** As stated in 23 CFR §771.117(c), some actions "…meet the criteria for CEs in the CEQ regulation and normally do not require any further NEPA reviews by the Administration." These actions are listed in Table 3.1A and are considered Level 1a CE actions in Pennsylvania's process.

  - **Level 1a* CE Actions:** Level 1a CE actions that generally involve no physical construction have an asterisk shown beside them on Table 3.1A. Level 1a* CE Actions do not require completion of a CEE. The only documentation required is placement of the item number on Form D-4232. Level 1a* CEs are not tracked in the CE Expert System.

  - **Level 1a CE Actions:** For all other Level 1a CE actions (item numbers without asterisks in Table 3.1A excluding actions 26-28), only Parts A: Gen (General) and Part C (CEE Approval Processing) of the CE Expert System Package must be completed; however, other pages, including resource forms, are available should the preparer deem them appropriate for that particular project. (For example, if there is a question regarding a particular resource that required a more detailed analysis, it may be appropriate to document the analysis by including the form that discusses that resource.) Level 1a CEs are approved by the PennDOT District Environmental Manager.

  - **Level 1a CE Actions 26-28:** Level 1a CE actions 26-28 must meet the constraints included in Table 3.1B. In order to document these constraints are met, complete forms A:Gen (General), A:Eng (Engineering), B:A-1 (Aquatic Resources), B:A-3 (Wildlife), B:A-4 (Cultural Resources), B:A-5 (Section 4(f) Resources), B:A-7 (Socioeconomic Areas), B:D (Permits Checklist), and C (CEE Approval Processing). If a project consists of more than one Level 1a CE actions, it must meet the criteria for the more complicated/constrained action. For example, if a project consisted of both actions 3 and 26, it would need to meet the constraints associated with action 26.

  NOTE: In most scenarios, if actions 26, 27, or 28 are applicable and the constraints in Table 3.1B are met, the BRPA will also be applicable and should be considered (in discussion with the District Environmental Unit) for documentation. The most appropriate scenario to use actions 26, 27, or 28 would be if the project does not meet the stipulations for use of the BRPA as outlined in Section 3.0.A.

- **Level 1b CE Actions:** For actions that are listed on Table 3.2 (which come from 23 CFR §771.117(d) with the addition of wetland replacement sites), apply the criteria in Table 3.3 to determine whether they qualify as Level 1b CEs. If the anticipated project impacts fit within the criteria listed in Table 3.3, the required documentation and approval is a Level 1b CEE. All of Part A, Part B, and Part C of the CE Expert System Package must be completed for Level 1b CEEs. Level 1b CEs are approved by the PennDOT District Executive.

Level 2 CE Actions

If a CE action is listed in Table 3.2, and does not meet the criteria in Table 3.3, apply the criteria shown in Table 3.4. If the project fits within the criteria in Table 3.4 and does not involve significant impacts to resources individually or cumulatively, it can be processed as a Level 2 CEE. All of Part A, Part B, and Part C of the CE Expert System Package must be completed for Level 2 CEEs. Level 2 CEs are reviewed by HDTS and are approved by the FHWA Division office.

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TABLE 3.1A
LEVEL 1a CATEGORICAL EXCLUSION ACTIONS[1]

APPROVED BY DISTRICT ENVIRONMENTAL MANAGER

1.* Activities which do not involve or lead directly to construction, such as planning and research activities; grants for training; engineering to define the elements of a proposed action or alternatives so that social, economic, and environmental effects can be assessed; and Federal-aid system revisions which establish classes of highways on the Federal-aid highway system.

2. Approval of utility installations along or across a transportation facility.

3. Construction of bicycle and pedestrian lanes, paths, and facilities.

4. Activities included in the State's highway safety plan under 23 U.S.C. 402.

5.* Transfer of Federal lands pursuant to 23 U.S.C. 107(d) and/or 23 U.S.C. 317 when the land transfer is in support of an action that is not otherwise subject to FHWA review under NEPA.

6. The installation of noise barriers or alterations to existing publicly owned buildings to provide for noise reduction.

7. Landscaping.

8. Installation of fencing, signs, pavement markings, small passenger shelters, traffic signals, and railroad warning devices where no substantial land acquisition or traffic disruption will occur.

9. The following actions for transportation facilities damaged by an incident resulting in an emergency declared by the Governor of the State and concurred in by the Secretary, or a disaster or emergency declared by the President pursuant to the Robert T. Stafford Act (42 U.S.C. 5121):

   (i) Emergency repairs under 23 U.S.C. 125; and

   (ii) The repair, reconstruction, restoration, retrofitting, or replacement of any road, highway, bridge, tunnel, or transit facility (such as a ferry dock or bus transfer station), including ancillary transportation facilities (such as pedestrian/bicycle paths and bike lanes), that is in operation or under construction when damaged and the action:

      (A) Occurs within the existing right-of-way and in a manner that substantially conforms to the preexisting design, function, and location as the original (which may include upgrades to meet existing codes and standards as well as upgrades warranted to address conditions that have changed since the original construction); and

      (B) Is commenced within a 2-year period beginning on the date of the declaration.

10.* Acquisition of scenic easements.

11. Determination of payback under 23 U.S.C. 156 for property previously acquired with Federal-aid participation.

12. Improvements to existing rest areas and truck weigh stations.

13.* Ridesharing activities.

14. Bus and rail car rehabilitation.

15. Alterations to facilities or vehicles in order to make them accessible for elderly and handicapped persons.

16.* Program administration, technical assistance activities, and operating assistance to transit authorities to continue existing service or increase service to meet routine changes in demand.

17.* The purchase of vehicles by the applicant where the use of these vehicles can be accommodated by existing facilities or by new facilities which themselves are within a CE.

18. Track and railbed maintenance and improvements when carried out within the existing right-of-way.

19. Purchase and installation of operating or maintenance equipment to be located within the transit facility and with no significant impacts off the site.

20. Promulgation of rules, regulations, and directives.

Continued on next page.

TABLE 3.1A (CONTINUED)
LEVEL 1a CATEGORICAL EXCLUSION ACTIONS[1]

21. Deployment of electronics, photonics, communications, or information processing used singly or in combination, or as components of a fully integrated system, to improve the efficiency or safety of a surface transportation system or to enhance security or passenger convenience. Examples include, but are not limited to, traffic control and detector devices, lane management systems, electronic payment equipment, automatic vehicle locaters, automated passenger counters, computer-aided dispatching systems, radio communications systems, dynamic message signs, and security equipment including surveillance and detection cameras on roadways and in transit facilities and on buses.

22. Projects, as defined in 23 U.S.C. 101, that would take place entirely within the existing operational right-of-way. Existing operational right-of-way refers to right-of-way that has been disturbed for an existing transportation facility or is maintained for a transportation purpose. This area includes the features associated with the physical footprint of the transportation facility (including the roadway, bridges, interchanges, culverts, drainage, fixed guideways, mitigation areas, etc.) and other areas maintained for transportation purposes such as clear zone, traffic control signage, landscaping, any rest areas with direct access to a controlled access highway, areas maintained for safety and security of a transportation facility, parking facilities with direct access to an existing transportation facility, transit power substations, transit venting structures, and transit maintenance facilities. Portions of the right-of-way that have not been disturbed or that are not maintained for transportation purposes are not in the existing operational right-of-way.

23. Federally-funded projects:
    (i) That receive less than $5,000,000 of Federal funds; or
    (ii) With a total estimated cost of not more than $30,000,000 and Federal funds comprising less than 15 percent of the total estimated project cost.

24.[2] Localized geotechnical and other investigation to provide information for preliminary design and for environmental analyses and permitting purposes, such as drilling test bores for soil sampling; archaeological investigations for archaeology resources assessment or similar survey; and wetland surveys.

25.[2] Environmental restoration and pollution abatement actions to minimize or mitigate the impacts of any existing transportation facility (including retrofitting and construction of stormwater treatment systems to meet Federal and State requirements under sections 401 and 402 of the Federal Water Pollution Control Act (33 U.S.C. 1341; 1342)) carried out to address water pollution or environmental degradation.

26. Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction, adding shoulders, or adding auxiliary lanes (including parking, weaving, turning, and climbing lanes), if the action meets the constraints in 23 CFR 771.117(e).

27. Highway safety or traffic operations improvement projects, including the installation of ramp metering control devices and lighting, if the project meets the constraints in 23 CFR 771.117(e).

28. Bridge rehabilitation, reconstruction, or replacement or the construction of grade separation to replace existing at-grade railroad crossings, if the actions meet the constraints in 23 CFR 771.117(e).

29. Purchase, construction, replacement, or rehabilitation of ferry vessels (including improvements to ferry vessel safety, navigation, and security systems) that would not require a change in the function of the ferry terminals and can be accommodated by existing facilities or by new facilities which themselves are within a CE.

30. Rehabilitation or reconstruction of existing ferry facilities that occupy substantially the same geographic footprint, do not result in a change in their functional use, and do not result in a substantial increase in the existing facility's capacity. Example actions include work on pedestrian and vehicle transfer structures and associated utilities, buildings, and terminals.

* These projects require only item number on form D-4232.

[1] Level 1a Actions may require additional consideration for particular environmental impacts.

[2] CE is not applied to activities being done as part of a project; but only applies if these activities take place independent of any other project.

TABLE 3.1B
23 CFR 771.117(E) CONSTRAINTS

The following constraints apply to items 26-28 in Table 3.1A. If a project fits items 26-28, but does not meet the constraints listed below, the project cannot be processed as a Level 1a CE, but could be processed as a Level 1b CE as long as the Level 1b criteria of Table 3.3 are met.

1. An acquisition of more than a minor amount of right-of-way or that would result in any residential or non-residential displacements;
2. An action that needs a bridge permit from the U.S. Coast Guard, or an action that does not meet the terms and conditions of a U.S. Army Corps of Engineers nationwide or general permit under section 404 of the Clean Water Act and/or section 10 of the Rivers and Harbors Act of 1899;
3. A finding of "adverse effect" to historic properties under the National Historic Preservation Act, the use of a resource protected under 23 U.S.C. 138 or 49 U.S.C. 303 (section 4(f)) except for actions resulting in *de minimis* impacts, or a finding of "may affect, likely to adversely affect" threatened or endangered species or critical habitat under the Endangered Species Act;
4. Construction of temporary access, or the closure of existing road, bridge, or ramps, that would result in major traffic disruptions;
5. Changes in access control;
6. A floodplain encroachment other than functionally dependent uses (e.g., bridges, wetlands) or actions that facilitate open space use (e.g., recreational trails, bicycle and pedestrian paths); or construction activities in, across or adjacent to a river component designated or proposed for inclusion in the National System of Wild and Scenic Rivers.

TABLE 3.2
LEVEL 1B AND LEVEL 2 CATEGORICAL EXCLUSION ACTIONS

1. Reserved[1]
2. Reserved[1]
3. Reserved[1]
4. Transportation corridor fringe parking facilities.
5. Construction of new truck weigh stations or rest areas.
6. Approvals for disposal of excess right-of-way or for joint or limited use of right-of-way, where the proposed use does not have significant adverse impacts.
7. Approvals for changes in access control.
8. Construction of new bus storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and located on or near a street with adequate capacity to handle anticipated bus and support vehicle traffic.
9. Rehabilitation or reconstruction of existing rail and bus buildings and ancillary facilities where only minor amounts of additional land are required and there is not a substantial increase in the number of users.
10. Construction of bus transfer facilities (an open area consisting of passenger shelters, boarding areas, kiosks and related street improvements) when located in a commercial area or other high activity center in which there is adequate street capacity for projected bus traffic.
11. Construction of rail storage and maintenance facilities in areas used predominantly for industrial or transportation purposes where such construction is not inconsistent with existing zoning and where there is no significant noise impact on the surrounding community.
12. Acquisition of land for hardship or protective purposes. Hardship and protective buying will be permitted only for a particular parcel or a limited number of parcels. These types of land acquisition qualify for a CE only where the acquisition will not limit the evaluation of alternatives, including shifts in alignment for planned construction projects, which may be required in the NEPA process. No project development on such land may proceed until the NEPA process has been completed.
    i. Hardship acquisition is early acquisition of property by the applicant at the property owner's request to alleviate particular hardship to the owner, in contrast to others, because of an inability to sell his property. This is justified when the property owner can document on the basis of health, safety or financial reasons that remaining in the property poses an undue hardship compared to others.
    ii. Protective acquisition is done to prevent imminent development of a parcel which may be needed for a proposed transportation corridor or site. Documentation must clearly demonstrate that development of the land would preclude future transportation use and that such development is imminent. Advance acquisition is not permitted for the sole purpose of reducing the cost of property for a proposed project.
13. Actions 26, 27, and 28 from Table 3.1A that do not meet the constraints in Table 3.1B.
14. Construction of replacement wetlands.

[1] These items are now items 26, 27, and 28 from Table 3.1A that meet the constraints outlined in Table 3.1B.

TABLE 3.3
LEVEL 1B CATEGORICAL EXCLUSION CRITERIA

APPROVED BY DISTRICT EXECUTIVE

1. Involving routine right-of-way acquisition with no controversial displacements of residences or businesses.[1]
2. Involving advance acquisition of right-of-way upon FHWA approval of the Hardship Acquisition or Protective Buy request consistent with 23 CFR §771.117d (12).
3. Maintaining existing access control or change in access control on non-interstate facilities upon consultation and concurrence of FHWA.
4. Involving a "no effect" or "is not likely to adversely affect" finding for federally listed or candidate endangered or threatened species or Designated Critical Habitat.[2]
5. Not involving a Coast Guard Permit or Section 4(f) Evaluation, unless the Section 4(f) use is *de minimis* or net benefit.
6. Involving a hazardous, residual or municipal waste site, excluding U.S. Environmental Protection Agency (EPA) or PA Hazardous Sites Cleanup Act (HSCA) Superfund Sites.
7. Not involving substantial public controversy on environmental grounds.
8. Involving a finding of "No Historic Properties Affected," or "No Adverse Effect," or the project is exempt from further review under Appendix C of the Programmatic Agreement among the FHWA, PennDOT, the Pennsylvania State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (ACHP) Regarding Implementation of the Federal Aid Highway Program in Pennsylvania (Section 106 Delegation PA).
9. Involving a finding of "Adverse Effect" on historic or archaeological resources that can be resolved with a letter of agreement, or resolved with a Standard Treatment, under the Section 106 Delegation PA.
10. Involving a No Adverse Effect or an Adverse Effect on historic or archaeological resources that are on or eligible for the National Register of Historic Places (NRHP) as concurred upon by the SHPO, but has no Section 4(f) "use" (other than *de minimis* or net benefit) as determined by FHWA.[1, 3]
11. Involving a Temporary Occupancy that does not constitute a "use" of Section 4(f) properties upon FHWA consultation and determination.

[1] The threshold of public controversy and degree of Adverse Effect that would mandate classification of a Level 2 CE, EA or EIS will be at the discretion of FHWA.

[2] Designated Critical Habitats are described in 50 CFR § 17 and 226.

[3] This condition does not preclude PennDOT's need to consult with the ACHP through FHWA as required.

TABLE 3.4
LEVEL 2 CATEGORICAL EXCLUSION CRITERIA
APPROVED BY FHWA

1. Involving public controversy on environmental grounds or the potential for controversial displacements of residences or businesses.[1]
2. Involving an Adverse Effect on historic resources that cannot be resolved with a letter of agreement or standard treatment, or that triggers a Section 4(f) use (other than a *de minimis* or net benefit use).
3. Involving a Coast Guard Permit.
4. Involving EPA or PA HSCA Superfund Sites.
5. Involving either an Individual or Programmatic Section 4(f) Evaluation (other than *de minimis* or net benefit use)[2].
6. Involving federally listed Wild and Scenic Rivers or Section 6(f) property.
7. Involving an "is likely to adversely affect" finding for federally listed or candidate endangered or threatened species or Designated Critical Habitat.[3]
8. Involving an action that does not conform to the PA Air Quality Implementation Plan that is approved or promulgated by the EPA in air quality nonattainment areas.
9. Involving properties acquired by municipalities with hazard mitigation grants under the provisions of the Stafford Act [42 U.S.C. 5170c].

[1] The threshold of public controversy and degree of Adverse Effect that would mandate classification of a Level 2 CE, EA or EIS will be at the discretion of FHWA.

[2] Projects that meet the stipulations and criteria of the BRPA that also require a programmatic Section 4(f) evaluation (except the historic bridges programmatic agreement), may be processed under the BRPA.

[3] Designated Critical Habitats are described in 50 CFR § 17 and 226.

C. CE Level and Resource Impacts. During Engineering and Environmental Scoping (hereafter to be referred to as "Scoping"), the District Project Manager should work with the District Environmental Unit to evaluate the potential for environmental impacts and determine the level of CE. In addition to the determining if a project's scope of work fits within one of the categories for categorical exclusions, the scoping process must determine if there exist any "unusual circumstances" as defined in 23 CFR 771.117(b):

> Any action which normally would be classified as a CE but could involve unusual circumstances will require the FHWA, in cooperation with the applicant, to conduct appropriate environmental studies to determine if the CE classification is proper. Such unusual circumstances include:
>
> (1) Significant environmental impacts;
>
> (2) Substantial controversy on environmental grounds;
>
> (3) Significant impact on properties protected by section 4(f) of the DOT Act or section 106 of the National Historic Preservation Act[1]; or
>
> (4) Inconsistencies with any Federal, State, or local law, requirement or administrative determination relating to the environmental aspects of the action.

The scoping process, as recorded in the Scoping Document helps ensure that a project uses the correct level of CE. There are situations when Level 1a activities ***may*** involve environmental resources with the potential for some degree of impact that could require that the project be elevated to a Level 1b or Level 2 CEE. Specific examples are as follows:

Threatened and Endangered (T&E) Species: If after consultation with the agencies with jurisdiction, it is determined that there are no T&E species known to be present, the project can continue as a Level 1a CEE. If after consultation with the agencies with jurisdiction, it is determined that T&E species are known to be present, further evaluation must be considered to determine the potential for effects to these species. If there is no potential for effects, the project can be processed as a Level 1a CEE. If during consultation it is determined that the project "may affect but is not likely to adversely affect" these species and agency concurrence in this determination is obtained, the project can be processed as a Level 1b CEE. If effects are "likely to adversely affect" the listed or candidate species, the project must be processed as a Level 2 CEE at a minimum. Generally this will require minimal analysis by using the Pennsylvania Natural Diversity Inventory (PNDI) system to assess potential effects (see Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 3 for more information).

Hazardous, Residual, or Municipal Waste: If, after research, the study area is not known to involve hazardous, municipal, or residual waste, the project can continue to be processed as a Level 1a CEE. If hazardous, residual, or municipal waste is present, the project may be processed as a Level 1b if certain conditions are met; otherwise the project must be processed as a Level 2 CEE.

Wetlands: Level 1a actions typically do not involve wetlands, but there is the potential for wetland involvement, typically with actions #3, 6, 7, 9, 18, 22, and 23 (Table 3.1A). These actions will typically require a State or Federal permit, and as such cannot be processed as a Level 1a CEE, with the exception of emergency projects falling under action #9.

Cultural Resources: If cultural resources exist in the study area, the project can still be processed as a Level 1a CEE *if* the action is *specifically* exempted as defined in Appendix C of the Section 106 PA. This would typically involve actions #3, 6, 7, 8, 9, 12, 14, 15, 22, and 23 (Table 3.1A). (The Section 106 PA allows PennDOT Cultural Resource Professionals (CRPs) to fulfill Section 106 requirements on behalf of FHWA without FHWA oversight. Supporting documentation must be placed in the project file for FHWA monitoring purposes). If the project, as defined, cannot be exempted under the Section 106 PA, the project will be processed as a Level 1b or Level 2 CEE at a minimum.

[1] An Adverse Effect upon an historic property does not necessarily elevate the classification to a Level 2 CE. In consultation with FHWA, an Adverse Effect of a lesser degree may be classified as a Level 1b.

NOTE: Many issues and environmental resources will have been identified during screening completed in the pre-TIP phases. Project scoping begins by verifying information from screening. PNDI may need to be rerun for the project if more than two years have passed since the date of the last check.

D. Other Actions Eligible for CEs. If a proposed project is not one of the actions listed in Table 3.1A or Table 3.2, the project may still be processed as a CE as "Other"; however, the CEE must clearly demonstrate that the proposed action will not result in significant impacts.

In consultation with HDTS, consider the Class of Action to ensure that the project will not involve any of the four circumstances in 23 CFR §771.117(b).

If the project still meets the criteria for a CE, documentation should be submitted to HDTS for review. The aforementioned documentation may be a CEE prepared in accordance with this manual and processed as a Level 2 CEE, or it may be the Scoping Document. Consult with HDTS for guidance.

The documentation must demonstrate that the proposed project will not result in any of the four circumstances in 23 CFR §771.117(b), thereby indicating that it would not result in significant impacts. HDTS will then send the documentation to FHWA to obtain its concurrence that the project may be classified as a CE, or send the documentation back to the Originating Office (the "lead" District, Bureau, Office, or Agency responsible for administering, developing and implementing the given project) for revision.

Other USDOT agencies, including the Federal Transit Administration, Federal Railroad Administration, and Federal Aviation Administration, have promulgated regulations for considering environmental consequences of actions initiated within their agencies. If you have the unusual circumstances where a project involves one of these other USDOT agencies in addition to FHWA, joint Federal lead agencies may be appropriate, and the other agency regulations will need to be considered in addition to FHWA's regulations. Consult with FHWA which, consistent with USDOT's "One DOT" philosophy, will act as a liaison with these other agencies to obtain appropriate regulations and contacts.

3.1 ADMINISTRATIVE ACTIVITIES

Once a project is programmed on the TIP and STIP, it is ready to begin the Preliminary Engineering/NEPA Decision Phase (Step 6) of the Process. In this phase, the Originating Office will initiate the NEPA process for the project in accordance with the established TIP/STIP project schedule, building the analysis upon the information gathered in Pre-TIP phases of the Process through the appropriate level of screening form (and potentially the Detailed Studies Report (DSR), if required).

A. Obtain Screening Information from the Pre-TIP/STIP Phases. As per 23 CFR §771.111(a)(2), "information and results produced by, or in support of, the transportation planning process may be incorporated into environmental review documents in accordance with 40 CFR 1502.21 and 23 CFR 450.212 or 450.318.3." Data and information gathered and analyses performed in pre-TIP phases form the foundation of the NEPA process and subsequent analysis for the project. Data and information gathered during the Pre-TIP phases should be obtained by the District's Planning and Programming or Project Manager. The last level of screening form (Level 1, Level 2, or the Level 3 Screening Forms (and the DSR, if prepared)) completed in the Pre-TIP phases of the Process (Figure 1.1) for the project contains a wealth of data and information including the preliminary scope of work, Class of NEPA action, and cost estimate for design and construction.

Screening forms are stored in the Linking Planning and NEPA online system. Data from the screening forms automatically populate appropriate fields (approximately one half) within the scoping documents generated in the CE Expert System.

B. Evaluation of Human Resources Needs. The anticipated environmental documentation required, availability of funding, and availability of staff determine human resource needs for the project including the use of:

- In-house staff
- Resource agency technical services
- Consultants

If it is decided that a consultant is needed, consultant selection should proceed in accordance with Publication 93, *Policy and Procedures for the Administration of Consultant Agreements*.

C. Establish Technical Support Data. Establish Technical Support Data files at the Originating Office to retain data and study materials associated with the CEE. The Technical Support Data should contain all pertinent information gathered and referenced during the environmental evaluation and be retained by the Project Manager. These files need to include all pre-TIP/STIP phase studies or documentation that are used or referenced in the NEPA process. The Project Manager's files can reference other Unit's files (environmental, permitting, etc.) rather than housing all pertinent information. File information can be stored electronically provided the location of the data is referenced in the Project Manager's files and is accessible. Supporting reports (wetland delineation reports, cultural resource reports, air and noise reports, etc.), telephone memorandums, email, and pertinent correspondence should be included in the Technical Support Data. All information contained in the Technical Support Data should be legible, including photos and maps. Technical Support Data guidance is provided in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C,* Appendix F.

3.2 SCOPING FIELD VIEW AND SCOPING DOCUMENT PREPARATION

Scoping involves the evaluation of a project's existing and proposed engineering features, assessment of environmental resources potentially impacted by the proposed project, and consideration of necessary public and agency involvement. Integrate the evaluation of engineering parameters and the evaluation of environmental resources in the Scoping Process. Engineering decisions should be made with consideration of environmental resources and the environmental consequences of implementing the decisions. Likewise, a thorough evaluation of resource involvement cannot be efficiently performed without adequate engineering to produce a defined project footprint.

The Scoping Process includes the following seven steps:

1. Obtain and Review Pre-TIP Information Including Level 2 and 3 Screening Forms
2. Begin To Prepare Scoping Documentation
3. Assemble Multi-Disciplinary Scoping Team
4. Gather Information and Data
5. Coordinate Scoping Field View
6. Conduct Scoping Field View
7. Complete Scoping Documentation

See Publication 10C, Design Manual Part 1C, *Transportation Engineering Procedures*, Chapter 2 for more details on Scoping Field View requirements.

A. Scoping Documentation. There are two types of documents within the CE Expert System for traditional CEEs: the Scoping Document and the CEE Document. The Scoping Document brings engineering and environmental considerations together, based upon information already documented during screening and analyses already performed in pre-TIP phases combined with additional research and the results of the Scoping Field View. A Scoping Document must be completed and approved prior to preparation of a CEE Document, under most situations. Information and data from the Scoping Document will be used to populate fields within the CEE Document.

The scoping process determines the NEPA class of action and, if a CE is appropriate for the project, the level of CE documentation required. Only one Scoping Document is used in the CE Expert System for all levels of NEPA documentation.

NOTE: Some Level 1a* CEs do not require documentation within the CE Expert System; just completion of the Form D-4232. A Scoping Document need not be completed for such Level 1a* CEs.

1. Verification of Pre-TIP Information. The Scoping Document utilizes information gathered in pre-TIP/STIP phases, contained in the last level of screening form completed (and DSR, if prepared). The information and data from highest level of screening form (and DSR, if prepared) will be used to begin to populate the Scoping Document. Verification of this information must be performed in order to accept this information as the basis for scoping in NEPA.

The following questions need to be considered when verifying data and/or analyses from pre-TIP/STIP process phases:

- How much time has passed since the studies from pre-TIP/STIP phases and corresponding decisions were made?
- Were the future year policy assumptions used in the pre-TIP/STIP phases of the Process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process?
- What changes have occurred in the area since the time the pre-TIP/STIP data was gathered and analyses were completed?
- Have resource classifications changed since the time the pre-TIP/STIP data was gathered and analyses were completed?
- Have resource agency requirements changed since the time the pre-TIP/STIP data was gathered and analyses were completed?
- Are the information and analyses still relevant/valid?

Using professional judgment, the District's Planning and Programming Manager works with the District's Functional Unit Managers (see Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*) and Project Manager, if one has been assigned, to make the final determination of whether the pre-TIP information is still valid and identify what should be examined during the scoping process to update and/or verify project area information. This determination is made based on the above bulleted questions, as well as the complexity of the project (see Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 2 for complexity information).

NOTE: To aid in the verification of data, Table 3.5 provides a list of environmental features that were typically evaluated for a transportation project in the pre-TIP process phases and identifies potential sources that could provide information on that particular feature. (Links to the environmental web pages can be found on the CE Expert System homepage in the left navigation pane. This is not an all-inclusive list, but merely a reference to frequently used resource sites.)

2. Begin to Prepare the Scoping Document. The Scoping Document is used to compile key engineering and environmental data and information. The Scoping Document also includes sections to describe anticipated public and agency involvement, permits, consistency determinations, Scoping Field View attendance, project complexity level and anticipated NEPA documentation.

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TABLE 3.5
POTENTIAL SOURCES OF ENVIRONMENTAL DATA

ENVIRONMENTAL FEATURES	INFORMATION SOURCE
NATURAL RESOURCES	
Floodplains	FEMA Mapping, USGS Mapping.
Wetlands	NWI Mapping, Soil Surveys, Color Infrared Aerial Photography, Cursory Field View.
Surface Waters/Water Quality	USGS Mapping, Aerial Photographs, Cursory Field View, PA DEP's Chapter 93, STORET Data, PFBC Files.
Prime and Statewide Important Farmland Soils	NRCS, County Conservation District, PA Dept. Of Agriculture, County Soil Surveys, Penn State University's SoilMap tool.
Productive Agricultural Land	Aerial Photographs, Cursory Field View, Municipal Mapping and Tax Parcel Information for Act 43, 319 and 515 Lands. Penn State University's SoilMap tool
Critical Habitat Areas/Threatened Endangered Species	DCNR's PNHP/PNDI Environmental Review Tool, County Inventories, PGC, PFBC, USFWS, NMFS.
Geological Resources	County Soil Survey, Geologic Publications, Cursory Field View, USGS, DCNR's Bureau of Topographic and Geologic Survey.
Terrestrial Habitat	USGS Mapping, Aerial Photographs, Cursory Field View.
CULTURAL RESOURCES	
Historic Resources Historic Structures Historic Districts	Cultural Resources Geographic Information System (CRGIS), State Historic Preservation Office Files, County Survey Files, Field Reconnaissance, Historical Societies, National, State or Local Archives, Courthouse, Library, Historic Bridge Surveys, Consulting Parties.
Archaeological Resources	CRGIS, Local Informants, PASS Files, Local Historical Society, Society for PA Archaeology Chapters, Field Reconnaissance, Tribal Consultation.
SOCIOECONOMIC RESOURCES	
Population	US Census Bureau, Local Municipalities, State Data Center, County Planning Commission.
Properties - Residential, Commercial Industrial	Preliminary Engineering Plans, Parcel Maps, Aerial Photographs, Local Tax Assessment Office, Local Municipalities, Cursory Field View, Comprehensive Plans.
Proposed Development Areas and Land Use	County Planning Commission, Aerial Photographs, Local Municipalities, Cursory Field View, Comprehensive Plans.
Community Facilities and Services	Local Municipalities, County Planning Commission, Parcel Maps, Cursory Field View, One Call, Local Utility Companies, bicycle/pedestrian facility mapping.
Parks, Section 6(f), Project 70 and Project 500 Resources	National Park Service Mapping and Land and Water Conservation Fund Listings, DCNR Listings and Mapping, PA Game Commission Mapping, USGS Mapping, Local Municipalities, County Planning Commission, Courthouse, Parcel Maps, Cursory Field View, Comprehensive Plans.
Cemeteries	Local Municipalities, USGS Mapping, Aerial Photographs, Cursory Field View.
Potential Air and Noise Sensitive Receptor Sites	Preliminary Engineering Plans, Subdivision Plans, Aerial Photographs, Cursory Field View.
Potential Hazardous, Residual, or Municipal Waste Sites	PA DEP 100 and 300 Lists, EPA CERCLIS, Cursory Field View, Federal and State Records of Waste Site Inventories and Waste Management Permit Programs.

NOTE: For potential BRPA applicable projects, while the documentation requirements for environmental clearance are different, the use of the BRPA does not alter the engineering and environmental scoping process. Document potential BRPA projects via the Department's traditional scoping process in accordance with applicable Department requirements. All relevant resources and features must be considered and a Scoping Field View must be held. Prepare a Scoping Document in accordance with Department procedures. The Scoping Document will provide the foundation (can be electronically transferred into) for the BRPA via the CE Expert System.

NOTE: Preparation of the Scoping Document should mainly involve transfer of information from the highest level of pre-TIP screening form completed (and DSR, if prepared) into the CE Expert System and updating that information based on new information/changes that have occurred since the screening form was completed. The Scoping Document will then provide the foundation (can be electronically transferred into) for the CEE. The purposes of the Scoping Document are to identify potential environmental or engineering issues that need to be addressed in project development and to confirm the appropriate CEE level and/or NEPA class (EA or EIS.)

The engineering data and information (normally verified and completed by the Project Manager) includes:

- Project identification information
- An overall project description
- Project purpose and need (s)
- Anticipated right-of-way, utility and railroad involvement
- Project design criteria
- Existing and proposed roadway and/or structure geometrics
- Anticipated design exceptions
- Anticipated maintenance and protection of traffic measures
- Bicycle/pedestrian accommodations
- Anticipated project costs and schedule milestones

Verified engineering data and information contained within the latest pre-TIP screening form (and DSR, if prepared) populate the Scoping Document and provide the starting point for the scoping process.

NOTE: The Scoping Document must include a description of the purpose and project need(s). Refer to *Publication 319, Needs Study Handbook,* for more information and guidance on purpose and need.

NOTE: Although minor projects that fall under the classification of CEs do not include an evaluation of alternatives, those that involve design exceptions may benefit from the evaluation of measures of effectiveness. Measures of effectiveness may be included in the design exception evaluation to support the selection of the proper solution. (More information on measures of effectiveness can be found in Publication 10C, Design Manual Part 1C, *Transportation Engineering Procedures*.)

Environmental data and information is typically verified and completed by environmental staff. Similar to the engineering section, environmental data and information contained within the latest pre-TIP screening form (and DSR, if prepared) prepared for the project, are used to populate the Scoping Document. The environmental portion of the Scoping Document includes a section to describe the involvement and required analyses for resources and the anticipated level of impacts and potential mitigation measures associated with the project. If a resource is present, verify whether or not an impact is anticipated and indicate the supporting documentation that will need to be prepared to complete the CEE.

NOTE: Fill out as much of the Scoping Document as possible before the Scoping Field View utilizing the information from the pre-TIP process phases contained within the pre-TIP screening form (and DSR, if prepared). Information filled out before the Scoping Field View need only be verified during the Scoping Field View.

3. Assemble Multi-Disciplinary Scoping Team and Coordinate Scoping Field View. The District's Planning and Programming Manager or Project Manager works with the District's Functional Unit Managers (see Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*) in assembling the scoping team. The scoping team should include appropriate PennDOT District and Central Office staff with FHWA for potential CE Level 2, EA, and EIS projects, any Federal Oversight projects, and projects with potential impacts to Section 4(f) and Section 6(f) properties (see Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 3). PennDOT and/or consultant staff from the following disciplines should also be included on the scoping team as appropriate for the project: Environmental; Community Relations/Communications; Roadway; Right-of-way; Construction; Geotechnical; Traffic; Contract Management; Bridge; Utilities; and Maintenance. MPO/RPO and Agency Coordination Meeting (ACM) staff should be invited to participate as appropriate.

The District Planning and Programming Manager or Project Manager is responsible for coordinating/scheduling the Scoping Field View, unless delegated to another party. It is recommended that a minimum of two weeks' notice be provided to scoping team members in advance of the Scoping Field View.

If cultural resources could be impacted by the project, a Department CRP must be invited to the Scoping Field View and consulted. The District Environmental Manager is responsible to coordinate with the CRP and provide relevant information ahead of time. Refer to the Pennsylvania FHWA/PennDOT Section 106 Programmatic Agreement (January 29, 2010) for details on cultural resources and project review. If the CRP is unable to attend the Scoping Field View, he or she should conduct a separate field view on his or her own. CRPs are encouraged to attend the official Scoping Field View whenever possible. If warranted, the SHPO, the Pennsylvania Historical and Museum Commission (PHMC), may be invited to the Scoping Field View. For enhancement projects, PHMC should be notified that the project is an enhancement, and their enhancement reviewer should specifically also be invited. Additional guidance on assembling the scoping team and coordinating the Scoping Field View can be found in Publication 10C, Design Manual Part 1C, *Transportation Engineering Procedures*, Chapter 2.

Scoping Field Views for projects that may involve potential Section 4(f)/Section 2002 use (may be *de minimis*), must be coordinated with a HDTS Project Development Engineer (PDE). Although the PDE may choose not to attend Scoping Field Views for CEE Level 1a projects, consideration should be given to including PDEs when scoping Level 1a projects. Because of their experience scoping projects, PDEs can provide valuable insights and recommendations to the Planning and Programming Manager or Project Manager.

All Federal actions that may involve a Level 2 CEE, involve Federal Oversight, as per the Stewardship and Oversight Agreement (Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*), Appendix C and projects with potential impacts to Section 4(f) or Section 6(f) properties must also coordinate with FHWA in the scoping activities. Once contacted, the HDTS will coordinate Scoping Field Views for projects that may involve Level 2 CEEs or Federal Oversight with the Environmental Policy and Development Section (EPDS) and with FHWA accordingly.

4. Scoping Field View and the Scoping Document. During the Scoping Field View, the Scoping Document should be reviewed and completed by verifying pre-populated information drawn from the latest pre-TIP screening form (and DSR, if prepared). Prior completion of information can expedite completion of the Scoping Document and allow the project team to concentrate on site characteristics and project circumstances during the Scoping Field View. Engineering considerations that should be reviewed, discussed, documented and validated at the Scoping Field View should include but not be limited to the following:

- Project description
- Project purpose and need(s)
- Anticipated right-of-way, utility, railroad and PA Turnpike involvement
- Proposed design criteria
- Existing and proposed roadway and structure geometrics
- Anticipated design exceptions
- Anticipated maintenance and protection of traffic measures
- Bicycle/pedestrian accommodations

- Transit issues
- Anticipated project costs
- Project schedule milestones

Environmental resources that should be reviewed, discussed, documented and validated at the Scoping Field View should include but not be limited to the following:

- Streams, rivers and watercourses
- Wetlands
- Federally or State listed T&E species
- Cultural resources
- Section 4(f) / Section 2002 resources
- Water trails
- Navigable waterways
- Floodplains
- Hazardous, residual or municipal waste sites
- Section 6(f), Project 70 and Project 500 properties
- Agricultural resources
- Air and Noise impacts
- Socioeconomic considerations

A discussion should be initiated at the Scoping Field View to determine how the resource agencies and the public should be involved in the project and documented in the appropriate section of the Scoping Document. Note the recommended number and type of public involvement activities to be conducted. Refer to Publication 295, *Project Level Public Involvement Handbook*, for guidance on public involvement techniques. Public involvement for CEs can vary widely – from very limited activities/efforts for the simplest Level 1a CEs to fairly complex for the larger Level 2 CEs. The public involvement activities should be tailored to the specifics of the particular project.

NOTE: In addition to NEPA process requirements for public and agency involvement, other laws and regulations include specific requirements for engaging the public and resource agencies. NEPA should be conducted as an "umbrella" process, addressing all regulatory requirements within its framework. As such, it is important to ensure that agency, tribal, and public coordination, as required by these other applicable regulations, is incorporated into the process.

During the development of minor projects, keep the public informed of project design activities through PennDOT's ongoing community relations program. Notify regional/local planning organizations of any public meetings that will be held for CE projects in their area.

For projects having the potential to affect sensitive areas or generate controversy on environmental grounds, the Project Manager should make an effort to coordinate with those affected by the project to avoid or minimize environmental effects, controversy, and delays. Circumstances that may warrant special public involvement efforts include, but are not limited to:

- Changes in travel patterns and accessibility (detours, lengthy traffic control plans, installation of median barriers, installation of ramp metering devices, bicycle/pedestrian accommodations and ADA compliance etc.);

- Construction activities in developed areas and along business and commercial routes (removal of trees within the right-of-way, construction performed in multiple stages, temporary access limitations, etc.);

- Construction activities that may affect historic properties;

- Potential uses of Section 4(f) resources;

- Work activities in or affecting minority and low-income communities;
- Strip right-of-way acquisitions affecting an adjacent property's usage;
- Displacements of people or businesses; and
- Lane reductions or closures that either directly or indirectly lead to substantial traffic rerouting.

Public involvement efforts may include meetings with affected property owner(s), public officials meetings, meetings with emergency service providers and other community leaders, meetings with historic societies or preservation groups, workshops, open houses or plans displays, media announcements, etc.

NOTE: When meeting with potentially affected property owners, it is important not to discuss any specific right-of-way needs, as insufficient information is available at the Scoping stage to document right-of-way acquisition with any degree of certainty.

NOTE: Context sensitivity emphasizes the broad nature of solutions to transportation needs by focusing on enhancing the quality of life across the Commonwealth for transportation users, communities and the surrounding environment. Early involvement of the community in project delivery ensures that local perspectives and concerns are represented. The community's continued participation assists in developing solutions that are sensitive to the context of its surroundings while responding to transportation needs with a minimum impact to the environment. By working together throughout project delivery, we can ensure that transportation improvements will enhance the quality of life of the community.

Summarize in the Scoping Document the public involvement efforts completed to date and the efforts anticipated to be needed during design. Include details of the public involvement activities in the Technical Support Data.

Use information verified during Scoping to confirm the appropriate class of action and, if appropriate, level of CE for the project.

Retain associated data and study materials in the Technical Support Data at the Originating Office. In addition, the level of PDE involvement in the design review process should be documented in the Scoping Document.

Level 1a CEEs may not require Scoping Field Views. For Level 1b, BRPA or Level 2 CEE projects, and those Level 1a CEEs where a Scoping Field View is warranted, document all known information in the Scoping Document at the time of scoping.

NOTE: For projects that may involve Level 1a CEs, during scoping, the Project Manager should work with the Environmental Unit to evaluate the potential for environmental impacts despite the activity being listed as a Level 1a CE. There are situations when Level 1a activities ***may*** involve environmental resources with the potential for some degree (less than significant) of impact. When potential impacts are discovered, the Level of CEE to be completed may change to a Level 1b or a Level 2.

5. Complete the Scoping Document. It is expected that all team members including the CRP, when required, will have scoped the project within two weeks of the official Scoping Field View to ensure that their input can be incorporated into the Scoping Document. It is critical that team members provide all their comments and recommendations concerning the Scoping Document within four weeks of the official Scoping Field View to the Planning and Programming Manager or Project Manager, who will be responsible for documenting the formal Scoping Field View utilizing the Scoping Document in the CE Expert System.

The final text field of the Scoping Document is for recording meeting notes, observations, and decisions not captured elsewhere on the form (including notes on resources where potential impacts require further research). Do not keep a separate Scoping Field View minutes document. The Planning and Programming Manager or Project Manager may circulate a copy of the Scoping Document to Scoping Field View participants for review

after their input has been incorporated into the Scoping Document and before the Scoping Document is submitted for review/approval.

The Planning and Programming Manager or Project Manager should verify that all necessary scoping information is obtained from all scoping team members including the CRPs within four weeks of the official Scoping Field View and that this information is incorporated into the Scoping Document within six weeks of the official Scoping Field View.

When the Scoping Document is substantially complete, the appropriate HDTS PDE should be notified to afford the PDE the opportunity for review and comment prior to submission.

Submit the Scoping Document for review/approval through the CE Expert System within six weeks of the official Scoping Field View.

The approval process for Scoping Documents varies by the anticipated project complexity as identified in the Scoping Document as presented in Table 3.6.

TABLE 3.6
SCOPING DOCUMENT APPROVAL PROCESS

Federal Funds	Federal Oversight	Complexity[1]	EM Concur	HDTS Concur[2]	FHWA Concur[2]	EM Approve
N	N	Minor				✓
		Moderate	✓	✓		✓
		Major	✓	✓		✓
Y	N	Minor				✓
		Moderate	✓	✓	✓*	✓
		Major	✓	✓	✓*	✓
Y	Y	Minor	✓		✓	✓
		Moderate	✓	✓	✓	✓
		Major	✓	✓	✓	✓

[1] Refer to the project complexity guidelines in Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Section 2.1.

[2] Follow the procedures in Section 3.2.A.3 (above) for coordination with HDTS and FHWA regarding their attendance at scoping field views and the determination of the appropriate level of environmental documentation.

*Only Level 2 CE, EA, or EIS

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The CE Expert System will generate notifications to each of the participants in the review and approval process sequentially (Table 3.6). Each entity will have the opportunity to concur/approve the Package or request revisions. If revisions are requested, they should be made and the Package Document can then be resubmitted for each appropriate concurrence/approval.

Upon approval, the Scoping Document will be moved to the "Approved Documents" (also referred to as the Archive) database in the CE Expert System and will be available for public viewing.

NOTE: For various reasons projects may be delayed or a substantial amount of time lapses between the Scoping Field View and the creation of a CEE in the CE Expert System. In those circumstances where three years or more have lapsed, it is advised that the project team revisit the area and either confirm that no substantial changes have occurred since the Scoping Field View or that substantial changes have occurred and note those changes in the "Remarks" field of the appropriate CEE form (A: Gen or BRPA Matrix).

3.3 CEE PREPARATION

Use of the CE Expert System to prepare the CEE provides thorough consideration of relevant issues while avoiding time and effort spent providing information when there is no involvement of specific resources. The CE Expert System assures that all possible impacts are given consideration and provides consistency for preparers, reviewers and those ultimately responsible for approving the documentation/making the NEPA decision. To achieve prompt and efficient review and approval, include enough narrative on key issues to make the CEE a readable and coherent document.

NOTE: The CEE Form (paper version) is available through EPDS; however, its use should be the exception rather than the rule. HDTS should be consulted to determine whether use of the paper version of the CEE Form is appropriate.

The CE Expert System allows the user to create an Evaluation (CEE) from the approved Scoping Document. When the CE Expert System creates the Evaluation or BRPA from the approved Scoping Document, it automatically transfers relevant information to the new CEE. To create an a CEE from a Scoping Document, find the Scoping Package in the Approved Documents database, open, and choose the "Create Evaluation" button at the top of the Package Document.

NOTE: A CEE can also be created "from scratch", rather than from an existing Scoping Document. However, by using the existing Scoping Document, information gathered during Scoping will automatically be populated in the CEE; thereby reducing time and effort during the CE process.

A. Complete the BRPA. While the documentation requirements for NEPA approval are different for projects where this PA applies, the use of this PA does not alter the engineering and environmental (E&E) scoping process. Potential projects must be documented via a scoping process in accordance with applicable PennDOT requirements. All relevant resources and features must be considered, and a scoping field view must be held in accordance with applicable PennDOT procedures. Users document project scoping in the CE Expert System using the current scoping form or format.

The use of this PA requires the collection of traditional engineering and environmental data to support the design process. Traditional data includes natural resources studies (wetlands, streams, water quality, threatened and endangered species, etc.), cultural resource studies (historic structures, archaeology), and socioeconomic resources evaluation (community services/facilities, parks, agricultural resources, etc.), as well as engineering design components.

Once that data has been collected and analyzed, and the preliminary design completed, complete the "Bridge and Roadway Programmatic Agreement Applicability Matrix" (appendix A of the PA). The CE Expert System has been modified to record and report projects approved under this PA. To create BRPA packages, select the "Bridge and Roadway Programmatic Agreement" option in the classification field on a new package document. Enter other relevant data such as Federal Project Number (FPN) and MPMS information before clicking the "Generate" button.

Once the package is generated, one or more BRPA applicability matrix forms are created. An applicability matrix form will automatically be created for every structure and roadway associated with every MPMS project within the BRPA package.

For projects with logical termini and independent utility that consist of multiple activities from one or more parts of the PA (i.e., a project on a single stretch of roadway including both roadway and bridge work), document the project (and all its activities) within one single BRPA applicability matrix.

Use multiple BRPA applicability matrices for projects that have their own individual logical termini and independent utility, but that are grouped together as single MPMS "projects." For example, an MPMS project with three bridge replacements located in different areas of a county requires three separate BRPA applicability matrices, since each bridge replacement has its own logical termini and independent utility.

The applicability matrix poses a series of questions related first to the scope of the work and second to the potential impacts of the project. A completed applicability matrix serves as documentation that the proposed activity is in fact consistent with the requirements of the PA.

Complete the project information and project description sections of the applicability matrix by including the following:

- Specific action(s) being proposed from the lists of activities in the PA (Part A Stipulation 1, Part B Stipulations 1, 2 and/or 4 and/or Part C Stipulation 1);
- Limits of work;
- Scoping field view date;
- Project purpose and project need(s);
- Written narrative of the proposed activity(s); and
- Any anticipated need for temporary easements or permanent right-of-way acquisition.

The part, stipulation, and subcategory and its description (e.g., Act B2-4 Approach slab repair) must be provided in the "Description of Activity" field. If there are multiple activities, clearly document all included activities.

The resource analysis section of the applicability matrix focuses on specific resource impacts of the proposed action(s). All proposed projects authorized under the PA are CE level actions and therefore shall have no significant impacts. For each listed resource, indicate "yes" if the resource is present and "no" if it is not present. (For historic properties or archaeological resources, indicate either "No Adverse Effect or No Historic Properties Affected" (noting the standard treatment, if applicable) or that the project will "meet the requirements of Appendix C of the Section 106 Delegation Programmatic Agreement", noting the requested information regarding the exemption.)

If potential impacts will result from the project, briefly discuss the impacts and related commitments to minimize or mitigate. Attach additional documentation as required per the "What are required attachments for packages?" FAQ in the CE Expert System to document impacts and any mitigation measures. Maintain any other supporting studies conducted and/or documentation prepared such as wetland delineation reports, Section 106 documentation, threatened and endangered species coordination, etc. in the technical support data file. For specific guidance on whether a Pennsylvania Natural Diversity Inventory (PNDI) search is required for a project, refer to Publication 546, *Threatened and Endangered Species Desk Reference*, Section III-B.

The individual(s) responsible for preparing the forms shall be identified in the "Prepared By" section.

Processing

Like all other CE Expert System forms, complete and verify the package and associated documents online. Include relevant supporting documentation as attachments as required per the "What are required attachments for packages?" FAQ in the CE Expert System. When the matrix (or matrices) is complete, submit the package in the CE Expert System, and the associated District Environmental Manager (EM) or designee (as defined in the administrative conditions of the PA) receives an email notifying him or her that the package is available for their review.

Upon completion of the form, the EM (or designee) reviews the information to ensure compliance with the terms and conditions of the PA and to independently verify that the project:

- Does not result in significant environmental impacts,
- Does not result in substantial controversy on environmental grounds,
- Does not have significant impacts on properties protected by Section 4(f), and
- Does not result in any inconsistencies with any Federal, state or local law, requirement or administrative determination.

The EM (or designee) can request revisions if necessary. Once the EM (or designee) is satisfied that the project as documented is appropriate under this PA, he or she "approves" the package using the "Mark as Applicable" button. The CE Expert System then permanently archives the package, making it available to the public.

The EM's (or designee's) concurrence that the project meets the stipulation and criteria of the BRPA constitutes NEPA approval for the proposed activity. Although the date of the approval of the PA (October 9, 2012) shall be listed as the formal NEPA approval date for the project, the applicability concurrence date is the date that the CE Expert System automatically sends to ECMS for the project development checklist.

B. Complete the CEE. Complete required parts of the CEE that were not transferred from the Scoping Document, and verify data obtained during the scoping process. All necessary supplemental documentation should be retained in the Technical Support Data or attached to the CEE. Complex CEEs may require additional narrative to describe overall impacts and highlight key issues, such as avoidance and mitigation measures.

NOTE: For Level 1a CEE projects that meet the description of Items No. 1, 5, 10, 13, 16, 17, or 20 in Table 3.1A, the only NEPA documentation required is the placement of the Item Number on the Form D-4232 (see Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 5 for more information). Form D-4232 is the Pennsylvania version of a Federal funding authorization request. No further NEPA documentation is required for these projects. An asterisk is shown beside these items on Table 3.1A.

The level of detail needed in the project description, project purpose, project setting, and distinct project features sections of Part A of the CEE will depend upon the complexity of the project and its surrounding environment. For straightforward, simple, routine projects, these sections should be very brief. For more complex, less common projects, where there is greater potential for involvement of environmental effects, more detailed information should be provided. Projects involving detours, T&E species, certain noise impacts, Section 6(f), Section106, Section 4(f) and Section 2002 resources impacts may require attachments to the CEE such as: detour maps, PNDI agency coordination letters, FHWA approval letters for noise reports where abatement is required, Section 6(f) documentation, Section 106 concurrence letters/documentation, Programmatic Section 4(f)/Section 2002 Evaluation checklists, or FHWA approval letters for Individual Section 4(f) Evaluations. Guidance on documents that must be attached to the CEE can be found in the Frequently Asked Questions (FAQs) within the CE Expert System. Technical reports should be maintained in the Technical Support Data files.

C. Finalize Analyses and Documentation for Involved Resources. Resource involvement and the supporting documentation should be included in Part B of the CEE. Building upon the information and analyses already performed in pre-TIP process phases (Steps 1 to 5) and verified in scoping, analyses should now be finalized and documented for resources affected by the project. The avoidance and mitigation statements in the approved Scoping

Document should be reviewed to determine their applicability as the basis for the determination of avoidance and mitigation measures incorporated into the CEE (see Section 3.3.D).

Table 3.5 provides a list of environmental features that are typically evaluated for a transportation project and identifies sources that could provide information on that particular feature. Guidance for documenting frequently encountered resources that may need to be addressed during CEE preparation follows. Proper handling of these frequently encountered resources is crucial for efficient development of projects documented with CEEs. Resources that are not described in the following sections may also be evaluated and documented in accordance with current PennDOT policies.

NOTE: Links to a variety of environmental web pages for the sources of environmental data in Table 3.5 can be found on the CE Expert System homepage in the left navigation pane. This is not an all-inclusive list, but merely a reference to frequently used resource sites.

Cultural Resources

For Federal actions that have the potential to affect historic or archaeological resources listed or eligible for listing in the NRHP, consult with EPDS or the CRP and follow:

- Section 106 of the NHPA of 1966, as amended (16 U.S.C. 470f).
- 36 CFR §800, "Protection of Historic Properties," Advisory ACHP Regulations, as amended.
- "Recommended Approach for Consultation or Recovery of Significant Information from Archaeological Sites," ACHP Guidance, 1999.
- Act No. 1988-72, Title 37, the State History Code (37 Pa. C.S. 101-906).
- Publication 689, *Cultural Resources Handbook.*

NOTE: Be aware that requirements under Section 106 for public involvement, tribal coordination and coordination with Consulting Parties have been critical to efficient CE project delivery. The level of effort on public involvement, including tribal and Consulting Parties coordination, should be commensurate with the complexity of the project and its effects on cultural resources.

Section 4(f) Resources

Properties subject to Section 4(f) of the U.S. Department of Transportation Act of 1966 include publicly owned public parks, recreational areas, wildlife or waterfowl refuges, and any significant historic sites. Section 4(f) permits the use of such land for a transportation project only when:

- There is no "feasible and prudent" alternative to the use of the Section 4(f) property; and
- The project includes all possible planning to minimize harm (as defined in 23 CFR §774.17) to the Section 4(f) property resulting from the use.

Or

- The use, including any measures to minimize harm (such as any avoidance, minimization, or enhancement measures) will have a *de minimis* impact on the property.

In general, Section 4(f) is triggered when a project subject to approval by FHWA, or another USDOT agency, "uses" a resource protected by Section 4(f). "Use" has been defined to include an actual use from a Section 4(f) resource (incorporation of property from the 4(f) resource into the transportation project), including *de minimis* use, or the "constructive use" of a Section 4(f) resource (proximity impact that adversely affects the features or attributes of the 4(f) resource).

If a Section 4(f) resource is used by the alternatives in a transportation project, and that use is not *de minimis*, FHWA must determine if a Feasible and Prudent Total Avoidance Alternative exists. If there are no Feasible and Prudent Total Avoidance Alternatives, FHWA must determine which alternative causes the least overall harm to Section 4(f) resources. This entire process must be documented in a Section 4(f) Evaluation, which must be reviewed by PennDOT and approved by FHWA for Federal-aid projects and projects involving other USDOT actions. In addition to identifying the affected Section 4(f) resources in the CEE, separate Section 4(f) Evaluation documentation must be complete and either the approved Section 4(f) checklist or the FHWA approval letter for the Individual Section 4(f) Evaluation must be attached to the CEE.

The latest version of the checklists and the *Alternative Processing Procedures for Section 4(f) Evaluation Guidance* can be found in the CE Expert System Help Database. Publication 349, *Section 4(f) Handbook,* contains guidance on the preparation of Section 4(f) Evaluations. Guidance on submitting Programmatic and Individual Section 4(f) Evaluations in conjunction with the CE Expert System can be found in the FAQs link at the bottom of the CE Expert System home page. For additional guidance, consult with HDTS.

Section 2002 Resources

Section 2002(a)(15) of Pennsylvania Act 120 of 1970 (71 P.S. 512(a)(15)) states that,

> "No highway, transit line, highway interchange, airport, or other transportation corridor or facility, shall be built or expanded in such a way as to use any land from any recreation area, wildlife or waterfowl refuge, historic site, State forest land, State game land, wilderness area or public park unless (i) there is no feasible and prudent alternative to the use of such land, and (ii) such corridor or facility is planned and constructed so as to minimize harm to such recreation area, wildlife or waterfowl refuge, historic site, State forest land, State game land, wilderness area or public park."

Section 2002(b)(2) indicates that it must be shown that there are no feasible and prudent alternatives to the effects of the project and that all reasonable steps have been taken to minimize the effects. Guidance for the completion and circulation of a Section 2002 Evaluation is contained in Publication 349, *Section 4(f) Handbook.*

NOTE: Section 2002 of PA Act 120 applies to <u>all</u> transportation projects. Section 4(f) applies only to those projects that involve a USDOT action, such as Federal funding and/or point of access approval. On projects involving USDOT action and the use of Section 4(f) resource(s), Act 120 requirements are generally satisfied by including the Act 120 review agencies in the distribution of the Federal environmental document and publishing the Secretary's findings in the *Pennsylvania Bulletin*. For projects that do not involve USDOT actions, but that use Section 2002 resources, a Section 2002 Evaluation must be completed.

Section 6(f), Project 70, and Project 500 Resources

Parks, recreation areas, and state game lands that have been identified may have been purchased using grant money from the Federal Land and Water Conservation Fund [Section 6(f)] or from various state grant programs (Project 70 and Project 500). Properties that have been purchased using grant money from these programs may have addition requirements or restrictions associated with their use on a transportation project and should be identified as early as possible. There are two resources that can be used to preliminarily identify whether a park or recreation resource may be a Section 6(f) resource. The National Park Service (NPS) maintains an online list of Section 6(f) properties within the Land and Water Conservation Fund web page. The Department of Conservation and Natural Resources (DCNR) also maintains an online GIS-based map to find locations by county, address, or acquisition name. Section 6(f) resources have links to PDF files that typically include the grant application and a map of the property boundaries. The DCNR GIS-based map also has state grant information. If these resources identify the potential use of Section 6(f) funding, approval is required from NPS. Coordination with NPS is conducted through DCNR, the state liaison. For properties that used Project 70 or Project 500 state grants, coordination with DCNR is necessary and deed research may be helpful.

Hazardous, Residual, or Municipal Waste Sites

In accordance with Publication 281, *Waste Site Evaluation Procedures Handbook,* the potential for encountering waste materials on a project should be evaluated by reviewing background information and observing the site conditions during the Scoping Field View. Environmental covenants should also be researched. Guidelines for conducting waste site evaluations are provided in Publication 281, *Waste Site Evaluation Procedures Handbook*. Documentation of the waste site evaluation, as per Publication 281, *Waste Site Evaluation Procedures Handbook*, must be included in the Technical Support Data and summarized in the CEE.

If wastes are to be handled during the project, a summary of the coordination with the Pennsylvania Department of Environmental Protection (PA DEP), if available, should be included in the Technical Support Data and referenced in the CEE.

Wetlands

Documentation such as a Wetland Delineation Report and a Functional Assessment Report, if required, should be included in the Technical Support Data and summarized in the CEE. See Publication 325, *Wetland Resources Handbook,* for more information.

Surface Waters

Surface waters are identified from U.S. Geological Survey (USGS) mapping, aerial photographs and field surveys. The water quality of the streams should be determined through STORET data, Pennsylvania Fish and Boat Commission (PFBC) file data and PA DEP's Chapter 93 classification, and documented in the CEE. High quality and exceptional value streams should be identified using PA DEP's Chapter 93 classification. Wild and stocked trout streams can be identified through coordination with the PFBC.

Floodplains

Floodplain areas should be identified from Federal Emergency Management Agency (FEMA) and USGS mapping. Note the 100-year floodplain boundaries (i.e., special flood hazard areas) and of regulated floodways (as delineated by FEMA) if present in the study area. If, after consultation with FHWA, it is concluded that the proposed action will result in a significant floodplain encroachment, and subsequently require a floodplain finding, an EIS will have to be prepared because an EIS is required for projects with significant impacts. Consult Publication 13M, Design Manual Part 2, *Highway Design*, Chapter 10 for additional floodplain information. Detailed hydraulic and hydrologic studies may also be completed as part of the engineering design.

NOTE: Pursuant to 23 CFR §650.105(q) "Significant encroachment" shall mean a highway encroachment and any direct support of likely base flood-plain development that would involve one or more of the following construction or flood-related impacts:

(1) A significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route.

(2) A significant risk, or

(3) A significant adverse impact on natural and beneficial flood-plain values.

"Support base flood-plain development" shall mean to encourage, allow, serve, or otherwise facilitate additional base floodplain development. Direct support results from an encroachment, while indirect support results from an action out of the base floodplain.

Geologic Resources

Geologic Resources should be identified through a review of county soil surveys and published literature from sources such as the Pennsylvania Topographic and Geologic Survey, U.S. Department of Agriculture, and the USGS. Public/private wells and sensitive aquifers should be noted. Geologic features which may affect construction of a project should be noted in the CEE.

Socioeconomic Resources

Impacts to socioeconomic resources should be analyzed and documented in the CEE. This would include residential and business displacements as well as impacts on regional growth, community cohesion, and community facilities and services such as recreational facilities, social facilities, emergency service providers, utility companies, schools, churches and cemeteries. Population data, including minority and low-income populations, should be identified in accordance with Executive Order 12898 ("Environmental Justice") and Title VI of the Civil Rights Act. Coordination should be undertaken with local public and municipal officials to identify their concerns and goals for the proposed project.

Threatened and Endangered Species

Designated Critical Habitat areas and Federal and State T&E species (listed and proposed species) should be identified through the PNDI Environmental Review Tool and agency coordination. Field studies to confirm the presence of a species, or any Designated Critical Habitat may or may not be necessary depending on the results of the database search and agency coordination. Agencies with jurisdiction over protected species include the DCNR, PFBC, Pennsylvania Game Commission (PGC), the U.S. Fish and Wildlife Service, and National Marine Fisheries Service. Species-specific approved surveyors may need to be called in to assist in identifying a certain species or its habitat. If a habitat assessment or species presence survey is conducted, a report or technical paper is typically prepared. Requirements of the Endangered Species Act must be met if a Federally-endangered/threatened listed or proposed species, or Designated Critical Habitat is present. Requirements of applicable State codes, such as the Game and Wildlife Code, the Fish and Boat Code, and the Conservation of Natural Wild Plants Code, must also be met for state listed species. Copies of correspondence regarding the presence/absence of T&E species should be attached to the CEE, and associated reports (if necessary) should be summarized in the CEE and included in the Technical Support Data. More information on T&E coordination can be found in Publication 546, *Threatened and Endangered Species Desk Reference.*

Agricultural Resources

Impacts to agricultural resources should be evaluated in accordance with Publication 324, *Agricultural Resources Evaluation Handbook,* which was developed in conformance with the following Federal and State laws and policies:

- 7 U.S.C. §4201, Farmland Protection Policy Act of 1981
- 4 Pa Code Chapter 7, §7.301 et seq., Agricultural Land Preservation Policy (ALPP), Executive Order No. 2003-2, March 20, 2003
- PA Act 1979-100, The Administrative Code of 1929 (71 P.S. 106)
- PA Act 1981-43, Agricultural Area Security Law (3 P.S. 901-915)

Documentation such as an ALPP Conformance Statement and/or AD-1006 Form (Farmland Conversion Impact Rating Form for federally funded projects) should be attached to the CEE or be included in the remarks section as appropriate. If productive agricultural land will need to be acquired for the project and the project does not meet the exemption clauses in PA Act 1979-100, then a Farmland Assessment Report may need to be prepared and an Agricultural Lands Condemnation Approval Board (ALCAB) Hearing may need to be held for approval to condemn the property. An ALCAB Hearing is a formal hearing which requires extensive preparation. Where amicable settlement cannot be reached for acquisition of productive agricultural land, ALCAB approval that the selected alternative is the most reasonable and prudent alternative must be obtained before condemnation proceedings can begin. If the evidence that the selected alternative is the most reasonable and prudent alternative is not strong or well

presented, it is possible that the Board may rule against the condemnation of the desired property. The Hearing, if held, would most likely be conducted no later than Final Design.

Air Quality

Projects have potential air quality impacts on a regional level and a local level. The regional ozone impact is cumulative in that all projects in an ozone nonattainment and/or maintenance area (region) must be analyzed as a whole at least once every two years when the TIP is updated. This analysis, called a conformity analysis, is conducted at the regional/local planning organization level with PennDOT's assistance. All projects in a nonattainment area must come from an approved (conforming) TIP.

Certain capacity adding projects in air quality nonattainment and maintenance areas must come from a Congestion Management Process (CMP). There are five Transportation Management Areas (TMAs) in Pennsylvania where a CMP analysis is developed for some capacity adding projects. These TMAs are Philadelphia, Pittsburgh, Lehigh Valley, Harrisburg, and Scranton.

Project level air quality impacts (hot spot analysis) are assessed with consideration for carbon monoxide, particulate matter (PM_{10} and $PM_{2.5}$), and Mobile Source Air Toxics associated with the project. Refer to Publication 321, *Project-Level Air Quality Handbook,* for further information on project level analysis.

Noise

Project level noise analysis is conducted to assess the potential for future highway traffic noise impacts on sensitive receptors in the study area. A scoping assessment is necessary to determine what level of noise analysis, if any, is required. The scope and magnitude of a project's noise analysis is not based on the size or complexity of the project or its NEPA classification. Rather, it is a function of the project's potential noise-related issues and impacts. Projects must be scoped to identify noise impacts and likely mitigation during the Preliminary Engineering/NEPA Decision Phase. Please refer to Publication 24, *Project Level Highway Traffic Noise Handbook*, for information on types of projects that require analysis and appropriate levels of analyses.

Temporary Impacts

Environmental resources may be impacted temporarily during construction of a project. A description of anticipated temporary impacts must be provided for each resource within their respective section of the CEE.

The CEE must also address the potential impact that planned detours will have on protected resources and the surrounding environment. Detours are addressed in Part A: Eng of the CEE (Traffic Control Measures). Detours should be clearly shown on a map and discussed, including provisions for pedestrians, bicycles, disabled and the elderly.

Permits

For protection of certain resources, permits are required. Part B, Section D of the CEE is the permits checklist. This checklist should be completed to identify any permits required for the project.

D. Determine Avoidance, Minimization, and Mitigation Strategies and Commitments. Depending on the anticipated environmental effects of a proposed project, implementation of avoidance, minimization, or mitigation strategies (in that order of priority) may be warranted. These strategies should be considered and developed at this step of the process to reduce the impacts on resources.

If impacts to a resource cannot be avoided or minimized through engineering design, mitigation should be considered. Coordination with FHWA and appropriate environmental agencies may be necessary in developing mitigation measures. Mitigation measures to consider will depend upon the specific impacts of the project. Some resources, such as wetlands, Section 6(f) resources, and Section 106 properties, have specific requirements for mitigating unavoidable impacts. With other resources, mitigation requirements may not be as well defined. When mitigation is necessary, mitigation commitments must be documented in Part A under the individual resources. This information will be automatically transferred to the mitigation summary page, Part B, Section E, of the CEE.

Additionally, there are commitments that are not necessarily directly associated with impacts. Rather, these commitments can be made to avoid impacts as part of the project design. Flexibility in design should be allowed to achieve context sensitive design (CSD). CSD applies to a transportation project's engineering design features, and may include features that help the project fit harmoniously into the community.

The official mitigation commitments are entered into the Environmental Commitments and Mitigation Tracking System (ECMTS) for tracking through the Final Design and Construction Phase. The Originating Office will prepare a draft ECMTS Report that includes a Mitigation Tracking System Matrix. A Level 1a CEE document, which does not include Part B, Section E (Resources to be Avoided and Mitigation Measures), is prepared for projects that are anticipated to have no environmental impacts and would not require an ECMTS Report. It is also possible that a project requiring the preparation of a Level 1b or Level 2 CEE document may not include specific environmental commitments and therefore not require the preparation of an ECMTS Report. For those project circumstances, a statement should be added to the CEE document (under Part B, Section E) to explain that no specific mitigation commitments are anticipated and an ECMTS Report will not be prepared for the project. The Environmental Consultant (or in-house staff as designated by the District) who is responsible for the preparation of the project environmental review document will be responsible for the preparation of the ECMTS Report for those projects requiring the tracking of environmental commitments. See Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C,* Appendix T for more information on ECMTS.

NOTE: Mitigation commitments contained in Part B, Section E of the CEE, as well as ECMTS, are **commitments** of both PennDOT and FHWA and are agreed to and approved by the District Executive for Level 1 CEEs and by the Division Administrator of FHWA for Level 2 CEEs.

3.4 BRPA AND CEE REVIEW, CONCURRENCE, AND APPROVAL

In the final portion of the Preliminary Engineering/NEPA Decision Phase, a determination is made on whether to issue a NEPA decision on a project, allowing the project to move into the Final Design and Construction Phase where the plans, specifications and estimates for constructing the project are prepared, and right-of-way is acquired. At this point, inclusion of the fully-funded project on the TIP/STIP and if necessary the Long-Range Transportation Plan (LRTP) is also confirmed.

The BRPA and CEE review and approval process is an automated process that is initiated when the CEE Package is submitted. The CE Expert System automatically generates email notifications to required reviewers and the appropriate approval authority. The following text overviews the flow of the review process for BRPA and the various levels of CEE documentation.

For BPRA applicable projects, when the Applicability Matrix is complete in the CE Expert System, the package is submitted like all other CE Expert System packages to the associated District Environmental Manager or designee who will receive an email telling them the package is available for their review. The Environmental Manager can request revisions if necessary. Once the Environmental Manager is satisfied that the project as documented is appropriate under the BRPA, they "approve" the package using the "Mark as Applicable" button. The CE Expert System then permanently archives the package and makes it available to the public. Applicability concurrence date is based on the day the Environmental Manager clicks the "Mark as Applicable" button.

The Approval Authority for each level of CEE is:

- BRPA - District Environmental Manager
- Level 1a - District Environmental Manager
- Level 1b - PennDOT District Executive
- Level 2 - FHWA

PennDOT Central Office and/or FHWA review is not required for BRPA, Level 1a and 1b CEE approval; however, quality assurance reviews may be conducted by HDTS and/or FHWA as appropriate. Level 2 CEEs are reviewed by HDTS. Upon HDTS's concurrence, FHWA reviews and issues a final approval of the CEE.

NOTE: A District's Approval Authority for Level 1 CEs can be rescinded by FHWA or the Deputy Secretary for Highway Administration based on deficiencies found in process reviews, quality assurance reviews, or other evaluations. If a District loses CEE Approval Authority, Level 1 CEE documents must be transmitted to HDTS for approval. FHWA would continue to approve Level 2 CEEs.

A brief description of the review and approval process for the BRPA and each CEE level follows. Table 3.7 illustrates the review and approval process for CEEs. All supporting data for the BRPA or CEE must be contained in the Technical Support Data Files.

TABLE 3.7
BRPA/CEE APPROVAL PROCESS

	BRPA	CE Level 1a	CE Level 1b	CE Level 2
District Staff	Submit	Submit	Submit	Submit
District Environmental Manager	**Mark as Applicable**	**Approve**	Concur	Concur
Assistant District Executive			Concur	Concur
District Executive			**Approve**	
HDTS				Concur
FHWA				**Approve**

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A. Level 1 CEE Approval Process.

Level 1a* CEE

For projects which meet the description of Item Numbers 1, 5, 10, 13, 16, 17, or 20 of Table 3.1A, the only NEPA documentation required is the placement of the Item Number on the Form D-4232. An asterisk is shown beside these actions in Table 3.1A. For these Level 1a* CE actions, no other NEPA documentation is required, nor is there any additional approval processing required. If a user attempts to generate a package in the CE Expert System for a Level 1a* CE, the system will provide a message indicating that a D-4232 is all that is required and a package will not be created.

All other Level 1a CEEs (Items that do not have an asterisk in Table 3.1A)

For projects that are Level 1a CE actions as described in Table 3.1A, but do not have an asterisk beside the Item number in Table 3.1A, the following describes how they are processed. At a minimum, the preparer should complete the Package Document, Part A: Gen and Part C of the CEE. Upon completion and verification of each of the required pages, the Package can be submitted by District staff for District Environmental Manager review and approval. The District Environmental Manager approves the document by selecting the approve button at the top of the Package Document. The document is then officially approved and automatically moved into the approved documents (archive) database. Email notification of approval is automatically provided to the individual who submitted the package.

Level 1b CEE

CEEs prepared for projects which qualify as Level 1b CEEs will require completion of Part A, Part B, and Part C of the CEE in their entirety. All supporting data must be included in the Technical Support Data, or, as appropriate, attached to the CEE. (The CEE indicates relevant documentation that **must** be attached.) Upon completion and verification of each of the required pages and associated data, District staff can submit the document into the review process from the Package Document. The CE Expert System will generate notifications to each of the participants in the review and approval process sequentially (Table 3.7). The review sequence is Environmental Manager, Assistant District Executive, and District Executive. Each entity will have the opportunity to concur/approve the Package or request revisions. If revisions are requested, they should be made and the Package Document can then be resubmitted for each appropriate concurrence/approval. Once the District Executive approves the Level 1b CEE by selecting the approve button at the top of the Package Document, the document is then officially approved and automatically moved into the approved documents (archive) database. Email notification of approval is automatically provided to the District Environmental Manager and the Assistant District Executive reviewer.

B. Level 2 CEE Approval Process. CEEs prepared for projects which qualify as Level 2 CEEs will require completion of Part A, Part B and Part C of the CEE in its entirety. All supporting data must be included in the Technical Support Data, or, as appropriate, attached to the CEE. (The CEE indicates relevant documentation that **must** be attached.) Upon completion and verification of each of the required pages and all associated data, the District staff can submit the document into the review process from the Package Document. The CE Expert System will generate notifications to each of the participants in the review and approval process sequentially (Table 3.7). The review sequence is Environmental Manager, Assistant District Executive, HDTS, and then FHWA. Each entity will have the opportunity to concur/approve the Package or request revisions. If revisions are requested, they should be made and the Package Document can then be resubmitted for each appropriate concurrence/approval. Once the FHWA approves the Level 2 CEE by selecting the approve button at the top of the Package Document, the document is then officially approved and automatically moved into the approved documents (archive) database. Email notification of approval is automatically provided to the District Environmental Manager, the Assistant District Executive, and the HDTS reviewers.

If a Section 4(f) Evaluation was approved with the Level 2 CEE, the HDTS will provide the District Executive with the Act 120 approval.

NOTE: Projects with Section 4(f) or Section 2002 resource involvement, and projects for which a public hearing will be held, require Pennsylvania Act 120 agency review. Once the project is approved, HDTS will coordinate the publication of the environmental finding in the *Pennsylvania Bulletin*. (Public Hearings are not required for CEs and are rarely held for CE projects.)

C. Central Office Originated CEE Approval Process. For transportation projects originating from Central Office, the same procedures as described for other projects apply, except: the functions of the District Environmental Manager should be performed by the Section Chief of HDTS, the function of the Assistant District Executive should be performed by the Originating Office Bureau Director, and the function of the District Executive should be performed by the Director of BOPD. All other responsibilities and procedures should remain the same as those previously described.

D. Revise CEE Based Upon Review Comments. At each stage of the concurrence/approval process, the reviewer will have an opportunity to offer comments on the CEE Package. The CE Expert System includes a "Request Revision" function that the reviewer can invoke to provide comments on the CEE. Upon completion of comments, the CE Expert System sends these comments back to the user who originally submitted the CEE for approval. It is the responsibility of the original submitter to discuss these comments with the reviewer (if necessary) and make the necessary revisions. Once the revisions are complete, and the revised pages have been verified, the Package can once again be submitted into the review process. The revised Package will need to go through the entire review process again so that anyone who may have concurred with the Package previously, has an opportunity to review the changes to ensure that they concur with recent changes.

E. Approval Notifications. Upon final approval of the CEE by the Environmental Manager, District Executive, or FHWA (dependent upon the CE Level) the CE Expert System will generate an email notification that the document has been approved.

The following individuals receive automatically generated email notifications for each level of CEEs:

- BRPA - District Environmental Manager, the individual who submitted the package and if there is a potential need for an Act 120/Section 2002 finding HDTS
- Level 1a - Individual who submitted the package
- Level 1b - District Environmental Manager, Assistant District Executive reviewer, the individual who submitted the package and if there is a potential need for an Act 120/Section 2002 finding HDTS
- Level 2 - District Environmental Manager, Assistant District Executive, HDTS reviewers, and individual who submitted the package
-

The CE Expert System also includes a function to add additional email addresses to the list of those who receive automatically generated email notifications upon CEE approval.

There is no need to copy or distribute any approved CEEs as they reside in perpetuity in the CE Expert System and, upon approval, are accessible to everyone, including the public. However, reference to the package number, name, and MPMS number should be included in the Technical Support Data Files.

NOTE: The CEE (and Scoping Document) is a legal document available to the public through the CE Expert System. Supporting documentation is obtainable through a right-to-know request.

3.5 RE-EVALUATE CEE (IF NECESSARY)

A project and its accompanying approved CEE (or BPRA, if applicable) may need to be re-evaluated before any further approvals are granted by FHWA as described in 23 CFR §771.129. Re-evaluate Federal actions in light of the approved CEE under one or more of the following circumstances:

- There are changes in the proposed action that could potentially result in significant effects on the environment
- Unanticipated impacts have become known
- Changes to the proposed mitigation measures have been made
- Form D-4232 is being submitted for a major Federal authorization for the project (Final Design, Right-of-Way Acquisition, Utility Relocations, and Construction Authorization)

The required documentation depends upon revisions to regulations, the impacts, and the time that has elapsed since approval of the CEE.

- **If three years or less has elapsed** since approval of the CEE or the last major authorization **and no substantial changes** have occurred, the date of CEE approval must be placed on the new Form D-4232.
- For projects with reevaluations that take place **more than three years after approval** of a CEE (Level 1 or Level 2) or the last major authorization **and** the Environmental Manager determines that **no substantial changes** have occurred, the following reevaluation statement must be placed in the Form D-4232 to document the reevaluation:

  Based on the reevaluation of the proposed project there have been no significant changes in the proposed action, the affected environment, the anticipated impacts or the proposed mitigation measures since the original NEPA clearance was given.

  The preparer must also include a memorandum of concurrence from the District Environmental Manager in the Technical Support Data. The date of this memorandum will provide the date for Form D-4232.
- When potentially **substantial changes** have occurred (regardless of elapsed time since CEE approval), as per the determination of the Environmental Manager, a reevaluation document must be prepared. This document must address the changes in the proposed action or environmental conditions, as presented in each part of the CEE, and why the changes are not significant. The original CEE Package can be used as the basis for the reevaluation. The original Package should be located in the Approved Packages (Archive) link, and the "Create Re-Eval" link chosen. A new Package will be created which will contain all of the information from the previously approved CEE. That information should be reviewed and updated as necessary and all individual pages/documents should be re-verified. Use the check boxes and the associated editable fields within the Package Document to document the reason for the reevaluation, the individual pages/documents that were updated indicating what was changed and why, and confirmation of the reevaluation classification and level.
- When potentially substantial changes have occurred (regardless of elapsed time) the project class of action will need to be reevaluated if the changes result in potentially significant impacts. Coordinate with HDTS and FHWA to initiate preparation of an EA, EIS or EER.

The review, concurrence, and approval process for a reevaluation is the same as was required and used for the approved CEE. (See Section 3.4.A.) This process varies depending upon the level of CEE that was approved. After the review of the reevaluation is completed, the date of approval must be indicated on the next Form D-4232 submission.

CHAPTER 4

ENVIRONMENTAL ASSESSMENTS

4.0 INTRODUCTION

This chapter provides guidance and information for the Preliminary Engineering/National Environmental Policy Act (NEPA) Decision Phase of the Process for transportation projects determined to necessitate the preparation of Environmental Assessments (EAs). (Refer to the Process flowchart, Figure 1.1.) An EA is prepared for those projects for which the significance of impacts is not yet clearly known. More analysis is necessary to determine whether impacts are significant and whether an EIS will need to be prepared. As discussed in Chapter 2, impact significance is determined based on the context and intensity of the impact.

The information, data, and analyses performed in the pre-Transportation Improvement Program (TIP) phases (Steps 1 to 5) of the Process are the foundation for the NEPA process analysis. Scoping Documents for all projects of all classes of action are completed within the CE Expert System. When a Scoping Document is created, information from a project's Linking Planning and NEPA (LPN) Level 2 Screening Form auto populates the Scoping Document as a starting point.

4.1 ADMINISTRATIVE ACTIVITIES AND INTERNAL SCOPING

Once a project is programmed on the TIP and STIP, it is ready to begin the Preliminary Engineering/NEPA Decision Phase. The Originating Office (the "lead" District, Bureau, Office, or Agency responsible for administering, developing and implementing the given project) will initiate the project to begin the NEPA process, building analysis upon the information gathered in the pre-TIP process phases through the pre-TIP screening form and Detailed Studies Report (DSR), if required, for the proposal. Refer to Publication 10A, Design Manual Part 1A, *Pre-TIP and TIP Program Development Procedures* for more information about the pre-TIP screening form and the DSR.

Administrative Activities and Internal Scoping encompasses a variety of internal administrative and management activities, as well as cursory data gathering and coordination. The Originating Office will identify the Project Team, including the Project Manager and staff to assist with engineering and environmental studies, public and agency involvement and preparation of the EA. No detailed field work is generally done at this time, however, the project's Pre-TIP screening form and DSR should be reviewed, and an internal scoping field view can be held to confirm the pre-TIP information - the likelihood of significant impacts, the appropriate class of NEPA action, and engineering to pursue - to facilitate preparation of a scope of work and determine if consultant selection is appropriate.

A. Organize Department Resources. Identify and collect all relevant data from the pre-TIP process phases – the pre-TIP screening form, DSR, and other information that will serve as a foundation for the NEPA analyses. The state route, U.S. route number, or common road or project name assigned during the pre-TIP process phases is generally retained for the life of a project, but these designations may be refined periodically as the study progresses. Create an administrative reference file of all documents related to the project, such as correspondence, memoranda, transmittals, meeting minutes, and telephone logs. Original copies of approvals, internal and external correspondence and documentation that bear upon project decision-making should be retained by the Originating Office. The documentation should, to the extent practical, be maintained in an electronic format to facilitate inclusion with the EA or other long-term retention.

A multidisciplinary team (sometimes referred to as the Design Team) should be identified. (Information regarding selection/development of the Design Team can be found in Publication 10C, Design Manual Part 1C, *Transportation Engineering Procedures*.) The Design Team should be selected based on the task plan, budget, and project time estimates to ensure proper human resources are available. Keep in mind that some environmental investigations will be restricted by the seasons. Planning must take into consideration time constraints and budgetary parameters. The project schedule is to be maintained using Open Plan scheduling software. (See Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 3 for more information on project scheduling.)

B. Confirm Project Parameters. The Originating Office, in coordination with FHWA, the Highway Design and Technology Section (HDTS), and the Environmental Policy and Development Section (EPDS), should review and confirm the following basic elements from the pre-TIP process phases of the Process:

- Coordination with local, municipal, county, or regional planning, land use and zoning authorities has been performed.
- The project's purpose and need has been established.
- The project's measures of effectiveness have been evaluated as per Publication 10C, Design Manual Part 1C, *Transportation Engineering Procedures.*
- The project has logical termini and independent utility or independent significance. Criteria associated with logical termini are listed in 23 CFR §771.111(f) (1)-(3).
- A study area has been designated. It should be large enough to provide for the development of alternatives to meet the project purpose and need, and for meaningful evaluation of environmental effects.
- Any pre-TIP alternatives screening should have been performed in accordance with guidance provided in Publication 10A, Design Manual Part 1A, *Pre-TIP and TIP Program Development Procedures*.
- Proper consideration of all transportation modes.
- Coordination with the public and resource agencies occurred.
- Potential opportunities for mitigation were identified.

At this point, it is appropriate to begin drafting a preliminary list of engineering and environmental study tasks to be completed by the Originating Office or its consultant(s). Further internal scoping activities will focus primarily on preparing a detailed Scope of Work and refining that Scope of Work as necessary. Where pre-TIP information, analyses, or documentation is lacking, incomplete, or no longer accurate, update the analysis, or conduct a new analysis to confirm the information/data to be included in the scope of work.

C. Verify Scoping. A preliminary determination of the NEPA class of action is made prior to a proposal being programmed on the TIP/STIP. During the Pre-TIP process phases, a screening field view may have been held and at least one screening form was completed (see Publication 10A, Design Manual Part 1A, *Pre-TIP and TIP Program Development Procedures*). Information gathered and analyses performed in pre-TIP process phases form the foundation for scoping in the NEPA process and subsequent analysis for the project. The Scoping Document is one tool that can help bring engineering and environmental considerations together, based upon information already documented and analyses already performed in pre-TIP phases. Scoping Documents for all projects of all classes of action are completed within the CE Expert System. When a Scoping Document is created, information from a project's Linking Planning and NEPA (LPN) Level 2 Screening Form auto populates the Scoping Document as a starting point as long as the LPN Level 2 form has an MPMS number and is in the "Recommended to LRTP/TIP" or "On LRTP/TIP" status. Verification of this information must be performed in order to accept this information as the basis for scoping in NEPA.

The following questions need to be considered when verifying data and/or analyses from pre-TIP process phases:

- Was a scoping field view completed in the pre-TIP phase? Who participated in the field view?
- How much time has passed since the studies from pre-TIP phases and corresponding decisions were made?
- Were the future year policy assumptions used in the pre-TIP phases of the Process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process?

- What changes have occurred in the area since the time the pre-TIP data was gathered and analyses were completed?
- Are the information and analyses still relevant/valid?
- Have most cost effective solutions been explored?

Using professional judgment, the District Environmental Manager will make the final determination of whether the pre-TIP information is still valid and identify what should be examined at the scoping field view to update and/or verify study area information. This determination is made based on the above bulleted questions, as well as the complexity of the project (see Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 2), completeness of information gathered previously, timeframe between pre-TIP work and start of NEPA, etc. Information contained within the pre-TIP screening form and DSR is brought into the project's Scoping Document. Additionally, note in the Remarks section of the Scoping Field View Form whether a field view was held in the pre-TIP process phases. A scoping field view should always be held for projects where an EA will be prepared.

To aid in the verification of data, Table 4.1 provides a list of environmental features that were typically evaluated for a transportation project in the pre-TIP process phases and identifies potential sources that could provide information on that particular feature.

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TABLE 4.1
POTENTIAL SOURCES OF ENVIRONMENTAL DATA

ENVIRONMENTAL FEATURES	INFORMATION SOURCE
NATURAL RESOURCES	
Floodplains	FEMA Mapping, USGS Mapping.
Wetlands	NWI Mapping, Soil Surveys, Color Infrared Aerial Photography, Cursory Field View.
Surface Waters/Water Quality	USGS Mapping, Aerial Photographs, Cursory Field View, PA DEP's Chapter 93, STORET Data, PFBC Files.
Prime and Statewide Important Farmland Soils	NRCS, County Conservation District, PA Dept. Of Agriculture, County Soil Surveys.
Productive Agricultural Land	Aerial Photographs, Cursory Field View, Municipal Mapping and Tax Parcel Information for Act 43, 319 and 515 Lands.
Critical Habitat Areas/Threatened Endangered Species	DCNR's PNHP/PNDI Environmental Review Tool, County Inventories, PGC, PFBC, USFWS, NMFS.
Geological Resources	County Soil Survey, Geologic Publications, Cursory Field View, USGS, DCNR's Bureau of Topographic and Geologic Survey.
Terrestrial Habitat	USGS Mapping, Aerial Photographs, Cursory Field View.
CULTURAL RESOURCES	
Historic Resources Historic Structures Historic Districts	Cultural Resources Geographic Information System (CRGIS), State Historic Preservation Office Files, County Survey Files, Field Reconnaissance, Historical Societies, National, State or Local Archives, Courthouse, Library, Historic Bridge Surveys, Consulting Parties.
Archaeological Resources	CRGIS, Local Informants, PASS Files, Local Historical Society, Society for PA Archaeology Chapters, Field Reconnaissance, Tribal Consultation.
SOCIOECONOMIC RESOURCES	
Population	US Bureau of Census, Local Municipalities, State Data Center, County Planning Commission.
Properties - Residential, Commercial Industrial	Preliminary Engineering Plans, Parcel Maps, Aerial Photographs, Local Tax Assessment Office, Local Municipalities, Cursory Field View, Comprehensive Plans.
Proposed Development Areas and Land Use	County Planning Commission, Aerial Photographs, Local Municipalities, Cursory Field View, Comprehensive Plans.
Community Facilities and Services (Schools, Emergency Services, Utilities, Public Buildings, etc.)	Local Municipalities, County Planning Commission, Parcel Maps, Cursory Field View, One Call, Local Utility Companies, Bicycle/Pedestrian Facility Mapping.
Cemeteries	Local Municipalities, USGS Mapping, Aerial Photographs, Cursory Field View.
Potential Air and Noise Sensitive Receptor Sites	Preliminary Engineering Plans, Subdivision Plans, Aerial Photographs, Cursory Field View.
Potential Waste Sites	PA DEP 100 and 300 Lists, EPA CERCLIS, Cursory Field View, Federal and State Records of Waste Site Inventories and Waste Management Permit Programs.
Parks and Recreational Sites	Local Municipalities, Regional/County Planning Commission, DCNR, PGC, Cursory Field View, NPS.

NOTE: GIS layers are available for most of these resources identified in Table 4.1. MPMS IQ (http://www.dot7.state.pa.us/MPMS_IQ) is also a useful GIS-based Department mapping tool that can be used. (Links to a variety of other environmental web pages can be found on the CE Expert System homepage in the left navigation pane. This is not an all-inclusive list, but merely a reference to frequently used resource sites.)

When the Scoping Field View is held, at a minimum, the Project Manager as well as the Environmental Manager from the Originating Office, representative(s) from HDTS, EPDS, and representative(s) from the FHWA Division Office should be included in the initial Scoping Field View. The purpose of the Scoping Field View is to provide the participants with the opportunity to confirm already gathered information and take a look at the now existing conditions for the verification and/or updating of sensitive resources, problem areas, engineering and environmental constraints and expectations for public and agency involvement. In addition, other modes of transportation such as transit or bicycle/pedestrian needs during/after construction should be considered.

Information contained within the pre-TIP screening form and DSR (if prepared) is brought into the project's post-TIP Scoping Document. The Scoping Document can be used at the Scoping Field View as a tool for verifying the resource inventory in the study area. The resource information confirmed and potentially updated during the Scoping Field View will be used to develop a Scope of Work for the project. Minutes of this Scoping Field View should be prepared and incorporated into the Scoping Document. It is the responsibility of the Project Manager to ensure that the minutes are accurate and that those attending the Scoping Field View concur with the minutes.

From this field view, the participants can evaluate the potential for significant impacts based on the prevalence or level of sensitive resources in the study area. If the significance of the impacts to known sensitive resources is unclear, the Originating Office along with HDTS, EPDS and FHWA can confirm the determination to follow the Process for an EA. If impacts are determined to be significant, the project should be elevated to an EIS.

The Scoping Document provides for the inclusion of relevant project documentation as well as incorporating a formal approval process. It still serves as a valuable tool for cataloguing study area features. Capture key comments and input from attendees in the Scoping Document.

NOTE: The Scoping Document must be approved electronically through the CE Expert System before the NEPA document is prepared. Upon approval, the Scoping Document will be moved to the "Approved Documents" (also referred to as the Archive) database in the CE Expert System and will be available for public viewing.

NOTE: After the Scoping Document is approved, **create an EA Package Document in the CE Expert System**. The EA is not prepared within the system, but fill in the following key milestone dates for the project as the project progresses: Scoping Field View, EA Notice of Availability Start, EA Notice of Availability End, NEPA Approval/FONSI, and Act 120/Section 2002 Approval.

D. Internally Confirm Purpose and Need. A project's purpose and need was initially defined during the pre-TIP process phases of the Process. Purpose and need should be revisited now to confirm that the need is still valid for the project. Purpose and need lays the foundation for NEPA alternatives analysis and subsequent decision-making. As a result, a well-defined need and purpose is very important.

The purpose is what the project is intended to accomplish. A project's purpose is an overarching statement as to why the project is being pursued and the objectives that will be met to address the transportation deficiency. The level of specificity for defining purpose (not too specific/not too general) should be considered in relation to how that may impact the number and range of alternatives that will be developed. The following are elements of a project's purpose:

- Present goals to address the need
- Can be used to develop and evaluate most cost effective potential solutions
- Is achievable
- Is unbiased towards any specific alternative or solution

A need for a project is a tangible, fact-based problem. There are many possible needs for a project. Simpler projects may have only one straight-forward need (e.g., address safety concerns (weight limit, emergency services access)) while more complex projects may have several needs (e.g., address connectivity, safety, and congestion). In some cases, a more detailed needs study may be necessary to more thoroughly define a project's needs. The following are elements of a project's need:

- Establishes evidence of a current or future transportation problem or deficiency
- Is factual and quantifiable
- Justifies commitment of resources and impacts to the environment
- Identifies a problem that is fixable/solvable
- Establishes and justifies logical termini (23 CFR §771.111(f))
- Allows for the consideration of all modes

A sound need enhances the credibility of the project and promotes the acceptance of the improvements proposed during alternatives development. Definition of the project need dictates the criteria by which alternatives will be measured. Project needs are expressed as problem statements. The needs are not presented as solutions to correct deficiencies, but rather present the deficiencies followed by a brief discussion of how it is known that the problems exist. The activities involved in conducting a needs analysis and documenting project needs are detailed in Publication 319, *Needs Study Handbook*.

Remember: Project need forms the foundation of the rest of the NEPA process.

The following questions need to be considered when deciding to base NEPA analysis and decision-making on needs determined pre-TIP:

- How much time has passed since the studies from pre-TIP phases and corresponding decisions were made?
- Were the future year policy assumptions used in the pre-TIP phases of the Process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process?
- What changes have occurred in the area since the time the pre-TIP data was gathered and analyses were completed?
- Are the information and analyses still relevant/valid?

If studies from planning are fresh and the validity of the data/analyses is confirmed internally, then the purpose and need can be presented to the agencies and the public for any additional input. If this is not the case, then additional needs studies may be necessary before proceeding. Refer to Publication 319, *Needs Study Handbook* for more information.

E. Confirm NEPA Class of Action. A preliminary determination of the NEPA class of action is made prior to a proposal being programmed on the TIP/STIP. A three-tiered classification system is used to group transportation improvement projects based on the significance of known potential environmental effects. Projects with significant impacts require preparation of an EIS. Projects with no significant impacts are CEEs (categorically excluded from the preparation of an EIS). Projects where the significance of the impacts is not certain are begun as EAs. The purpose of an EA is to determine if there are significant impacts warranting an EIS. Significance of impacts is based on context (or setting) and intensity (magnitude of effects). The Originating Office must consult with HDTS, EPDS, and FHWA when confirming the class of NEPA action for a project and must receive classification approval from FHWA. See Chapter 2 for more information on NEPA classes of action.

F. Select Consultant (if necessary). If the Originating Office determines that it cannot complete the EA in-house because of a lack of available time, personnel, or specific area of expertise, a consultant(s) can be selected to prepare all or a portion of the EA. Consultant selection should be conducted in accordance with the procedures set forth in Publication 93, *Policy and Procedures for the Administration of Consultant Agreements.* Review proposals

critically, narrow the field to a manageable short list of candidates and carefully choose consulting firms on the basis of proven qualifications and expertise in issues appropriate for the project.

It is important to take into account the time needed to advertise for a consultant, review qualifications, proceed through selection, execute a contract, and begin the work. Consultant selection may add several months to the project schedule. Open-end contracts can be a good tool to avoid the time delays associated with the consultant selection process. Use of an open-end contract allows for execution of a work order within a relatively quick turn-around time and permits work to begin at an earlier date.

NOTE: Occasionally, EPDS will execute a Memorandum of Understanding (MOU) or Memorandum of Agreement (MOA) with a resource agency which allows for agency personnel to conduct environmental studies within their jurisdiction. Keep in mind the time needed to negotiate and implement the MOU/MOA when planning and scheduling the project.

G. Establish Technical Support Data Files. A Technical Support Data file should be established at the Originating Office to retain data and study materials associated with the EA. The Technical Support Data should contain all pertinent information gathered during the environmental evaluation, including all information from the pre-TIP process phases that is referenced in the EA. Supporting documents/documentation (wetland delineation reports, Section 106 eligibility and effects reports, air and noise reports, etc.), telephone memoranda, and pertinent correspondence should be included in the Technical Support Data as it is generated. Information in the Technical Support Data should be made available to the public for review upon request once the EA is made available for public review. Documents such as technical reports and white papers on particular topics for a project that are specifically referenced in the EA should be circulated with or made easily accessible during the EA availability time period. If a request is received prior to circulation, a "Right-To-Know" Request or "Freedom of Information Act (FOIA)" Request must be submitted to PennDOT or FHWA, respectively. Additional information on compiling the Technical Support Data can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix F.

H. Develop Detailed Project Schedule. Expanding upon the generalized project schedule that has been developed by this point in the Process will aid in making the long term project goals a reality. In developing a detailed project schedule, it is imperative that key milestones be noted for each aspect of the project (e.g., Section 106, wetlands). Please note that as the project progresses, this schedule may need to be revised due to unforeseen circumstances or changes in anticipated completion dates. (See Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 3 and Publication 615, *Scheduling Manual*.)

EXAMPLE: Initial correspondence shows no known threatened/endangered species in the project vicinity, so no time is allowed in the schedule for field studies. Later, it becomes known that a particular endangered species may exist in the study area. It is March and the optimal time to survey is not until August. Additional time may need to be added to the overall schedule to enable the appropriate analyses to be completed.

I. Determine Usage of Environmental Review Process. Although required for EIS projects, SAFETEA-LU allows the Environmental Review Process to be applied to EA projects. This can be decided on a project-by-project basis in cooperation with the FHWA Division Office. See Chapter 5 - Environmental Impact Statements for more information and guidance regarding the Environmental Review Process.

4.2 AGENCY FIELD VIEW/COORDINATION

In the pre-TIP process phases (Steps 1 to 5) of the Process, the regulatory and resource agencies were consulted for project proposals, and the agencies may have participated in a field view for each proposal. Agencies may have already reviewed a proposal's purpose and need, possible alternatives, potential impacts, and mitigation opportunities. This early agency involvement is beneficial to overall project delivery in many ways. As issues/potential impacts were discovered in the pre-TIP process phases, agency input could be obtained and/or recommendations could be made in an effort to avoid, minimize or mitigate potential impacts. Each agency may provide particular expertise and occasionally assist in the completion of field studies. When applicable, agencies can also assist in permitting issues and may participate in studies. Involving the resource agencies early can

facilitate completion of the Process by ensuring the appropriate methodology and level of effort is utilized in analyzing environmental impacts and that potential issues are identified and addressed early in the process.

As the NEPA process begins, existing issues may have been identified and addressed in the pre-TIP process phases between the resource agencies, the MPO/RPO, and PennDOT. Resource agency coordination is conducted now so that the agencies can confirm that nothing has changed in the study area since the pre-TIP analyses or provide input if something has changed. Various means of resource agency coordination can occur (ACM presentation, specific agency meetings, etc.), but the most effective coordination may be the Agency Field View in the study area.

A. Prepare Materials for Resource Agencies. Before the Agency Field View or other coordination, the Project Team will provide resource agency representatives with information on the proposed project and the upcoming engineering and environmental studies. These materials should include:

- A description of the proposed project and its study area, including a location map
- The project purpose and need
- A list of project objectives, issues, and potential concerns
- The anticipated scope of agency involvement and highlights of a public and agency involvement plan
- Project Team composition
- A project schedule
- Other information/maps as appropriate, that help describe the history and scope of the project
- Preliminary overview of environmental features (list and/or map)

The materials can be provided to the resource agencies by email or mail along with an invitation and agenda for an Agency Field View (or meeting), or they can be distributed at the field view/meeting. The more complex the project, the more useful it would be to distribute the materials in advance of the field view/meeting. (It is recommended that materials be provided to the agencies at least 30 days in advance of a field view/meeting.)

NOTE: EA projects do not officially need to be presented at an Agency Coordination Meeting (ACM); however, ACM is a forum through which EA projects can be introduced, field views can be scheduled, and other issues that may arise can be discussed. The more complex the EA project the more useful it may be to use the ACM forum. (See Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 3 for more information on ACMs.)

B. Schedule and Conduct Agency Field View. Once appropriate refresher materials are prepared for the project, contact EPDS to schedule a field view using one of the ACM reserved field view dates. EPDS in turn will contact the resource agencies to notify them of the scheduled field view. It is most important to have resource agencies with jurisdiction over the resources most likely to be affected by the proposed project present at the field view; however, all of the environmental resource agencies that attend the monthly ACMs should be invited to attend the field view.

The purpose of this Agency Field View is to reintroduce resource agencies to the project, provide them with an opportunity to physically observe the study area and confirm any concerns regarding the potential environmental impacts as the process progresses. Input from the resource agencies at the field view can be used to update and/or refine information previously included in the Scoping Document for inclusion in the EA. The Agency Field View is also an excellent opportunity to discuss and agree on appropriate methodologies and level of effort required for identifying and evaluating impacts to environmental resources. Minutes of this Agency Field View should be prepared and included in the Technical Support Data files. It is the responsibility of the Project Manager to ensure the minutes are accurate and to obtain and address any comments on the minutes from those attending the Agency Field View.

If resources are observed during the Agency Field View that were not previously identified and that are under the purview of an agency not represented at the field view, it may be appropriate to conduct a second field view with the appropriate agency representative(s). The appropriate agency representative(s) should be contacted to determine whether or not a field view is desired. This is not, however, a routine practice; all agencies are expected to attend the initial field view. The Project Team should determine a schedule to deliver the results of the environmental studies to the resource agencies for review and comment. Dates should also be determined for a timely response to the comments. The environmental information should be presented in the form of a features map depicting the environmental features (natural, cultural, and socioeconomic) in the study area. This map should show the

approximate boundaries of the resources. The complexity of the study area generally dictates whether a single map or a series of maps is needed to adequately depict all of the features. Brief descriptions of the important features in the study area should accompany the map. All of this information should be included with the EA as an attachment, and be updated as more detailed data is collected.

C. Confirm Purpose and Need. Agencies should review the purpose and need of the project and provide the Project Team with any comments. The Project Team should consider agency (and public) comments before seeking FHWA concurrence on purpose and need.

D. Confirm Study Area. With knowledge of the transportation needs and potential environmental impacts for the project, the Project Team will confirm the boundaries of the study area. These boundaries should be broad enough to accommodate evaluation of reasonable transportation improvement alternatives that would satisfy the project needs and be consistent with existing and planned community land use goals that could interact with transportation facilities.

E. Consider Arranging for Resource Agencies to Conduct Field Studies (if appropriate). In some instances, studies may need to be conducted for which one or more of the environmental resource agencies is best suited. In these circumstances, arrangements should be made with the appropriate resource agency representative(s) to conduct these studies.

EXAMPLE: A mussel survey needs to be conducted for a Federally endangered mussel. The expert collector of this mussel works for the United States Geological Survey (USGS). Consultation should be undertaken with EPDS. EPDS can then issue an assignment to the USGS to determine whether they can conduct the survey.

EXAMPLE: Stream shocking needs to be done to identify fish species inhabiting project streams. The Pennsylvania Fish and Boat Commission (PFBC) may be willing to conduct the shocking and assist in fish identification.

4.3 PUBLIC INVOLVEMENT

Existing issues should have been identified and addressed in the pre-TIP process phases (Steps 1 to 5 of the Process) between the resource agencies, the MPO/RPO, and PennDOT. Early in the NEPA portion of the Process, public involvement is conducted so that the public can confirm that nothing has changed in the study area since the pre-TIP analyses.

Public support is important in advancing transportation projects. When the project was a proposal in the pre-TIP process phases, the proposal was available to the public through the MPO/RPO planning public participation process. In the beginning of the NEPA process, the project should be introduced to residents and customers of the study area as a project at a public meeting, or through some other public involvement method, before in-depth engineering and environmental studies begin. Drivers, property owners, business people, and anyone who lives near or uses the transportation facility to be improved are the Department's customers. Only by inviting these customers to actively participate in the Process can the Department ensure that improvements fully respond to their needs and the needs of their communities. Publication 295, *Project Level Public Involvement Handbook*, should be consulted for information regarding appropriate mechanisms for involving the public. It is important for the Project Manager to determine how the public should be involved and to get the public involved at an early point in the NEPA process. The extent of public involvement should be discussed with the District Environmental Manager, HDTS, and FHWA. A public involvement plan should be developed for the project outlining the means and timing of public participation for the remaining phases of the process.

There are many methods of involving the public in a project. Public involvement efforts may range from individual meetings with affected property owner(s) or public interest groups, to public officials meetings, workshops, open house and/or plans display meetings, media announcements, public hearings, Consulting Parties coordination, citizens advisory committee meetings, etc. Public involvement activities should be implemented as warranted by the impacts the project may have on the surrounding communities. Additional guidance on public involvement techniques can be found in Publication 295, *Project Level Public Involvement Handbook.*

The public should be given the opportunity to review the purpose and need of the project at this stage of the Preliminary Engineering/NEPA Decision Phase and provide the Project Team with any comments. The Project Team should consider both agency and public comments before seeking FHWA concurrence on purpose and need.

4.4 FHWA ACCEPTANCE OF PURPOSE AND NEED

Taking into consideration comments on purpose and need from both the agencies and the public, the Project Team should request acceptance from FHWA on the purpose and need for the project. When the project's purpose and need are ready for FHWA acceptance, transmit the project purpose and need via an acceptance request letter. This letter from the Originating Office to FHWA should clearly define the purpose and need for the project and request that FHWA sign the signature block and send the letter back to the Originating Office as documentation of their acceptance. An example purpose and need acceptance request letter can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C,* Appendix G.

PennDOT and FHWA must agree to the project's purpose and need. Because all future analyses are dependent on the purpose and need, the project cannot proceed any further until FHWA accepts the purpose and need.

4.5 REASSESS NEPA CLASS OF ACTION

At this point in the EA process, the project needs have been identified and defined, and a reconnaissance-level investigation of potential environmental impacts has been conducted using existing pre-TIP data, confirmed and possibly updated with Scoping and Agency Field Views. Input from the resource agencies and the public has also been solicited. FHWA has concurred with purpose and need. This is a good point at which to reexamine whether an EA is still the appropriate class of action.

Consider whether the field views identified any additional resources that will likely have significant impacts. Can those impacts be mitigated? From the input received from the resource agencies and the public, does there appear to be newly discovered controversy? Can this controversy be averted or mitigated?

Public/agency controversy on environmental grounds and significant impacts that cannot be mitigated may require the preparation of an EIS. If there appears to be no controversy and no significant impacts and only one alternative is to be considered further, then consideration should be given to downscoping to a CEE. If the significance of the impacts and ability to mitigate them is still uncertain, continue with the EA process.

Remember, **reassessment of the appropriate documentation to be used for a project is continuous throughout the study**. In each subsequent step of the project, the information will become more in-depth and specific. As more detailed information is gathered and analyzed, the significance of environmental impacts becomes clearer. Therefore, at key points in the Process, the project should be reassessed to determine if the impacts demonstrate the need for reclassification as either an EIS or CEE. **The Originating Office together with HDTS and EPDS must consult with FHWA when classifying or reclassifying a project**. A formal submission (e.g., letter) to FHWA with recommendations on classification/reclassification should be prepared by the Originating Office and should be submitted with supporting evidence through HDTS to the FHWA Division Office. FHWA will then make the final determination.

4.6 PRELIMINARY ENGINEERING AND ENVIRONMENTAL STUDY

For an EA project, the EA is prepared during the preliminary engineering and environmental study (or an Environmental Evaluation Report (EER) under Act 120 for 100% state-funded projects). To support the completion of the EA, alternatives are considered, effects are examined, and mitigation measures are explored for unavoidable environmental impacts; a Preferred Alternative is then identified if multiple alternatives are being considered. Additionally, the appropriate class of NEPA documentation to be prepared for the project should be verified. The EA may be elevated to an EIS or downscoped to a CEE if it is clear that there are no significant impacts. Any changes in class of action should be discussed with and approved by HDTS and FHWA.

NOTE: It is encouraged that some of the identification of alternatives, consideration of impacts, and subsequent alternatives analysis and screening be done pre-TIP. The information and analysis must have a rational basis given the nature of the impact(s) and be thoroughly documented. The EA must include the evaluation of alternatives from the pre-TIP analysis, particularly a discussion of the alternative(s) eliminated from detailed consideration during the pre-TIP analysis, reasons for eliminating the alternative, and a summary of the analysis process supporting the elimination. Please reference the analysis contained with this section when conducting pre-TIP alternatives analysis.

A. Set Engineering Parameters. While all sensitive environmental features are being identified, the engineering criteria for the proposed project should be set in accordance with Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Publication 13M, Design Manual Part 2, *Highway Design*, and the American Association of State Highway and Transportation Officials' (AASHTO) *A Policy on Geometric Design of Highways and Streets*. Selection of engineering criteria should be based on sound engineering judgment applied with an understanding of the full project context, setting, place, and users using the flexibility provided in the documents that are referenced above. The Conceptual Engineering portion of the Level 2 Screening Form (or DSR) should be reviewed, and the information revised as appropriate. The roadway classification is determined and the design speed is established. The study area context, roadway classification and design speed (desired operating/running), in turn, set the standards for the horizontal and vertical geometry of the road (lane widths, shoulder widths, maximum grades, maximum curvature, sight distance requirements, superelevation rates, etc.).

B. Examine Alternatives Developed in Pre-TIP Process Phases and/or Develop Additional Alternatives. Alternatives screening occurred in the pre-TIP process phases (Steps 1 to 5) of the Process. The decision to eliminate any screened alternative prior to the project being programmed on the TIP must be fully documented and be based on either the alternative not meeting the project purpose and need or upon the alternative not being a reasonable alternative (or prudent alternative if Section 4(f) is triggered) based on impacts and/or cost. NEPA alternatives analysis relies on pre-TIP alternatives development and screening. Additional alternatives can be developed at this point as more detailed resource information is available and further environmental and engineering analyses are performed.

In accordance with CEQ regulations (40 CFR §1505.1(e)), alternatives that would meet the project purpose and need should be developed, analyzed, and documented in the EA. Alternatives dismissed during screening in the pre-TIP process phases are not considered reasonable unless new information or analyses determines them as such. This could include alternative modes as well as alternative corridors. Dismissed alternatives do not need to be discussed in detail in the EA; however the EA should reference the Technical Support Data, which contains the justification for dismissal of unreasonable alternatives. Carry the **No-Build Alternative** through the Alternatives Analysis as a basis for comparison. Examine logical termini to determine the appropriate project limits.

Attempt to avoid and minimize impacts to natural, cultural, and socioeconomic resources should be made, and it is essential to take local land use planning and community goals into consideration as alternatives are further developed. Consideration should be given to input obtained from citizens (e.g., at Public Meetings) and the resource agencies (e.g., through ACM, field views, or other forums). It is also essential that the Project Team acknowledge and consider the requirements of all other regulations relating to the project (e.g., Section 4(f), Section 106, Section 404, Chapter 105, the Endangered Species Act, PA Act 100/43, etc.) in assessing alternatives.

Reasonable alternatives should be developed to the same level of confidence for evaluating impacts. Each alternative should be developed in enough detail to permit a sound judgment of its effectiveness in meeting needs and its sensitivity to environmental features.

Since EAs are typically prepared for projects that involve improvements to existing highway facilities such as widening existing routes, straightening substandard curves, replacing bridges, and adding turn lanes, alternatives development may be somewhat limited. For widening projects and adding turn lanes, the alternatives might include widening to the right, widening to the left, or some combination of widening to the right and left. For bridge replacements, options could include half-width construction, a new bridge at same location, new bridge immediately adjacent, or a new bridge upstream or downstream of the existing bridge. If off-line alternatives are a reasonable consideration for a project, they should be developed to connect logical termini while avoiding and minimizing environmental impacts to the extent possible.

While NEPA requires that impacts to all resources be balanced together with engineering considerations, ability to meet needs, public input, and agency consultation, other regulations require examination of avoidance alternatives. Section 4(f) of the U.S. DOT Act of 1966 requires avoidance of publicly-owned public parks, recreation areas, wildlife/waterfowl refuges, and significant historic sites if feasible and prudent alternatives exist to avoid Section 4(f) resources. Section 404 of the Clean Water Act and Chapter 105 require examination of practicable alternatives to avoid wetlands. Pennsylvania Acts 100 and 43 require avoidance of productive agricultural lands if a prudent and reasonable alternative exists, for projects that extend outside existing roadway corridors. Section 7 of the Endangered Species Act requires consultation to seek ways to avoid jeopardizing the continued existence of Federally threatened and endangered species and their habitats. Section 106 requires that consideration be given to the effects on historic and archaeological properties. All of these and other Federal, State, and local regulations, as appropriate, must be considered in the development of alternatives to ensure that all regulatory requirements are met for the project.

NOTE: The range of alternatives under consideration for EA projects is often less than that of an EIS projects. If an EA project alternatives analysis lends itself to be more complicated, see the alternatives analysis discussions in Chapter 5 for guidance.

C. Consider Alternatives and Analyze Impacts in Detail. At this point in the Process, any remaining or additional detailed field work that is necessary to further define the environmental features of the study area is conducted. This work builds upon the data collection and analyses performed in the pre-TIP process phases and confirmed and/or updated during scoping, public involvement, and the Agency Field View/coordination. The engineering parameters are set and the forwarded alternatives from the pre-TIP process phases are then examined to determine whether they meet the project needs while avoiding and minimizing the environmental impacts. All environmental impacts are identified and analyzed, and alternatives are refined to further reduce and minimize impacts. Efforts are made to inform and involve the public in the development and analysis of alternatives, and coordination is conducted with all appropriate resource agencies. Engineering criteria, environmental impacts, and public and agency input all play a role in the development of a Preferred Alternative. The purpose of the alternatives analysis is to perform a detailed analysis of all the alternatives evaluated, including the No-Build Alternative. Reasonable alternatives are those that address the purpose and need of the project, are comprehensive in geographic coverage, and are able to stand alone with logical endpoints. Consultation with resource agencies and the public has occurred in pre-TIP process phases and so far in the NEPA process and has given the Project Team a sense of impacts associated with an alternative(s). As such, early coordination and analyses up to this point in the Process serve as an important streamlining step in narrowing the range of alternatives that should still be under consideration. In addition, this consultation and analyses should have resulted in the identification of which aspects of the proposed action may have impacts, alternatives to avoid those impacts, and measures that might mitigate adverse environmental impacts. All resources that may be impacted by an alternative(s) should be studied and addressed in the EA, focusing on those impacts that may affect the decision-making process if there are multiple alternatives.

NOTE: By keeping all regulatory requirements in mind while developing and analyzing alternatives, all regulatory requirements can be addressed and satisfied collectively. This approach can facilitate the resolution of issues, receipt of project approvals, and issuance of required permits.

D. Further Identify Environmental Resources. During the pre-TIP phases, as well as the scoping and Agency Field Views in the NEPA process, natural, cultural, and socioeconomic resources were identified from existing databases and sources of information and through reconnaissance field views; however, detailed field studies could have been, but were not necessarily conducted. The preliminary information gathered to this point in the Process was intended to allow for the identification of the "key" resources in the study area. Key resources are those resources that potentially play an important role in deciding which alternative should ultimately be selected. In addition, methodologies for conducting detailed field investigations for the various environmental resources and the project schedule were agreed upon with the resource agencies during the Agency Field View.

NOTE: While NEPA requires that impacts to all resources be balanced together with engineering considerations, ability to meet needs, public input and agency consultation, other regulations require examination of avoidance alternatives. Section 4(f) of the U.S. DOT Act of 1966 requires avoidance of publicly-owned public parks, recreation areas and wildlife/waterfowl refuges and significant historic sites if a Feasible and Prudent Total Avoidance Alternative exists, unless the use is *de minimis*. Section 404 of the Clean Water Act and Chapter 105 require examination of alternatives to avoid wetlands. Pennsylvania Acts 100 and 43 require avoidance of productive agricultural lands if a prudent and reasonable alternative exists, for projects that extend outside existing roadway corridors. Section 7 of the Endangered Species Act requires consultation to seek ways to avoid jeopardizing the continued existence of Federally threatened and endangered species and their habitats. Section 106 requires that consideration be given to the effects on historic and archaeological properties. All of these and other Federal, State and local regulations, as appropriate, must be considered in the development of alternatives to ensure that all regulatory requirements are met for the project.

The agreed upon methodologies will be used to complete studies that confirm, identify, and delineate the natural, cultural, and socioeconomic resources and the potential for direct, indirect and cumulative effects in the study area. Both quantitative and qualitative data will be collected. **The levels of quantitative and qualitative information collected for each resource should be commensurate with the importance of the resource in the decision-making process**, the likelihood of it being impacted by one or more of the alternatives, the magnitude of the impact, and pertinent requirements of other regulations.

Those natural resources that occur in the study area and have the likelihood of being impacted will be investigated in detail. The level of detail will be dependent on the likelihood of an impact, the magnitude of impact and the importance of the resource in the decision-making process. It may not be necessary to analyze all resources with the same level of detail. Resources to be considered include, but are not limited to, those identified in Figure 4.1.

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FIGURE 4.1
ENVIRONMENTAL RESOURCES

- **Natural Resources**
  - Soils, Geology, and Groundwater Resources
  - Mining and Mineral Resources
  - Surface Water Resources
  - Floodplains and Flood Hazard Areas
  - Wetlands
  - Vegetation and Wildlife
  - Threatened and Endangered Species
  - Farmlands
- **Cultural Resources**
  - Historic Structures and Properties
  - Archaeology
- **Section 4(f) Resources**
- **Socioeconomic Resources**
  - Land Use/Land Cover
  - Planned Development
  - Community Facilities and Services
  - Community Cohesion
  - Environmental Justice
  - Displacements
  - Local and Regional Economy
- **Visual Resources**
- **Air Quality**
- **Noise/Vibration**
- **Municipal, Industrial and Hazardous Waste Facilities**
- **Indirect and Cumulative Effects**
- **Invasive Species**
- **Energy**
- **Construction Impacts**

Natural Resources

Soils, Geology, and Groundwater Resources

Soils, Geology, and Groundwater Resources should be identified through a review of county soil surveys and published literature from sources such as the Pennsylvania Topographic and Geologic Survey, U.S. Department of Agriculture, and the USGS. Public/private wells and sensitive aquifers should be noted. Geologic features which may affect construction of a project should be noted (e.g., presence of pyritic rock, karst areas, unstable rock formations, etc.). Borings or other testing may be required as part of the studies to analyze alternatives and impacts in areas with a history of geologic issues.

Mining and Mineral Resources

Mining and Mineral Resources can be identified through a literature review of mining and mineral resources (coal, natural gas, and oil), as well as coordination with the Pennsylvania Department of Environmental Protection (PA DEP) for mining permits and registered oil and gas wells. Field reconnaissance and contact with the property owners can be conducted to confirm and supplement the literature search data and information.

Surface Water Resources

Surface Water Resources will be identified from USGS mapping, aerial photographs, and field surveys. The water quality of the streams will be determined through STORET data (U.S. Environmental Protection Agency's (EPA) STOrage and RETrieval System), PFBC file data, and PA DEP Chapter 93 classification. High quality and exceptional value streams should be identified using PA DEP's Chapter 93 classification (25 Pa. Code Chapter 93). Wild and stocked trout streams can be identified through coordination with the PFBC. Physical stream data (length, width, watershed area, depth, substrate, shading, pool/riffle ratio, etc.) can be obtained in the field. The need for, and level of, chemical and biological data should be determined in consideration of the anticipated impacts and in coordination with the resource agencies. Macroinvertebrate sampling, fish sampling, and chemical sampling may or may not be necessary. Where a project involves bridging a stream which is not a critical habitat for a threatened or endangered species or special protection less detailed analysis would be required when compared with a project requiring stream relocation or culverting.

Floodplains

Floodplain areas should be identified from Federal Emergency Management Agency (FEMA) and USGS mapping. Note should be made of the 100-year floodplain boundaries (i.e., special flood hazard areas) and of regulated floodways (as delineated by FEMA) if present in the study area. If, after consultation with FHWA, it is concluded that the proposed action will result in a significant floodplain encroachment, and subsequently require a floodplain finding, an EIS will have to be prepared because an EIS is required for projects with significant impacts. Consult Publication 13M, Design Manual Part 2, *Highway Design*, Chapter 10 for additional floodplain information. Detailed hydraulic and hydrologic (H&H) studies may also be completed as part of the engineering design, often in Final Design.

Wetlands

Wetlands will be identified and delineated in accordance with accepted field methods. The functions and values of the wetlands, size, vegetative type, and other relevant factors will also be analyzed. Exceptional value wetlands will be identified. Boundaries of wetlands will be confirmed with a Jurisdictional Determination (JD) made by the U.S. Army Corps of Engineers (USCOE). It is typically recommended that PA DEP be invited to the JD meetings to expedite the process. A Wetland Identification and Delineation and Functional Assessment Report will typically be prepared. All wetland analyses should be conducted in accordance with the guidelines contained in Publication 325, *Wetland Resources Handbook* and in accordance with Section 404 of the Clean Water Act and Chapter 105 regulations (25 Pa. Code Chapter 105) promulgated pursuant to the Dam Safety and Encroachments Act (32 P.S. §§ 693.1 et al). When following the integrated NEPA/Section 404 process, the 404(b)(1) Alternatives Analysis must be attached to the EA for review prior to requesting NEPA approval.

Vegetation and Wildlife

Vegetation and Wildlife will be identified by review of land use/land cover mapping of the study area. Using the information from this mapping, field investigations are conducted to verify existing conditions and collect data on vegetation types and successional stages. Terrestrial habitat including forestland, rangeland and other land use habitats may need to be mapped if there is the potential for Terrestrial Resources Meriting Compensation (TRMC) (see Strike-Off Letter 438-04-02, *Terrestrial Assessment and Mitigation Policy* for additional information). If a detailed habitat assessment is conducted, a technical report would typically be prepared. Other habitat assessment methodologies could be used if they are accepted by the appropriate agencies and in consultation with EPDS.

Threatened and Endangered Species

Threatened and endangered (T&E) species (Federal and State listed, proposed and candidate species) should be identified through the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Tool and agency coordination. Field studies to confirm the presence of a species, its habitat or Critical Habitat may or may not be necessary depending on the results of the database search and agency coordination. Agencies with jurisdiction over protected species include the Pennsylvania Department of Conservation and Natural Resources (DCNR), PFBC, Pennsylvania Game Commission (PGC), the U.S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS). Species-specific approved surveyors may need to be called in to assist in identifying a certain species or its habitat. If a habitat assessment is conducted, a report or technical paper is typically prepared. Requirements of the Endangered Species Act must be met if a Federally-endangered/threatened listed, proposed or candidate species, or its habitat is involved. Requirements of applicable State codes, such as the Game and Wildlife Code, the Fish and Boat Code, and the Conservation of Natural Wild Plants Code, must also be met for state listed species. Copies of correspondence regarding the presence/absence of T&E species should be attached to the EA, and associated reports (if necessary) should be summarized in the EA and included in the Technical Support Data. More information on T&E coordination can be found in Publication 546, *Threatened and Endangered Species Desk Reference*.

Farmlands

Productive agricultural lands that could be affected by the project should be identified in accordance with Pennsylvania Act 100 (71 P.S. §106) and Act 43 (3 P.S. §§901 et al) and the Agricultural Lands Preservation Policy (ALPP) (4 Pa. Code Chapter 7). If the proposed project only involves improvements to an existing facility, the project will likely be exempt from Acts 100 and 43 and will not need to go before the Agricultural Lands Condemnation Approval Board (ALCAB). If the project is not exempt from Acts 100 and 43 and ALCAB, it will be important to interview the local farmers for details about their operations. If the project will need to be presented to ALCAB, a Farmlands Assessment Report (FAR) will need to be prepared. An ALCAB Hearing may need to be held. An ALCAB Hearing is a formal hearing which requires extensive preparation. Where amicable settlement cannot be reached for acquisition of productive agricultural land, ALCAB approval that the selected alternative is the most reasonable and prudent alternative must be obtained before condemnation proceedings can begin. If the evidence that the selected alternative is the most reasonable and prudent alternative is not strong or well presented, it is possible that the Board may rule against the condemnation of the desired property. The hearing, if held, would most likely be conducted no later than during Final Design.

In order to comply with ALPP, productive agricultural land that is preserved through a conservation easement, is within an Agricultural Security Area (ASA), is participating in Acts 319 or 515, has special agricultural zoning, or contains Capability Class I, II, III or IV soils should be identified. In addition, for Federally-funded projects to comply with the Farmlands Preservation Policy Act (FPPA) (7 U.S.C. §4201), areas of prime farmland soil, statewide important farmland soil, and unique and locally important farmland soil must be identified and an AD-1006 Form must be completed. Publication 324, *Agricultural Resources Evaluation Handbook*, provides additional details on evaluating agricultural lands in accordance with the various farmland regulations.

Cultural Resources

Cultural resources listed in or eligible for listing in the *National Register of Historic Places* will be identified in accordance with Section 106 of the National Historic Preservation Act. Appropriate historic resource reports (Historic Structures Eligibility Reports, Pennsylvania Historic Resource Survey (PHRS) forms, Determination of Effect Reports, etc.) will be prepared for properties, districts, and structures listed in or eligible for the National

Register. In addition, archaeological studies and reports (such as geomorphology reports, Phase I Archaeological Survey Reports, Phase II work plans and reports, Phase III reports and data recovery plans) will be completed as necessary. Consultation/coordination with the appropriate PennDOT Cultural Resource Professional (CRP) should be performed during the preparation of these reports. The reports will then be submitted to the Pennsylvania Historical and Museum Commission (PHMC) to consult with the State Historic Preservation Officer (SHPO) on the findings contained within each report. The CRP assigned to the District will be responsible for seeking and communicating with Consulting Parties that have cultural resources as their primary focus. In addition, the CRP for archeological resources is responsible for consulting with Federally recognized tribes. Publication 689, *Cultural Resources Handbook*, provides further information related to cultural resources issues.

NOTE: FHWA should be involved in the review and approval of any additional work stemming from surveys, archaeological or otherwise. The approval to spend public funds is not a function of the SHPO, although their concurrence is sought with respect to Section 106.

Section 4(f) Resources

Properties subject to Section 4(f) of the U.S. Department of Transportation Act of 1966 include publicly owned public parks, recreational areas, wildlife or waterfowl refuges, and any significant historic sites. Section 4(f) permits the use of such land for a transportation project only when:

- There is no "feasible and prudent" alternative to the use of the Section 4(f) property; and
- The project includes all possible planning to minimize harm (as defined in 23 CFR §774.17) to the Section 4(f) property resulting from the use.

Or

- The use, including any measures to minimize harm (such as any avoidance, minimization, or enhancement measures) will have a *de minimis* impact on the property.

In general, Section 4(f) is triggered when a project subject to approval by FHWA, or another USDOT agency, "uses" a resource protected by Section 4(f). "Use" has been defined to include an actual use from a Section 4(f) resource (incorporation of property from the 4(f) resource into the transportation project), *de minimis* use, or the "constructive use" of a Section 4(f) resource (proximity impact that adversely affects the features or attributes of the 4(f) resource). For a discussion of what constitutes a "use" of a Section 4(f) resource, see Publication 349, *Section 4(f)/Section 2002 Handbook*. The *de minimis* impact criteria of "no adverse effect" are defined for historic sites by a Section 106 determination of No Adverse Effect or No Historic Properties Affected. The criteria for publicly owned parks, recreation areas, and wildlife and waterfowl refuges are defined as those impacts that do not "adversely affect the activities, features, and attributes" of the Section 4(f) property that qualify the property for protection under Section 4(f).

If a Section 4(f) resource is used by the alternatives in a transportation project, and that use is not *de minimis*, FHWA must determine if a Feasible and Prudent Total Avoidance Alternative exists. If there are no Feasible and Prudent Total Avoidance Alternatives, FHWA must determine which alternative causes the least overall harm to Section 4(f) resources. This entire process must be documented in a Section 4(f) Evaluation, which must be approved by PennDOT and FHWA for Federal-aid projects and projects involving other USDOT actions. In addition to identifying the affected Section 4(f) resources in the EA, separate Section 4(f) Evaluation documentation must be completed and attached to the EA.

Depending on the specifics of the Section 4(f) use(s) on a project, a Programmatic Section 4(f) Evaluation may be applicable. There are five Nationwide Programmatic Section 4(f) Evaluations including: minor uses of parks, recreation areas and wildlife/waterfowl refuges; minor uses of historic sites; historic bridges; bikeway or walkway construction projects; and projects that result in a net benefit to the Section 4(f) property. Each Programmatic has a list of criteria to be met for the Programmatic to be considered applicable. There are forms to complete as the Section 4(f) documentation for each of the programmatic evaluations, as well as forms for Non Applicability/No Use, Temporary Occupancy, and *De Minimis* uses. The latest version of the forms and can be found via links within

Publication 349, *Section 4(f)/Section 2002 Handbook.* The handbook contains guidance on the preparation of Section 4(f) Evaluations. For additional guidance, consult with EPDS.

Socioeconomic Resources

Residential, commercial, or industrial facilities that could be impacted by the project will be identified. This will include existing structures as well as proposed development areas. Effects on community cohesion should also be addressed. It may be useful to know the boundaries of these properties by obtaining tax parcel mapping. Community facilities and services that could be affected as a result of the proposed project should be identified. Community facilities and services would include such things as: recreational facilities, social facilities, emergency service providers, utility companies, schools, churches, and cemeteries. Population data, including minority and low-income populations, should be identified in accordance with Executive Order 12898 ("Environmental Justice") and Title VI of the Civil Rights Act. Coordination should be undertaken with local, public, and municipal officials to identify their concerns and goals for the proposed project.

Visual Resources

The visual character and quality of the study area should be identified. The limits of the visual environment, or viewshed, generally include views of the transportation facility from the study area and views of the study area from the transportation facility. Visually sensitive resources, which may include historic properties or recreational areas, for example, should be identified. The effects of each alternative on the visually sensitive resources should be assessed.

Air Quality

Projects have potential air quality impacts on a regional level and a local level. The regional air quality impact is cumulative in that all projects in an ozone or $PM_{2.5}$ (particulate matter) nonattainment area (region) must be analyzed as a whole at least once every two years when the TIP is updated. This analysis, called a conformity analysis, is conducted at the regional/local planning organization level with PennDOT's assistance. All projects in a nonattainment area must come from an approved (conforming) TIP or Long Range Transportation Plan (LRTP).

Certain capacity adding projects in air quality nonattainment areas must come from a Congestion Management Process (CMP). There are nine Transportation Management Areas (TMAs) in Pennsylvania where a CMP analysis is developed for some capacity adding projects. These TMAs are Philadelphia, Pittsburgh, Lehigh Valley, Harrisburg, Scranton, Reading, Lancaster, Shenango Valley, and York.

Project level air quality impacts are assessed with consideration for carbon monoxide, PM_{10} and $PM_{2.5}$, and Mobile Source Air Toxics (MSATS) associated with the project.

Refer to Publication 321, *Project Level Air Quality Handbook,* for further information on project level analysis.

Noise

Project level noise analysis is directed toward evaluation of impacts to human activity or sensitive receptors such as residences, schools, libraries, etc. In general, there will be no noise impacts if there are no sensitive receptors. Where sensitive receptors could be affected by a proposed project, monitoring of existing noise levels can be done to determine if there will be an effect and whether consideration of noise abatement is warranted, feasible, and reasonable. Determination of the level of analysis will be required. Refer to Publication 24, *Project Level Highway Traffic Noise Handbook*, for detailed noise analysis guidelines.

Vibration

As residential structures and other facilities are identified, thought should be given to receptors that might warrant vibration analysis. Vibration studies should be conducted in accordance with Report No. FHWA-RD-78-166 *Engineering Guidelines for the Analyses of Traffic-Induced Vibration,* FHWA Office of Research and Development.

Municipal, Industrial, and Hazardous Waste Sites

In addition to the residential and community facilities information, potential municipal, industrial, and hazardous waste sites should be investigated. Environmental covenants should also be researched. This generally entails a Phase I Environmental Site Assessment (ESA) to be completed. If possible waste sites are identified, Phase II ESAs and Phase III ESAs may be completed through final design. Publication 281, *Waste Site Evaluation Procedures Handbook*, provides guidance for conducting waste site studies and due diligence procedures.

If wastes are to be handled during the project, a summary of the coordination with the PA DEP should be included in the Technical Support Data and referenced in the EA.

NOTE: Phase I and II ESA Reports are approved by the Originating Office. If a Phase II ESA recommends a Phase III ESA, the draft report must be approved by the Bureau of Maintenance and Operations' (BOMO) Strategic Environmental Management Program (SEMP) group. The SEMP group must approve all Phase III Scopes of Work.

Indirect Effects

Indirect effects are defined as those impacts caused by the action but are later in time or farther removed in distance, but still reasonably foreseeable. The potential for growth-related effects and other effects related to changes in the pattern of land use, population density or growth rate, and effects on air, water and other natural systems including ecosystems as a result of the proposed project should be evaluated. Factors affecting indirect effects range from conducive zoning, availability of sewer and water, available land and new access provided by the facility. After the potential for indirect development is established, impacts on the surrounding environment should be documented. The area in which potential indirect effects could occur as a result of a project will vary depending on the type of undertaking. For example, a radius of x miles from a proposed interchange could be considered the range of effect from such a facility.

Document environmental features within this range and make an assessment of the potential for impacts from related development. For example, wetlands should be mapped and impacts calculated from future commercial strip development that may be caused by a new interchange. For an EA, this documentation may be included as a check-off list noting the existence of other growth-related factors (water/sewer, land, etc.). If these factors are present, then a short description of potential environmental impacts should also be noted. Coordination with local land use planners should also be indicated in the Technical Support Data files. More information is available in Publication 640, *Indirect and Cumulative Effects (ICE) Desk Reference*.

Cumulative Effects

Cumulative effects documentation should include an analysis of the incremental impacts of the action when added to other past, present and reasonably foreseeable actions, regardless of what agency (Federal or Non-Federal) or person undertakes such other action, on significant environmental features (environmental features can be grouped as human and/or ecological systems). Initially, important environmental features should be determined, and then a cumulative effects analysis conducted for each feature.

For instance, water quality may be determined by the Project Team as an important environmental feature. With water quality in mind, all past, present and reasonably foreseeable actions should be considered on the overall impact to water quality. Past actions could include mining in the area; present actions could include the new highway; and future actions could include a proposed nuclear power plant. The general idea is to provide the decision-makers with enough information to determine whether the proposed project, in combination with other incremental actions over time and within a region, could render the specified environmental feature unsustainable. Parameters for geographic and temporal boundaries should be established during the scoping process or early in the decision-making process for resources directly impacted by the proposed project. Likewise, threshold conditions for each environmental feature should be documented. However, there is much controversy and little scientific research on thresholds and it is best left to professional judgment. More information is available in Publication 640, *Indirect and Cumulative Effects (ICE) Desk Reference*.

The EA should identify which environmental features are under consideration, the past, present, and reasonably foreseeable actions and the determination of whether the proposed project pushes the threshold of the environmental resource beyond a sustainable condition, which could mean that the cumulative impacts are significant.

Invasive Species

Invasive species represent one of the most significant ecological threats of the 21st century. Invasive species are exotic plants and animals that have been intentionally or accidentally introduced into native ecosystems. These invasive species displace native species and change the ecological structure of the invaded community, sometimes with dire consequences to native plants and animals. An Executive Order 13112 was issued in 1999, requiring each federal agency to address the issue of invasive species. The FHWA Policy Statement on Invasive Alien Species (April 22, 1999), overviews the federal efforts to prevent and control the introduction of invasive species during construction and maintenance activities. The *FHWA Guidance on Invasive Species* (August 10, 1999) gives a more detailed description of work items to be conducted to implement Executive Order 13112, including as part of NEPA analysis.

This analysis should include identification of any invasive terrestrial or aquatic animal or plant species that could do harm to native habitats within the project study area. This could involve the mapping of all existing invasive populations on and adjacent to the project and a survey of existing soils for invasive potential. The analysis should also include the potential impact of the disturbances caused by construction on the spread of invasive species. Ultimately, the analysis should include a discussion of any preventative measures or eradication measures that will be taken on the project. See Publication 756, *Invasive Species Best Management Practices*, for further guidance.

Energy

The EA should discuss in general terms the construction and operational energy requirements and conservation potential of the alternative(s) under consideration. The discussion should be reasonable and supportable. Consider the following:

- Are the energy requirements of various alternatives similar?
- Are the energy requirements of the build alternatives greater than that of the no-build alternative?
- Are the post-construction, operational energy requirements of the facility less with the build alternative as opposed to the no-build alternative? If so, it may be concluded that the savings in operational energy requirements would more than offset construction energy requirements and thus, in the long term, result in a net savings in energy usage.

The EA should identify any energy conservation measures that will be implemented as a part of the Preferred Alternative. Measures to conserve energy include the use of high-occupancy vehicle incentives and measures to improve traffic flow.

Construction Impacts

Potential impacts associated mainly with transportation construction activities should be considered for each alternative. These may include, but are not limited to, the following:

- Economy and employment
- Access
- Water quality
- Air Quality
- Noise
- Utilities
- Vibration

Features Mapping

Once all environmental resources have been confirmed through detailed field investigations, a features map (or series of maps) showing the various resources in the study area should be created.

Coordination

As the various environmental resources are being evaluated, coordination with the resource agencies, municipal officials, and others should be conducted as appropriate. All technical data collected and technical reports prepared will become part of the Technical Support Data.

NOTE: It may be necessary to do additional field studies as the Process proceeds. As alternatives are developed, avoidance, minimization, and mitigation are considered in addition to public and agency input. It may be necessary to obtain or add more detailed data for specific resources. Additional consideration should be given to the level of detail needed to comply with other applicable federal and state regulations such as Section 4(f), Section 106, Chapter 105, Section 404, PA Acts 100/43, etc.

E. Conduct Impact Analysis. As alternatives are further developed, the impacts of each alternative on natural, cultural, and socioeconomic resources can be assessed in more detail than was performed in the pre-TIP process phases as appropriate. As environmental impacts are calculated, it will be necessary to reexamine the design of the alternatives in an attempt to discover shifts or design measures that avoid or minimize specific impacts. In this sense, alternatives development and impact analysis processes are iterative processes, meaning they require repeated analyses as additional resource information or alternative design modifications/shifts are generated.

Both quantitative and qualitative assessments should be performed. It is important to analyze not just quantitative impacts but also qualitative impacts to help explain the importance of the resource and the intensity of the associated impact and to allow better comparison between alternatives.

It should also be noted that the design scale originally chosen for alternatives development may need to be revisited as impacts are analyzed. Where more detailed design in a specific location would differentiate between impacts on two alternatives or would show more clearly whether a significant impact does or does not occur, it might be beneficial to do the more detailed engineering.

F. Hold Preliminary Engineering/Environmental Study Public Meeting. PennDOT's Public Involvement/Public Hearing Procedures indicate that public meetings should be held, when appropriate, at various stages during project development. These meetings are held to obtain input regarding the public's interests, concerns, priorities, and perceptions and inform the public about the project status in accordance with the procedures outlined in PennDOT's Public Involvement/Public Hearing Procedures. (See Publication 295, *Project Level Public Involvement Handbook*.) In addition, public meetings allow the Department to clarify issues, reduce misunderstandings, and alleviate conflicts.

All public meetings should be held at convenient times at accessible sites and in accordance with the requirements of the *Americans with Disabilities Act* (ADA) of 1990. Public meetings should be advertised in the project area. There are various methods to advertise such as block ads in newspapers, websites, variable message boards, etc., as outlined in Publication 295, *Project Level Public Involvement Handbook.*

Generally, at some point during alternatives development and impact analysis, at least one public meeting should be held to obtain input on the development of alternatives and potential impacts to the environment. All public comments received should be included in the Technical Support Data. Public comments should be considered and refinements to the alternatives should be made as appropriate.

NOTE: The earlier that input is gathered from the public and public officials, the sooner issues can be addressed and resolved.

Other public involvement methods such as project newsletters, brochures, public service announcements, news releases, neighborhood meetings, focus groups, fliers, posters, Internet sites, and citizens advisory committees can be implemented as appropriate and where warranted during alternatives development.

G. Coordinate with Resource Agencies. As the alternatives are being developed and impacts are assessed, coordination with the resource agencies should continue. Input received from the resource agencies and the public during the pre-TIP process phases was considered during alternatives screening. In the NEPA process, the Agency Field View and public involvement are considered in the evaluation of alternatives developed in the pre-TIP process phases and potential development of additional alternatives. As environmental resources are better defined, the resource agencies are consulted to provide expert assistance, help with field analysis or provide approvals/concurrences for various analyses. It may be appropriate to present the project at an Agency Coordination Meeting (ACM) for agency input. (See Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Section 3.2.A.1.)

EXAMPLES: The PFBC may assist with stream survey (e.g., electrofishing) and fish identification. The PGC and USFWS may assist in conducting habitat analysis for threatened or endangered species. The USCOE will make a jurisdictional determination on wetland boundaries. The PHMC will be consulted on the determinations of eligibility and effect and boundaries of historic properties.

Preliminary impact calculations can be made once the environmental resources are defined and alternatives are developed. At this point, consider possible avoidance and minimization measures and incorporate appropriate shifts and other measures to reduce environmental impacts. Remember, the process of alternatives development and impact analysis is iterative. It is advisable to review impacts with the various resource agencies during this iterative process to ascertain their primary concerns and resolve issues.

NOTE: Continued coordination with the resource agencies generally facilitates the resolution of issues and issuance of required permits and approvals.

H. Reassess NEPA Class of Action. Once the alternatives are developed and environmental impacts have been calculated, it should be clearer whether or not the project involves significant impacts. This is a good point to step back and reassess whether to elevate the project to an EIS or to downscope the project to a CEE. If it is determined that a CEE or an EIS should be prepared instead of an EA, the Originating Office must coordinate this reclassification with HDTS, EPDS, and the FHWA Division Office, as previously discussed.

If the project is determined to involve significant impacts and is reclassified as an EIS, Chapter 5 should be used to complete the Preliminary Engineering/NEPA Decision Phase of the Process. If it is determined that the project does not involve significant impacts, a decision needs to be made to downscope the project to a Categorical Exclusion (CE) or to continue as an EA to a Finding of No Significant Impact (FONSI). If it is agreed that the project should be completed as a CEE, Chapter 2 should be followed.

If it is still unclear as to what level of documentation is necessary for this project, studies should continue to develop mitigation measures, identify a Preferred Alternative, and identify the significance of the Preferred Alternative's impacts on the environment.

NOTE: If impacts are determined to <u>not</u> be significant, it is not necessary to downscope to a CE at this point in the process. The project can continue as an EA and finish with a FONSI.

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4.7 DEVELOP MITIGATION AND IDENTIFY PREFERRED ALTERNATIVE

According to 40 CFR §1508.20, mitigation includes:

- Avoiding the impact altogether by not taking a certain action or parts of an action
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action
- Compensating for the impact by replacing or providing substitute resources or environments

Mitigation measures should be considered and developed at this point in the process to minimize unavoidable environmental impacts of the alternatives on various resources. The Preferred Alternative decision will take into account engineering factors, ability to meet project needs, environmental impacts and mitigation measures, public and public officials input, input from resource agencies, and overall costs. All factors will be weighed and balanced to identify the most reasonable alternative. Mitigation is a consideration in determining whether an impact is significant or if a FONSI is appropriate.

A. Develop Mitigation Measures. Depending on the anticipated environmental effects of the proposed project, mitigation may be warranted for specific impacts. Mitigation measures should be considered and developed at this point in the process to minimize the impacts of the alternatives on various resources after avoidance and minimization of the impacts have already been taken into account. The ability to mitigate impacts could improve the acceptability of an alternative to the public and the resource agencies.

Mitigation measures considered will vary from project to project with the specific impacts of the project alternatives. Some resources such as streams, wetlands, productive agricultural lands, Section 4(f) properties, and cultural resource properties may, under the jurisdiction of other laws and regulations, require avoidance alternatives to be evaluated or mitigation for unavoidable impacts. With other resources, mitigation requirements may not be as structured.

Displaced residences, businesses, and properties will be acquired in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as amended, Title VI of the Civil Rights Act and the PA Eminent Domain Code. A commitment is generally made to consider noise abatement during Final Design where warranted (where noise levels are projected to approach or exceed established criteria) and implement abatement measures where feasible and reasonable. Adverse effects on historic properties will be mitigated in accordance with the mitigation measures outlined in the MOA/Programmatic Agreement (PA) in accordance with the Section 106 process. If necessary, data recovery efforts will be undertaken for unavoidable impacts to significant archaeological sites. Procedures for determining the amount of waste and appropriate measures to clean up waste sites will be outlined. Wetland replacement sites and opportunities for stream enhancements to offset wetland and stream impacts will be explored. Other mitigation measures, as appropriate, will be considered for other affected environmental resources.

As mitigation measures are explored, coordination should be undertaken with the resource agencies, the public, and others as appropriate. The PHMC and Advisory Council on Historic Preservation (ACHP) (if they elect to participate) will be involved in the preparation of an MOA/PA for adverse impacts to cultural resources. The USCOE, PA DEP, EPA, and other agencies generally provide input into wetland mitigation. The PFBC, PA DEP, and the USCOE often contribute towards identification of stream mitigation opportunities. The USFWS and appropriate state resource agencies are generally concerned with threatened and endangered species. The public/municipal officials may play a role in identifying other appropriate mitigation measures to reduce impacts on the communities.

The level of coordination/detail required in developing mitigation measures is project specific. The resources impacted and the magnitude of the impacts, together with opportunities for mitigation and pertinent regulatory requirements all play a role in the magnitude and detail of the mitigation commitments. For example, the

Endangered Species Act states that compensatory mitigation for impacts to Federally protected species is not appropriate or considered, and that only avoidance or minimization of impacts is appropriate. For some resources, mitigation commitments and possibly conceptual plans for carrying out those commitments must be coordinated with and agreed upon by a specific resource agency in order to comply with specific regulatory requirements. Mitigation should be commensurate with the impacts. However, no commitment for mitigation should be made until concurrence is received from HDTS and FHWA.

Once mitigation has been identified, track the commitments by utilizing the Environmental Commitments and Mitigation Tracking System (ECMTS) Process outlined in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix T. Create a draft matrix to go with the EA and modify it (if needed) after the FONSI is issued.

B. Conduct Alternatives Analysis Public Meeting. At this point in the NEPA process, a public meeting is generally held for the project. At this meeting, detailed information on the project alternatives should be presented to the public as well as a summary of agency input and follow-ups on any items of concern expressed previously by the public. Comments received at the previous public meeting should be addressed and presented at this meeting. The purpose of this meeting is to present all alternatives to residents in the study area, and to gauge their opinions toward these options. The Department will use input received at this public meeting as one of many factors in identifying a Preferred Alternative (if multiple alternatives are under consideration).

NOTE: If a Public Meeting was already held earlier in the NEPA process and the Department plans to hold a public hearing for the project, it may not be necessary to hold a Public Meeting at this point unless there is substantial additional information to present to the public that would likely influence the identification of a Preferred Alternative.

The public meeting should be held in accordance with the procedures outlined in PennDOT's Public Involvement/Public Hearing Procedures, which are contained in Publication 295, *Project Level Public Involvement Handbook*.

It is important not only to maintain a thorough written record of all public and agency comments, but also to carefully document all comments gathered through public involvement activities. These should be incorporated into the project Technical Support Data.

C. Identify Preferred Alternative. Once all environmental field data has been collected and alternatives have been developed and refined based on impact analyses, public input, and agency consultation, the Preferred Alternative can be identified (if the EA involves multiple alternatives). The Originating Office should consult with HDTS, EPDS, and the FHWA Division Office in making a recommendation on a Preferred Alternative.

The following should be considered in identifying a Preferred Alternative:

- Ability of each alternative to meet the project needs and fulfill the project purpose
- Environmental impacts associated with each alternative and mitigation measures
- Input from the public and public officials
- Input from the environmental resource agencies
- Incorporation of Department project delivery principles (Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 1)
- Desirability of the engineering design
- Construction and maintenance costs

The Project Team should draw upon their collective best judgment and strive to identify the most reasonable alternative that fulfills the project needs and meets appropriate engineering design criteria while resulting in the fewest impacts to the natural, cultural, and socioeconomic environment. The opinions of the public, public officials, and resource agencies also factor into the decision, as does the cost-effectiveness of the alternative, and the ability of the alternative to address other regulatory requirements like Section 404, Section 106, Section 4(f), Section 7, etc. The identification of the Preferred Alternative is documented in the EA.

D. Continue Section 401 WQC/Section 404 Permit Process (if appropriate). If the proposed project will require the issuance of a Section 404 Permit by the USCOE (and the corresponding Section 401 Water Quality Certification (WQC) from the PA DEP), and it has been agreed during the Scoping process that the project should proceed forward under the Integrated NEPA/404 Process, consultation with the agencies regarding this process should be continued during the NEPA process. The Integrated NEPA/404 Process is also discussed in Publication 10, Design Manual Part 1, *Transportation Program Development and Project Delivery Process*, Chapter 10.

The Integrated NEPA/404 Process affords an opportunity to streamline project delivery and Section 404 permitting processes by advancing them concurrently. In many cases, the USCOE is able to adopt the Department's environmental document as their NEPA document for permitting purposes, use it to support the permit application process, and jointly host the public hearing that is generally required for both agencies' respective processes. To secure the Section 404 Permit, it is also required that a Section 401 WQC be obtained from the PA DEP; hence the need to undertake coordination with both the USCOE and the PA DEP.

To initiate this process, a draft Section 404 Permit Application Package, including the 404 (b)(1) alternatives analysis, and separate Section 401 WQC Request Package should be prepared and submitted to the USCOE and PA DEP, respectively, for review. Follow-up meetings should be scheduled with each of the agencies to review the content of the packages. The Section 401 WQC Request Package to the PA DEP must include a copy of the PA DEP's Environmental Assessment Form (EAF) pursuant to their regulations. A conceptual mitigation plan, discussion of Erosion and Sediment Control commitments, references to the implementation of Best Management Practices (BMPs), and a copy of the EAF may also be required at the time the formal request for the 401 WQC is made. (The EAF can reference sections of the EA if appropriate: therefore, when using the integrated process, the discussion of water resources in the EA should reference technical reports that include a greater level of detail than is included within the text of the EA sections.) Based upon the comments received, the packages should be revised so that they may be formally submitted towards the end of this phase, prior to the beginning of the NEPA Decision consideration.

NOTE: The PA DEP EAF referred to here is specific to the Chapter 105 Permit/Section 401 WQC process.

Guidance regarding the Integrated NEPA/404 Process and obtaining the Section 401 WQC has been prepared and is available through EPDS.

NOTE: If the integrated NEPA/404 Process is not utilized for the project, the Section 404 and Chapter 105 permitting processes typically would be initiated during Final Design, although agency coordination is ongoing throughout the Process.

E. Reassess NEPA Class of Action. At this point in the Process, detailed field studies have been conducted to identify environmental resources, engineering parameters have been set, public and agency input has been received, alternatives have been developed, impacts have been analyzed, and avoidance, minimization, and mitigation measures have been explored. With this detailed information, it should be possible to make a final determination of the appropriate class of NEPA documentation to be prepared for the project.

If it is clear that the project will result in significant impacts and/or there is a high level of public controversy on environmental grounds, the project should be elevated to an EIS. If it is clear that the project will not result in significant impacts and only one alternative is to be considered further, then a decision should be made whether to downscope to a CEE, or to complete the EA and request a FONSI. The benefits of downscoping to a CEE versus completing the EA process this far into the EA process would be determined on a project-by-project basis in coordination with HDTS, EPDS, and FHWA.

NOTE: "Controversy on environmental grounds" is different from "controversy" based on an opinion that a project should not be constructed. Controversy on environmental grounds will have some basis in factual information related to one or more specific project impacts. Controversy from a "not in my backyard" (NIMBY) opinion would not be grounds for elevation of an EA project to an EIS.

NOTE: Remember, the Originating Office must consult with HDTS, EPDS, and the FHWA Division Office when reclassifying an EA project to an EIS or CEE.

When downscoping to a CEE is being considered this far into the EA process, consider the following:

- EAs require that either a public hearing be held or the opportunity for a public hearing be advertised; CEEs generally do not require a public hearing.
- EAs require a comment period of 30 days in accordance with PennDOT's Public Involvement/Public Hearing Procedures, or 45 days if a Section 4(f) Evaluation accompanies the EA; CEEs do not have a comment period.
- EAs must be approved by the FHWA Division Office, whereas CEE Levels 1a and 1b are approved by PennDOT. (CEE Level 2 documents are approved by the FHWA Division Office.)
- Before an EA is sent to FHWA to request a FONSI, a package of materials must be prepared including any necessary revised EA pages, responses to comments received during the comment period, and testimony received at the public hearing (if held).

NOTE: Downscoping a project to a CEE will require the creation and completion of a new package in the CE Expert System.

NOTE: When the project involves an individual Section 4(f) Evaluation, the Draft Section 4(f) Evaluation must be circulated to the agencies with jurisdiction for a 45-day comment period, regardless of the type of NEPA document prepared for the project. During this comment period, the FHWA Division Office will send the Draft Section 4(f) Evaluation for conditional legal sufficiency review (30-day review). Additionally, the FHWA Division Office will then send the Final Section 4(f) Evaluation for a 15-day legal sufficiency review. This 15-day legal sufficiency review is in addition to and following the 45-day Draft Section 4(f) Evaluation comment period.

In some cases, a project with a significant impact can still be completed as an EA rather than being elevated to an EIS. Where impacts for the Preferred Alternative are found to be significant but the mitigation commitments designed for the alternative are such that they can lessen the impacts to a non-significant level, then a FONSI can still be issued. One way to achieve this goal is to coordinate with the appropriate resource agency(s) to obtain input on possible mitigation techniques. This coordination will promote the development of mitigation acceptable by the agencies, FHWA, and PennDOT. In some instances, more than conceptual mitigation will need to be examined in order to make the determination that there will not be significant impacts to the resource(s). Mitigation should be commensurate with the impacts. The mitigation measures must be detailed in the EA to demonstrate that the alternative would have no significant impact on the environment once the mitigation measures are implemented. The mitigation commitments, including appropriate conceptual plans, are detailed in the EA.

If the significance of impacts or public opposition is such that it is appropriate to prepare a different class of NEPA document, documentation should be submitted by the Originating Office to HDTS for review and forwarding to the FHWA Division Office to request a change in the NEPA document classification. This documentation should provide information that demonstrates why the impacts are considered to be at a level of significance different from an EA. Concurrence should be requested to reclassify the project. Once reclassified, the project should continue using the process designed for the new class of NEPA document.

If the project is reclassified as an EIS, Chapter 5 should be used to complete the NEPA process. If it is determined that a CEE should be prepared, the guidelines provided in Chapter 2 should be followed.

NOTE: When moving from one class of NEPA documentation into another, the Process does not start over. Information gathered and analyses conducted are incorporated into the new document and the Process continues at the appropriate phase in the Process.

4.8 PREPARE THE EA

As various steps of the NEPA process have been completed and technical reports have been prepared, sections of the EA can begin to be drafted based on the analysis performed and reports generated. Prepare the project's EA to document project development and demonstrate that the project would not result in significant impacts.

A. How to Approach EA Preparation. NEPA's purpose as stated in the Council for Environmental Quality (CEQ) regulations is to promote better decisions and foster excellent action. Analysis of impacts should be conducted at the appropriate level of detail to provide meaningful input into the decision-making process. All resources should be discussed in the EA in proportion to the importance of the associated impacts.

When preparing the EA, the goal is a quality document that is also concise and engaging to readers. This can be achieved by incorporating the interrelated principles discussed below.

Tell the project story. NEPA is a process. The EA should clearly and concisely tell the story of how the project was developed. The reader should easily understand the purpose and need for the project, how the alternative(s) meet those project purpose and needs, what the impacts of those alternatives would be, and the reasoning and justification as to how a preferred alternative was selected.

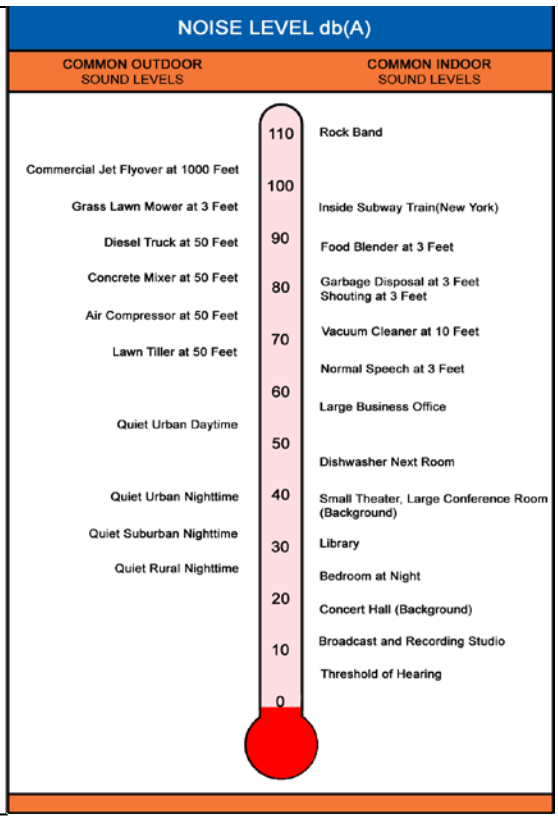
Utilize a structured document outline. The next section discusses the recommended outline of an EA. This outline forms the structure in which to tell a project's story. The project team should discuss and agree to a project's EA outline prior to the start of its preparation to ensure that the approach is appropriate for that particular project. There can be flexibility on a project-to-project basis (such as a question-and-answer format), but the Department and FHWA must agree on any variations from the recommended outline.

Remember the EA target audience. The audience of an EA is the general public, public officials, regulatory and resource agencies, and decision-makers. It provides information for public and agency consumption and comment prior to decisions being made and actions being taken. Keep this in mind with the concepts that follow below. Not all readers are experienced transportation professionals.

Write clearly and use plain language. Keeping the range of the EA audience in mind, it is very important to draft the EA so that information, concepts, and analysis can be understood by all readers.

- ***Define technical terms.*** Most readers of EAs are not transportation professionals and are not familiar with engineering and environmental terminology. Technical terms that go undefined can be viewed by readers negatively as "jargon", perceiving it as obscure and pretentious. To communicate effectively, it is important to define these terms when they are used in the EA. Use words and explanations in the definition that people can relate to. One technique that can be used is adding sidebars or boxes in the EA to visually highlight the explanation of terminology. Sometimes terms and concepts may be best explained through a visual graphic. For example, the different levels-of-service (LOS) can be shown in a graphic in the EA to visually explain the difference between an LOS A and an LOS D by how congested a roadway is with vehicle traffic.

EXAMPLE OF DEFINING TECHNICAL TERMS (Noise):
Noise is measured in decibels (dB). To account for human sensitivity to noise, decibels are measured on the A-weighted scale (dB(A)). The A weighted scale is the preferred measurement for traffic noise because it is comprised of the sound level frequencies that are most easily distinguished by the human ear, out of the entire sound level spectrum. Highway noise is categorized as a linear noise source, where varying noise levels occur at a fixed point during a single vehicle pass by. These fluctuating noise levels can be characterized by a single number known as the equivalent noise level (L_{eq}). The L_{eq} is the value of a steady state sound level that would represent the same sound energy as the actual time varying sound evaluated over the same time period. The highway traffic noise analysis focuses on the hourly, A weighted L_{eq}. For example, a diesel truck 50 feet away would have a L_{eq} of approximately 90 dB(A). The figure to the right shows typical indoor and outdoor noise levels.



- ***Spell out acronyms often and/or limit their use.*** Transportation project development contains many acronyms specific to the industry that are not known by the public. Do not isolate readers by making them guess what something stands for. Use acronyms when they are necessary, spelling them out at their first use and as appropriate thereafter. A list of acronyms can also be provided to help guide readers.

- ***Write in the active voice.*** Active voice, versus passive voice, is clearer to understand and is more concise. Passive voice can lend itself to confusion and interpretation due to more "wordy" statements than active voice to convey information and conclusions.

  Passive voice: Approximately 830 feet of Mill Run would need to be relocated with the Preferred Alternative.

  Active voice: The Preferred Alternative would relocate approximately 830 feet of Mill Run.

  Passive voice: Wetland boundaries were delineated and impacts from each alternative calculated.

  Active voice: The project team delineated wetlands and calculated each alternative's impacts.

- ***Avoid confusion from ambiguous or opaque discussion of analysis.*** The process and conclusions drawn must be unmistakable. All readers should come away from the EA with the same understanding of the story of project development and results of impact analysis.

Use effective graphics and visual elements. Well-thought out visual elements and graphics in an EA can assist readers in their review and comprehension of a project and its development. Think about layout and the incorporation of graphics from the start of EA document development. As information and analysis is pulled from technical reports, consider creative ways to visually present the information so that non-technical readers can understand. While documents are usually drafted initially in Microsoft Word for ease of editing and tracking changes and comments, desktop publishing software like Adobe InDesign can be used by graphics professionals for the final document. Those programs are useful in creating an eye-pleasing document with many easy design layout options.

- ***Easy-to-read text.*** Consider the choice and size of font that can assist readers in more easily reading a document. Some fonts lend them self to being easier on the eyes than other fonts.

- ***Text and graphics belong together.*** Do not separate pictures and figures from text by inserting them always on the next page or at the very end of a section or the document. It is more effective to have a graphic on the same page as the text referencing and/or discussing it. It disrupts a reader's review if he or she needs to go searching for something on another page and need to flip back and forth.

- ***Think through the use of tables.*** While tables can be a useful tool to display information, be thoughtful in how they are incorporated into an EA. Sometimes a table is not the best way to compare particular data or to assist the reader in following how a conclusion was drawn. Define the true point of including a particular table and evaluate whether it achieves the goal or misses the mark. A modification in format, such as a table versus a bar chart or a pie chart or an enhanced map can provide a reader with more focused attention on specific information or a focused comparison.

- ***Include graphs, charts, maps, photos, and illustrations with useful information.*** As noted above with tables, define the true point of a graphic and evaluate whether it achieves its goal. Maps should have well-defined legends to assist the reader in interpreting various features and designations.

- ***Choose colors for graphics wisely.*** Use colors consistently throughout the document. Avoid too many bold colors and the color red unless a particular point is trying to be made. Keep in mind that a certain percent of the population is color-blind and may have difficulty distinguishing between some shades on a graphic.

Be concise and summarize key findings. Remember that an EA is prepared when it is unknown whether the project will result in significant impacts. All resources should be discussed in the EA in proportion to the importance of the associated impacts. The EA should be brief but it also needs to include the important technical information for both agency and legal review. NEPA regulations support the development of concise documents that summarize key findings of technical reports or other technical studies but they must be ***incorporated into the EA by reference***. For the benefit of readers, the referenced technical reports can be included on a CD or via a website for easy access. Technical reports are only prepared for a project as needed or appropriate.

Utilize a document editor. Often an EA is developed by multiple members of the project team from multiple disciplines (engineering and environmental). When more than one author contributes to the drafting of an EA, a technical document editor can play an important role in achieving a common voice and writing style throughout the document. This person should have experience in the preparation of NEPA documents and what they need to contain in order to be concise, well-edited yet legally sufficient. To accomplish this, the role of the editor is to lead the discussions in determining the document format and framework, coordinate with technical engineering and environmental staff and graphic designers, and edit the document to achieve a single voice. Quality assurance/quality control by the editor is also essential from editorial quality, technical validity, legal sufficiency, and overall effectiveness perspectives.

Meet All Legal Requirements. While developing a concise document, ensure that the EA meets all legal and regulatory requirements. The discussion and substance of the analysis must be valid and understandable. There must be evidence that the decision is not arbitrary and capricious. There must be a full and fair discussion of the decision-making process. Supportive technical reports and information is incorporated by reference.

Material incorporated into the EA by reference needs to be reasonably available for inspection by potentially interested persons within the time allowed for comment. All Technical Support Data must be made available to the public and the resource agencies upon request when the EA is available for public comment. (See Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix F.)

NOTE: Keep in mind that conclusive statements should not be made without inclusion of, or summary and proper reference to, data/information that supports that conclusion. This is necessary to ensure that the document is legally sufficient.

NOTE: For more information on quality EA documents, refer to AASHTO's *Improving the Quality of Environmental Documents* (May 2006), A Report of the Joint AASHTO/American Council of Engineering Companies (ACEC) Committee in cooperation with FHWA. Additionally, AASHTO's *Practitioner's Handbook 15: Preparing High-Quality NEPA Documents for Transportation Projects* (2014), is a source for guidance.

EXAMPLES: Refer to AASHTO/FHWA's *Examples of Effective Techniques for Improving the Quality of Environmental Documents* (2014) for actual project documentation examples from other states.

B. EA Organization and Content. This section discusses the recommended outline for an EA. This outline forms the structure in which to tell a project's story. The project team should discuss and agree to a project's EA outline prior to the start of its preparation to ensure that the approach is appropriate for that particular project. There can be flexibility on a project-to-project basis (such as a question-and-answer format), but **the Department and FHWA must agree on any variations from the recommended outline below.**

Recommended EA Outline	
Cover	The EA cover should include the following information at a minimum: • Project name • State route (SR) number and section • Originating Office (District Office) • PennDOT and FHWA names/logos • Date of FHWA approval to make the EA available
Table of Contents	A table of contents assists readers by providing the EA outline and associated page numbers for easy reference.
Introduction and Purpose and Need	This section is the foundation of the NEPA process, and the EA and should clearly demonstrate a "need" exists in terms understood by the general public. Describe the problems present in the study area and the intended objectives to be achieved by the proposed project. • Define the study area. o Provide a map that shows all of the study area. The map should be broad enough to provide a project location in relation to other recognized locations. The study area boundary, a scale, and a directional indicator must be included on this map. • Explain the history and background of the project. • ***Project purpose:*** State the overall goals to be achieved by a proposed transportation improvement. The project purpose statement is typically no more than a few sentences. • ***Project need:*** Include statements that relay the specific transportation problems and/or deficiencies which have resulted in the search for improvements. Consideration should also be given to community goals in developing the project need. The project need should be based on technical information and should be phrased as *problem statements*. Each problem statement should be followed by a few sentences or a paragraph explaining how it is known that this problem exists. Technical data and reports should be referenced as appropriate and be included in the Technical Support Data. More information on purpose and need can be found in Publication 319, *Needs Study Handbook*.

Alternatives Considered	In this section, *all* possible solutions (alternatives) considered during the development of the proposed project are identified and briefly described. • This description should include information such as project endpoints, project length, existing/proposed number of lanes, width of proposed lanes/shoulders, and any other special features that define the proposed improvement. • A map with discussed alternatives should also be included. • All alternatives that were considered in the pre-TIP process phases should also be discussed, even if they were eliminated from further consideration through alternatives screening. • The No-Build Alternative must be considered for all projects. Explain the alternatives screening criteria used for the project. Discuss the rational of how alternatives were eliminated from further consideration or carried forward through the process. Incorporate by reference any prepared alternatives analysis technical report.
Environmental Resources, Impacts, and Mitigation	This section presents a discussion of impacts for each of the reasonable alternatives, those alternatives that are advanced through the alternatives screening process and meet the project purpose and need. Present information in a neutral and objective manner. Weigh the amount of discussion towards environmental impacts of most relevance to the decision making process. Resource-by-resource, include the following: ***Methodology:*** provide a brief statement identifying the methodology(ies) used to identify and evaluate the resource within the study area. All methods of data collection should be summarized to document the sources from which the information was obtained. Detailed references should also be cited in the references listing included as an appendix. ***Existing conditions:*** The existing conditions for a resource should be presented as a brief narrative describing the individual social, economic, natural, or cultural feature that is being affected. This information should be as recent as possible and should be verified if data sources have not been updated. ***Impacts:*** Include a listing or narrative description of the anticipated impacts to the resource associated with each alternative under study. It is important that this narrative describes both the quantity and the quality of the impact. For instance, it is not sufficient to provide only an area (hectare/acre, square meter/square feet, etc.) amount of impact. The impact narrative should also identify the function and quality of the impacted resource. Include a discussion of indirect impacts, if applicable. Highlight important differences among the alternatives' impacts to resources. ***Environmental features/constraint mapping:*** A graphic of the resources (when possible) and potential impacts should be inserted within the chapter or included in the appendix. For some projects, it may be preferable to include one environmental features graphic which depicts all of the environmental resources for the entire study area. In other cases, a series of maps showing environmental features may be necessary to present a clear picture.

	Minimization/Mitigation: Summarize the proposed mitigation efforts which are recommended to minimize and/or mitigate the impacts resulting from the project. If mitigation strategies are different for the individual alternatives, each alternative's mitigation strategies should be presented. Detailed technical data should be summarized in the EA with appropriate references to the technical documents provided.
Public Comment and Agency Coordination	This section documents the coordination undertaken with agencies and the public throughout the course of the project development process. Include early coordination, including scoping. Note meetings held with various stakeholders - groups, individuals and agencies. Include key issues and pertinent information received from the public and agencies.
Section 4(f) (if applicable)	An Individual Section 4(f) Evaluation can be included as a separate section of the document after the appendices or as its own chapter of the EA.
Comparison and Selection of Alternative	This section of the EA should identify the Preferred Alternative and summarize the reasoning for this recommendation. This summary should document the consideration of the project need, the study objectives, and the major differences between the impacts of the alternatives. Additional considerations which may be included in this summary include: safety issues, local opinions, resource agency input, policies and master plans, and the cost/benefit consideration both in relation to mobility and adverse effects to the environment. (Although an alternative may be identified as the Preferred Alternative in an EA, final selection of an alternative for an EA project is not official until the FONSI has been issued by FHWA.) Throughout the development of the EA, efforts were made to avoid and minimize the impacts of the alternative(s) on sensitive resources. List the impacts of the Preferred Alternative and the mitigation efforts which are recommended to make the alternative a more environmentally sensitive course of action. Both mitigation commitments and appropriate conceptual mitigation plans should be described. A summary of any monitoring efforts for each affected resource that are reasonably identifiable during and after construction should also be included.
Appendices	• Design Plans • Environmental Features/Constraint Mapping (this may instead be included in the Environmental Resources, Impacts, and Mitigation chapter as part of the existing conditions section) • Agency Correspondence o Correspondence with the resource agencies relevant to jurisdictional issues and approvals for the project • Technical Support Data Index • EA Distribution List • List of Preparers o Names, qualifications, and project responsibilities for individuals who were primarily responsible for preparation and review of the EA

	• References o List all materials referenced throughout the text of the EA document. Reference information should note the author, title, origin of publication and date(s) of publication. Choose a method for citing these references throughout the EA and use that method consistently. The Originating Office and FHWA should discuss if there are specific other items that should be added to a project EA as an appendix item versus incorporated by reference and kept in the technical support data.

NOTE: On a project-by-project basis, it may be appropriate to provide a draft of the EA to resource agencies for review and comment prior to finalizing and making the EA available to the public, especially when mitigation is key to making the decision whether impacts may be significant. Coordinate with HDTS and FHWA to determine if this option should be used for a particular project.

4.9 EA AVAILABILITY

A. EA Reviewed and Forwarded to FHWA for Approval to Make Available. The approval process for the EA occurs in two stages as shown on Figure 4.2. The first is FHWA approval to make the EA available for public review and comment. The second stage is the final approval that results in FHWA issuance of the FONSI. The remainder of the NEPA process focuses on the review process to make the document available, the scheduling of the public hearing (if one will be held), and the review of public comments/testimony.

The review process required prior to circulation of the EA involves review by the District, Bureau of Project Delivery (BOPD) (interdisciplinary review), and FHWA. The Project Manager of the Originating Office is responsible for coordinating an in-house review of the completed EA and supporting documentation to ensure completeness, accuracy, and consistency with current state and Federal policies, procedures, and regulations. At the District Level, the Environmental Manager, the Assistance District Executive (ADE), and District Executive (DE) conduct an internal review of the document. Following their review, the Project Manager will notify HDTS that the document is available for their review and comment.

HDTS will organize and conduct an interdisciplinary review of the EA. This Interdisciplinary Review Team (IR Team) should involve technical experts from HDTS, EPDS, and Office of Chief Counsel. FHWA is an optional participant at this point. It may be beneficial for FHWA to review the EA in draft form, but it is not necessary. FHWA's formal review of the EA will occur upon PennDOT's request to make the EA available for public review/comment.

The responsibility for reviewing the detailed studies performed for Cultural Resources can be taken on by either a CRP at the Originating Office or EPDS. Once the IR Team completes its review, the HDTS Project Development Engineer (PDE) will notify the Originating Office, provide them with review comments and may schedule a meeting with the IR Team and Originating Office to discuss these comments, if appropriate. IR Team Meetings are most beneficial when the comments are numerous and/or substantive. Discussion of the comments can clarify the reviewers' intent and provide a forum for determining how best to address them. In addition, conflicting comments can be resolved at this meeting.

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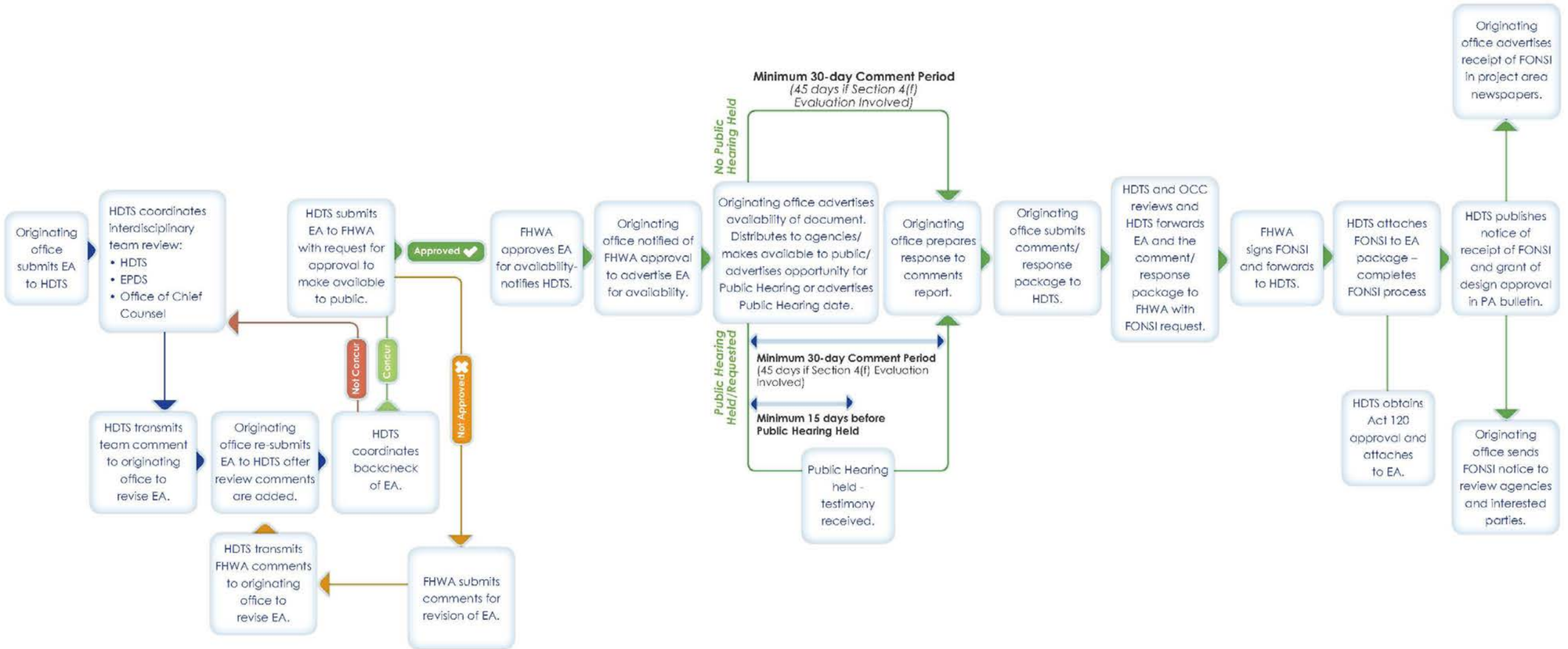
FIGURE 4.2 – EA APPROVAL PROCESS



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Once the original submitter has received comments, it is the responsibility of the Originating Office to make necessary revisions. Once the revisions are made an internal review by the Environmental Manager, ADE, and DE should be performed to approve the revisions. Once approved internally, the Project Manager should notify the HDTS PDE that the revised EA is again available for review. HDTS will coordinate a backcheck review of the EA and supporting documentation with EPDS and Office of Chief Counsel. This backcheck verifies that the IR Team's comments have been addressed. When HDTS is satisfied that all comments have been adequately addressed, they will typically forward two (2) hard copies and an electronic copy of the EA and attachments to FHWA requesting their review and approval to advertise the EA for availability for public review and comment.

B. FHWA Approves EA for Advertisement of Availability for Public Review and Comment. Similar to the review opportunity afforded to HDTS, FHWA will have an opportunity to review the EA prior to approving it for availability for public review and comment. If FHWA submits comments to HDTS, the original submitter will be notified by the PDE of the comments and will revise the document as appropriate. Following revision, the review process will need to be repeated to obtain concurrence, at which point the revised document is sent to FHWA for final review and comment.

When FHWA finds that the EA is adequate for advertisement of availability for public review and comment, the FHWA Division Office will provide approval to HDTS via letter or e-mail, to advertise the EA's availability. HDTS then informs the Originating Office of FHWA's approval. The FHWA Division Office will sign the EA cover sheet. Early notification of the approval gives the Originating Office the go ahead to forward the document to the printer and prepare a Notice of Availability/Public Hearing (or Opportunity for a Public Hearing advertisement). Upon FHWA approval, the Originating Office publishes a Notice of EA Availability/Notice of Opportunity for a Public Hearing (or Notice of Public Hearing date) in project area newspapers.

NOTE: The EA may need to be revised to address FHWA comments and be resubmitted through HDTS to FHWA prior to EA advertisement of availability.

NOTE: Since individual EAs will involve different resources and have differing degrees of impacts, the numbers of reviewers may vary; therefore, it is recommended that the Originating Office confirm with HDTS and FHWA the number of hard copy EAs that will be needed.

C. Advertise EA Availability and Conduct a Public Hearing (if necessary). In accordance with 23 CFR §771 and PennDOT's Public Involvement/Public Hearing Procedures, resource agencies and the public should have the opportunity to review and comment on the EA. The EA does not have to be officially circulated for comment, but at a minimum, it must be made available to the public upon request. Copies of the EA should be made available in the project area and the notice should identify these (and any other) locations. In addition, PennDOT must either hold a public hearing or offer the opportunity for a public hearing.

At a minimum, the EA should be made available for inspection at the Originating Office, the FHWA Division Office, and convenient location(s) within the project area such as local municipal offices and/or libraries. Documentation of the Notice of Availability should be included in the Technical Support Data.

Along with making the EA available for inspection, the Originating Office must distribute it to the following:

- Any agency, organization or individual requesting a copy
- The PA Act 120 review agencies
- The resource agencies involved, and the project area local/regional planning organizations
- If there is a Section 4(f) Evaluation, the officials with jurisdiction over the specific Section 4(f) resource(s), US Department of the Interior, and the USDA/HUD when applicable (See Publication 349, *Section 4(f)/Section 2002 Handbook* for details)

NOTE: EAs which include Individual Section 4(f) Evaluations require additional distribution due to Section 4(f) distribution requirements. (See Publication 349, *Section 4(f)/Section 2002 Handbook.)* The number of copies needed can be confirmed with HDTS/FHWA.

The Project Manager/Project Team will prepare a Notice of Availability of the EA/Notice for the Opportunity for a Public Hearing, or Notice of Public Hearing date. See Figure 4.3 for an example of a Notice of Availability of the EA/Notice of a Public Hearing block ad. This combined notice must be published in project area newspapers of general circulation. This is typically done in the form of a block ad. The notice could also be posted on a web page on the Internet if one has been designed for the project, or on the Originating Office's web site. The Notice of Availability and Notice of Opportunity for a Public Hearing typically are, but are not required to be, combined into one advertisement which informs readers of both the availability of the EA and either the opportunity for a public hearing or the actual public hearing date. The EA availability notice will identify the locations at which the EA is available for review, explain how to obtain a copy of the EA, provide direction on where to send comments, and when comments are due. For more information on how to prepare these notices, refer to PennDOT's Public Involvement/Public Hearing Procedures in *Publication 295, Project Level Public Involvement Handbook.*

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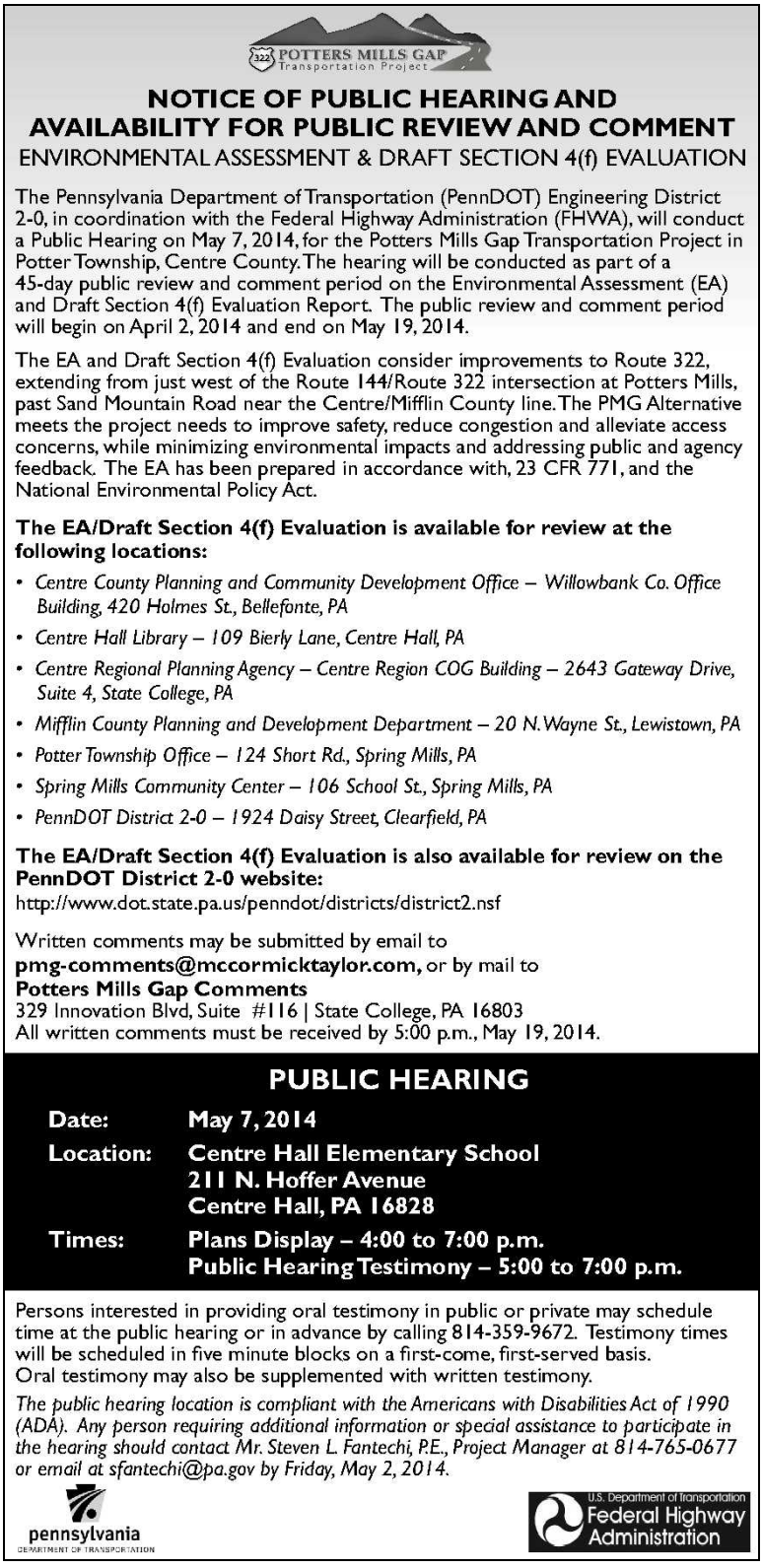
FIGURE 4.3
EXAMPLE NOTICE OF AVAILABILITY OF THE EA/NOTICE OF A PUBLIC HEARING BLOCK AD



POTTERS MILLS GAP
Transportation Project

NOTICE OF PUBLIC HEARING AND AVAILABILITY FOR PUBLIC REVIEW AND COMMENT

ENVIRONMENTAL ASSESSMENT & DRAFT SECTION 4(f) EVALUATION

The Pennsylvania Department of Transportation (PennDOT) Engineering District 2-0, in coordination with the Federal Highway Administration (FHWA), will conduct a Public Hearing on May 7, 2014, for the Potters Mills Gap Transportation Project in Potter Township, Centre County. The hearing will be conducted as part of a 45-day public review and comment period on the Environmental Assessment (EA) and Draft Section 4(f) Evaluation Report. The public review and comment period will begin on April 2, 2014 and end on May 19, 2014.

The EA and Draft Section 4(f) Evaluation consider improvements to Route 322, extending from just west of the Route 144/Route 322 intersection at Potters Mills, past Sand Mountain Road near the Centre/Mifflin County line. The PMG Alternative meets the project needs to improve safety, reduce congestion and alleviate access concerns, while minimizing environmental impacts and addressing public and agency feedback. The EA has been prepared in accordance with, 23 CFR 771, and the National Environmental Policy Act.

The EA/Draft Section 4(f) Evaluation is available for review at the following locations:

- *Centre County Planning and Community Development Office – Willowbank Co. Office Building, 420 Holmes St., Bellefonte, PA*
- *Centre Hall Library – 109 Bierly Lane, Centre Hall, PA*
- *Centre Regional Planning Agency – Centre Region COG Building – 2643 Gateway Drive, Suite 4, State College, PA*
- *Mifflin County Planning and Development Department – 20 N. Wayne St., Lewistown, PA*
- *Potter Township Office – 124 Short Rd., Spring Mills, PA*
- *Spring Mills Community Center – 106 School St., Spring Mills, PA*
- *PennDOT District 2-0 – 1924 Daisy Street, Clearfield, PA*

The EA/Draft Section 4(f) Evaluation is also available for review on the PennDOT District 2-0 website:
http://www.dot.state.pa.us/penndot/districts/district2.nsf

Written comments may be submitted by email to
pmg-comments@mccormicktaylor.com, or by mail to
Potters Mills Gap Comments
329 Innovation Blvd, Suite #116 | State College, PA 16803
All written comments must be received by 5:00 p.m., May 19, 2014.

PUBLIC HEARING

Date:	**May 7, 2014**
Location:	**Centre Hall Elementary School** **211 N. Hoffer Avenue** **Centre Hall, PA 16828**
Times:	**Plans Display – 4:00 to 7:00 p.m.** **Public Hearing Testimony – 5:00 to 7:00 p.m.**

Persons interested in providing oral testimony in public or private may schedule time at the public hearing or in advance by calling 814-359-9672. Testimony times will be scheduled in five minute blocks on a first-come, first-served basis. Oral testimony may also be supplemented with written testimony.

The public hearing location is compliant with the Americans with Disabilities Act of 1990 (ADA). Any person requiring additional information or special assistance to participate in the hearing should contact Mr. Steven L. Fantechi, P.E., Project Manager at 814-765-0677 or email at sfantechi@pa.gov by Friday, May 2, 2014.

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Federal Highway Administration

A cover letter should be generated to distribute the EA to prospective commentors. The letter transmitting the EA should request recipients' comments on the EA within the designated comment period.

NOTE: The distribution list for availability of an EA should be developed on an individual project basis to avoid needless distribution of copies of the document. The listing (found in the Help database of the CE Expert System) includes those agencies, organizations, etc. who typically receive copies of EAs; however, it is not meant to be a complete listing. Distribution of the EA should go to Federal, State, and local government agencies likely to have an interest in the project or have expertise for an area addressed in the EA. If uncertain whether an agency should receive a copy of the EA, it is recommended that a letter announcing the EA availability be sent as a courtesy. They may then request a copy of the EA if they so desire.

A notice for the opportunity for a public hearing must be placed in the local papers. The notice should state that interested parties should send a written request for a public hearing to the DE within 15 days. Requests received within the 15 days may be resolved by contacting the interested party and resolving the issues on an individual basis. If two or more unresolved requests remain, a public hearing must be held.

If it is decided at the onset, by the Project Manager, that a public hearing will be held, or if two or more requests remain unresolved after publishing the notice of opportunity for a hearing, the EA comment period will begin on the day the block ad announcing the availability of the EA and public hearing date appears in the local newspapers. In accordance with PennDOT's Public Involvement/Public Hearing Procedures, the EA must be made available for a minimum of 30 days (45 days if a Section 4(f) Evaluation has been prepared). The public hearing should be held at least 15 days after EA availability begins. A second block ad announcing the public hearing should be placed in the local newspapers 5 to 15 days in advance of the hearing.

NOTE: If the project involves an Individual Section 4(f) Evaluation, a 45-day review and comment period is required for the agencies with jurisdiction. This holds true regardless of whether or not a public hearing is held for the project.

Public hearings should be held in a convenient timeframe at a convenient location, and are subject to the requirements of the Americans with Disabilities Act of 1990. A moderator will be present to review the proposed project in accordance with PennDOT's Public Involvement/Public Hearing Procedures. In addition, a stenographer must be on hand to prepare a transcript of the public hearing testimony. Publication 295, *Project Level Public Involvement Handbook,* provides detailed information on how to plan and prepare for an effective public hearing.

NOTE: As part of the USCOE review of the Section 404 Permit Application, a public hearing may be required. In the event that the USCOE determines that a public hearing is required for the Section 404 Permit, and PennDOT determines that a public hearing is necessary as part of the EA process, a joint USCOE and PennDOT hearing should be held if the Integrated NEPA/404 Process is being implemented on the project.

If a public hearing is not held, the EA must be made available for public review for a minimum 30-day comment period beginning with the distribution of the document and the publishing of the Notice of Availability of the EA in the local newspapers.

NOTE: Fill in the milestone dates for the project's EA Notice of Availability Start and EA Notice of Availability End in the EA Package Document in the CE Expert System.

D. Project Team Reviews and Prepares Responses to Comments/Testimony. After the EA comment period closes, the Originating Office should compile the comment letters received and the public hearing transcript (if a public hearing was held). The Originating Office should then assess and consider the comments received in the following ways:

- Analyze the comment letters and public hearing transcript and identify and respond to *all substantive comments and issues*

- Determine if there are any environmental effects which are significant, or if the project is *controversial on environmental grounds*

- Determine whether there are any other factors present that could require preparation of an EIS

When responding to comments/testimony received, it is important to cite the information which supports the response. At this time, it may be useful to consult with the resource agencies if substantive environmental concerns have been raised at the public hearing or otherwise submitted during the comment period. In addition, it is also a good idea to coordinate with citizens, groups, or organizations that have raised substantive comments related to or generating public controversy.

Once the Originating Office has evaluated the public and agency comments/testimony, a Response to Comments Report or similar comment response package should be prepared. If required, pages of the EA should be revised as appropriate. HDTS will coordinate a review of the Comments Response and Revised EA Package received from the Originating Office with EPDS, the Office of Chief Counsel, and FHWA.

NOTE: All issues must be fully discussed and evaluated in the Response to Comments Report. If after the EA availability period, additional project information has been discovered (i.e., identification of T&E species) or public testimony or comments necessitate substantial or substantive revisions to the EA, it is advised that only the pertinent text pages be revised and replaced.

E. District Submits Request for Section 401 WQC and Applies for Section 404 Permit (if required). Under the Integrated NEPA/404 Process and associated guidelines, the Section 401 WQC and USCOE Section 404 Permit would be issued following the issuance of the EA NEPA approval (the FONSI) by FHWA. To initiate this process, it is necessary to formally submit the Section 404 Permit application and the Section 401 WQC request initially prepared and coordinated with the USCOE and PA DEP, respectively, prior to issuance of the FONSI. Each submission should include a copy of the completed EA **that has been approved for availability**. The permit application and WQC request should be submitted to the USCOE and the PA DEP by the DE. The Section 401 WQC must be approved before the USCOE can issue the Section 404 Permit.

As part of the USCOE review of the Section 404 Permit Application, a public hearing may be required. In the event that the USCOE determines that a public hearing is required for the Section 404 Permit, and the Department determines that a public hearing is necessary as part of the EA process, a joint USCOE/PennDOT hearing should be held. Procedures for planning and coordinating these joint hearings can be found in Publication 295, *Project Level Public Involvement Handbook.*

4.10 NEPA DECISION

A final NEPA decision is made either to select the No Build Alternative or select a specific alternative allowing the project to move into the Final Design/Construction Phase. For an EA, the decision document is the FONSI or the decision to prepare an EIS. Final Design is where the plans, specifications and estimates for constructing the project are prepared, and right-of-way is acquired. At this point, inclusion of the fully-funded project on the TIP/STIP and if necessary the Long Range Transportation Plan (LRTP) is also confirmed.

NOTE: At the point of the NEPA Decision, a project may be deferred from further consideration due to impacts, costs, or controversy identified during the Preliminary Engineering/NEPA Decision Phase.

A. Project Manager Sends Request for FONSI to HDTS. The Project Manager of the Originating Office prepares a letter to HDTS requesting that HDTS send a letter to FHWA requesting issuance of a FONSI. Additionally, the Comments/Response Package and other appropriate materials are provided to HDTS. The following items should be included in the package with the request for a FONSI:

- Summary statement regarding the significance of any environmental impacts
- Summary of EA availability and public hearing procedures (including advertisements)
- Copy of comments received during comment period
- Public hearing transcript (if held)
- Responses to all substantive comments received (by letter or public hearing testimony)
- Completed EA and any required supplemental material
- Request for FHWA issuance of a FONSI for the Preferred Alternative (draft letter)

B. HDTS Sends Request for FONSI to FHWA. Once the FONSI request package is reviewed, found acceptable, and it is determined that no significant environmental impacts are indicated, HDTS will submit copies of the package to the FHWA Division Office with a request for issuance of the FONSI.

NOTE: Since individual EAs will involve different resources and have differing degrees of impacts, the numbers of reviewers may vary; therefore, it is recommended that the Originating Office confirm with HDTS and FHWA the number of copies of the FONSI request package that will be needed.

The transmittal letter to FHWA will include a summary statement as to the significance of any environmental impacts, confirmation that a public hearing was held or the opportunity for one was provided, and a recommendation as to whether a FONSI is appropriate.

C. FHWA Issues FONSI. FHWA will review the Comment/Response and Revised EA Package and, if in agreement with the EA Package conclusions and recommendations, will prepare a separate written FONSI. This FONSI will incorporate by reference the EA and any other appropriate environmental documentation (e.g., wetland findings, floodplain findings, Section 4(f) determinations, mitigation commitments, etc.).

After the FONSI has been prepared and signed by the Senior Staff Professional, the FHWA Division Office will forward a copy of the signed FONSI to HDTS.

D. HDTS Publishes Notice in PA Bulletin and Originating Office Places Ad in Local Newspapers. After receipt of the FONSI from FHWA, HDTS prepares a letter to the Deputy Secretary for Highway Administration on behalf of the Secretary of Transportation requesting concurrence on the EA/Final Section 4(f) Evaluation and Pennsylvania Act 120 compliance. Upon receipt of concurrence, HDTS will then place an Environmental Finding in the *Pennsylvania Bulletin*. HDTS will transmit to the Originating Office a copy of FHWA's letter approving the FONSI, a copy of the signed FONSI, and a copy of the Act 120 compliance for the project. Additional information can be found in PennDOT's Public Involvement/Public Hearing Procedures in Publication 295, *Project Level Public Involvement Handbook*.

Although formal distribution of the approved FONSI is not required by Federal or State regulations, it may be advisable for the Originating Office to provide those agencies and individuals who commented on the EA with notification of the project decision and/or a copy of the FONSI. It is also recommended that once a FONSI is received from FHWA and the Act 120 compliance is complete, the Originating Office should announce to the public that this environmental decision has been made. This can be done by publishing a block advertisement in the project area newspaper(s). In this notice, describe the Department's selected course of action, explain that the project will proceed into Final Design, and announce that the FONSI is available to citizens upon request. Additional information regarding this block ad can be found in Publication 295, *Project Level Public Involvement Handbook*.

NOTE: Fill in the milestone dates for the project's NEPA Approval/FONSI and Act 120/Section 2002 Approval in the EA Package Document in the CE Expert System.

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E. Update ECMTS Report. Following FHWA issuing a FONSI, the Environmental Manager (or if applicable, the consultant) will update the ECMTS Report as needed. At this point, the District Project Manager will also sign and date Part 1 of the Mitigation Tracking System Signature Page. The District Project Manager will submit copies of the final ECMTS Report to the District Environmental Unit and Contract Management Engineer. For larger projects, copies of the report should also be sent to HDTS, FHWA, Assistant District Executive for Design, and Assistant District Executive for Construction. It is recommended that distribution of the ECMTS Report be completed by attaching it to the NEPA environmental document when it is approved and distributed. For more information on ECMTS procedures, see Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix T.

F. PA DEP Issues Section 401 WQC and USCOE Issues Section 404 Permit. Under the Integrated NEPA/404 Process, and based upon the USCOE regulations at 33 CFR §320, the Section 401 WQC must be issued before the USCOE issues the Section 404 Permit.[1] As such, the submission of the Section 401 WQC request should be made as early in the process as possible which will enable the PA DEP to act in a timely manner, and will ultimately facilitate the Integrated NEPA/404 Process so that the Section 404 Permit can be issued soon after the FONSI is issued by the FHWA for the project.

The PA DEP has a statutory limit of one year within which to complete their review of the Section 401 WQC request (33 USC 1341(a)(1)). Under a 1992 agreement with the USCOE, PA DEP has a 'reasonable' time limit of 160 days within which to process the Section 401 WQC request from the USCOE. PA DEP may request that the USCOE extend that review period up to the maximum of one year on a case-by-case basis. Failure to act within the allotted time frame results in the certification requirements of Section 401 being waived. Additional details on this process can be found in Publication 325, *Wetland Resources Handbook*.

NOTE: The USCOE must complete its own NEPA process. To do this, they can either accept FHWA's FONSI/decision or generate their own. The Section 404 permit will not be issued until the USCOE has issued its own FONSI (and or accepted that of FHWA).

G. Technical Support Data. The Technical Support Data file established at the beginning of this project should be updated to include all data and study materials associated with the EA. The Technical Support Data should contain all pertinent information gathered during the environmental evaluation. Supporting documents (wetland delineation reports, air and noise reports, etc.), telephone memorandums, and pertinent correspondence should be included in the file. Information in the file should be made available to the public for review upon request. A completed copy of the file should be maintained at the Originating Office. Additional information on developing project Technical Support Data can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix F.

4.11 RE-EVALUATE EA, IF NECESSARY

After approval of a FONSI, the Originating Office will consult with the FHWA Division Office prior to requesting any major authorization from FHWA to establish whether the EA FONSI remains valid. Major authorizations include Final Design, Right-of-Way Acquisition, Utility Relocations and Construction Authorization. For an EA project, the Originating Office must re-evaluate the project FONSI when:

- Submitting the Form D-4232 for a major authorization for the project. (This can be as simple as including the date of the FONSI on the Form D-4232; see criteria below on number of years elapsed and significance of changes.)

[1] Pursuant to Regulatory Guidance Letter (RGL) 93-1, the U.S. Army Corps of Engineers does have the authority to issue "Provisional Permits." The Provisional Permit is essentially a draft permit, which is issued prior to the State's issuance of a required Section 401 Water Quality Certification, and is not considered a valid permit until the State issues the Section 401 Water Quality Certification.

- Changes to the proposed project would result in potentially significant changes in the proposed action, affected environment, anticipated impacts or proposed mitigation measures. (Re-evaluation document likely to be necessary.)

- New information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in potentially significant environmental impacts. (Re-evaluation document likely to be necessary.)

The type of documentation required to document the results of each re-evaluation varies based on the time that has elapsed since issuance of the FONSI or last major authorization and the magnitude of the changes anticipated to occur. It may be appropriate to conduct public involvement activities to assist in determining the magnitude of the change.

- If **three years or less** have elapsed since issuance of the FONSI or the last major authorization and **no significant changes** have occurred, the date of the FONSI issuance must be placed on the new Form D-4232. Prepare documentation in some form (memo, summary, etc.) for the project file to explain there was no significant change.

- If **over three years** have elapsed since issuance of the FONSI or the last major authorization and the Environmental Manager determines that **no significant changes** have occurred, the following re-evaluation statement must be placed in the Form D-4232 to document the re-evaluation: "Based on the re-evaluation of the proposed project there have been no significant changes in the proposed action, the affected environment, the anticipated impacts or the proposed mitigation measures since original NEPA clearance was given." Prepare documentation in some form (memo, summary, etc.) for the project file to explain there was no significant change.

- When it is perceived that **potentially significant changes have occurred, as per the determination of the Environmental Manager, a re-evaluation document** addressing the significance of changes in the proposed action or environmental conditions as presented in each major section of the EA must be prepared. The EA may be used to prepare this re-evaluation document. When the EA is used to prepare the re-evaluation document, the document must be labeled as an EA Re-evaluation on the cover page.

  The review, concurrence, and approval process for the re-evaluation document is the same as was required for the issuance of the approved FONSI. The Originating Office should coordinate with HDTS on the completion of this documentation.

  Once HDTS concurs with the EA Re-evaluation document, it will send the standard Re-evaluation Transmittal Form along with the EA Re-evaluation document to the FHWA Division Office for approval. An example transmittal form can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C,* Appendix AA.

  When FHWA determines that the EA Re-evaluation is satisfactory, FHWA will check the "approved" block, sign and date the standard Re-evaluation Transmittal Form, and return it to HDTS. Upon receipt, HDTS will forward a copy of the signed Re-evaluation Transmittal Form with FHWA's approval to the Originating Office. A copy of the approved Re-evaluation Transmittal Form must be placed in the project's Technical Support Data.

  Once the review of the EA Re-evaluation document is completed, the date of approval must be indicated on the next Form D-4232 submission. When additional authorization requests are anticipated after the approval of the EA Re-evaluation document, the Originating Office must contact HDTS to determine the appropriate re-evaluation requirements prior to the submission of the Form D-4232.

NOTE: It is recommended that, prior to preparing an EA Re-evaluation document, coordination occur between FHWA and PennDOT to review the project, determine the documentation necessary, and discuss the best format for that documentation.

EXAMPLE: Examples of potentially significant changes could include changes in the project scope, changes in the surrounding environment, or other new information or circumstances that would result in significant environmental impacts that were not evaluated in the EA.

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CHAPTER 5

ENVIRONMENTAL IMPACT STATEMENTS

5.0 INTRODUCTION

This chapter provides guidance and information for the Preliminary Engineering/NEPA Decision Phase of the Process for transportation projects determined to necessitate the preparation of Environmental Impact Statements (EISs). All of the information, data, and analyses performed in the Planning portion of the Process are the foundation for NEPA process analysis. Scoping Documents for all projects of all classes of action are completed within the Categorical Exclusion (CE) Expert System. When a Scoping Document is created, information from a project's Linking Planning and NEPA (LPN) Level 2 Screening Form auto populates the Scoping Document as a starting point.

EIS projects tend to be complex projects with significant impacts to a variety of environmental resources. The following types of projects can be expected to significantly affect the environment:

- A new limited-access highway
- Highways of four or more lanes constructed on new alignment
- Long highway or roadway segments of two or more lanes constructed on new alignment
- Construction or extension of fixed guideway systems (e.g., exclusive busway), expected to cause major shifts in travel patterns and land use.
- Construction involving extensive demolition, displacement of many individuals or businesses, or substantial disruption to local traffic patterns. (This classification is made on the basis of building conditions and the availability of comparable replacement facilities for displaced residences or businesses.)

NOTE: The above list contains examples only. Other projects may require an EIS. All projects resulting in significant adverse impacts will require preparation of an EIS. It is also possible that a project meeting the descriptions above might not result in significant impacts and may not require an EIS.

An EIS would be required for projects that:

- **Significantly** affect properties protected under Section 4(f) of the U.S. Department of Transportation (DOT) Act of 1966 or properties protected under Section 106 of the National Historic Preservation Act (NHPA)
- **Significantly** affect sensitive natural, cultural, or scenic resources (including endangered or threatened species, wetlands, floodplains, groundwater, prime or unique farmlands, and farmlands of statewide or local importance.)
- **Significantly** disrupt established communities; disrupt planned development; thwart plans or goals adopted by affected communities; or harm the economic vitality of an urban area.
- **Significantly** raise noise levels in sensitive areas such as schools, hospitals, or residential areas
- **Significantly** decrease air quality or violate a State Implementation Plan (SIP) for Air Quality
- **Significantly** affect water quality or a sole source aquifer or a public water supply system
- **Significantly** increase energy consumption

NOTE: In order for these situations to trigger preparation of an EIS, the impact has to be significant based on its specific context and intensity of the impact. The ability to mitigate for an impact(s) is also a consideration.

Section 6002 of Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) of 2005, codified as 23 USC §139, established a new Environmental Review Process for transportation projects developed as EISs. The Environmental Review Process continued with minor modifications through the Moving Ahead for Progress in the 21st Century Act (MAP-21) of 2012, also codified as 23 USC §139. All EISs for which the Notice of Intent was published in the *Federal Register* after August 10, 2005 must follow this Environmental Review Process. The term "Environmental Review Process" includes both the process of preparing a NEPA document and the "process for completion of any environmental permit, approval, review, or study required for a project under any Federal law" other than NEPA. Therefore, permitting under other statutes, such as Section 404 of the Clean Water Act, is considered part of the "Environmental Review Process." These requirements are intended to promote efficient project management by lead agencies and enhanced opportunities for coordination with the public and with other Federal, State, local and tribal government agencies during the Process. While Section 139 contains many new requirements, its purpose is not to impose new burdens on the Process. It is intended to expedite reviews by promoting a more rigorous approach to managing the complex interactions among numerous regulatory requirements.

NOTE: For more information on the Environmental Review Process, refer to FHWA and the Federal Transit Administration's (FTA) joint *SAFETEA-LU Environmental Review Process Final Guidance*, November 15, 2006, and 23 CFR §771. Additionally, refer to *AASHTO Practitioner's Handbook No. 09: Using the SAFETEA-LU Environmental Review Process (23 U.S.C. 139).* FHWA's *Section 1305 Efficient Environmental Reviews for Project Decisionmaking under 23 U.S.C. 139 Questions & Answers* (related to MAP-21) can be found at https://www.fhwa.dot.gov/map21/qandas/qaeerad.cfm.

NOTE: The USDOT has the authority, under 23 USC §139, to apply the Environmental Review Process requirements to certain classes of projects or individual projects that are developed as Environmental Assessments (EAs). For EA projects, the decision on the use of the Environmental Review Process will be made by the FHWA Division Office, with the concurrence of PennDOT (and any other lead agencies), on a case-by-case basis for individual projects or classes of projects.

5.1 ADMINISTRATIVE ACTIVITIES

Once a project is programmed on the TIP and STIP, the Originating Office (the "lead" District, Bureau, Office, or Agency responsible for administering, developing and implementing the given project) will initiate the project to begin the NEPA process, building analysis upon the information gathered in planning through the Level 2 or Level 3 Screening Form and the Detailed Studies Report (DSR). The planning information will be verified as necessary depending on the time passed and changes that have occurred in the study area.

In order for a project to be programmed on the TIP, specific information must be gathered and questions answered. This information and these questions include identifying possible environmental impacts/issues, mitigation opportunities, cost information, likely class of NEPA action, anticipated schedule, funding, etc. The TIP is updated every four years; therefore, no project should languish for too long before its need, funding, and programming is revisited.

A. Pre-TIP Project Information Verification. Identify and collect all relevant data from the pre-TIP process phases – the Level 2 or Level 3 Screening Form, DSR, and other information that will serve as a foundation for the post-TIP NEPA analyses. The state route, U.S. route number, or common road or project name assigned during the pre-TIP process phases is generally retained for the life of a project, but these designations may be refined periodically as the study progresses.

Create an administrative reference file of all documents related to the project, such as correspondence, memoranda, transmittals, meeting minutes, email, and telephone logs. Original copies of approvals, internal and external correspondence, and documentation that bear upon project decision-making should be retained by the Originating Office. The documentation should, to the extent practical, be maintained in an electronic format for long-term retention.

B. Review Pre-TIP Information and Analyses. The Originating Office, in coordination with FHWA, the Highway Design and Technology Section (HDTS), and the Environmental Policy and Development Section (EPDS), should review and confirm the following basic elements from the pre-TIP process phases of the Process:

- Coordination with local, municipal, county, or regional planning, land use and zoning authorities has been performed.
- The project's purpose and need has been defined and documented.
- The project's measures of effectiveness have been evaluated as per Publication 10C, Design Manual Part 1C, *Transportation Engineering Procedures*.
- The project has logical termini and independent utility or independent significance. Criteria associated with logical termini are listed in 23 CFR §771.111(f) (1)-(3).
- A project study area has been designated. It should be large enough to provide for the development of all reasonable alternatives to meet the project purpose and need.
- Environmental resources were identified within the study area using existing mapping and data sources.
- Any pre-TIP alternatives screening should have been performed in accordance with guidance provided in Publication 10A, Design Manual Part 1A, *Pre-TIP and TIP Program Development Procedures*.
- A range of transportation modes must be considered and reasons for dismissal documented.
- Coordination with the public and resource agencies occurred.
- Potential opportunities for mitigation were identified.

The following questions need to be considered when verifying data and/or analyses from pre-TIP process phases and determining what to include in the Scope of Work for the project:

- How much time has passed since the studies from pre-TIP phases and corresponding decisions were made?
- Are the future year policy assumptions used in the pre-TIP phases of the Process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process?
- What changes have occurred in the study area since the time the pre-TIP data was gathered and analyses were completed?
- Are the pre-TIP information and analyses still relevant/valid?

Using professional judgment, the District Environmental Manager will make the final determination of whether the pre-TIP information is still valid. A scoping field view is always needed for a project that will likely require the preparation of an EIS. At this point, it is appropriate to begin drafting a preliminary list of engineering and environmental study tasks to be completed. Further internal activities will focus primarily on preparing a detailed Scope of Work and refining that Scope of Work as necessary. Where pre-TIP information, analyses, or documentation is lacking, incomplete, or no longer accurate, the Scope of Work may need to include tasks for updating or redoing analyses.

C. Prepare Scope of Work.

1. Hold Internal Scope of Work Meeting. To benefit from the various levels of Department technical expertise available, and to afford the maximum opportunity to review all pre-TIP data previously assembled for the project, the Originating Office will arrange an Internal Scope of Work Meeting or conference call with necessary participants to preliminarily define the proposed project Scope of Work. Central Office technical specialists or their designated representatives will assist at the Scope of Work meeting. Representatives from the Originating Office, the Bureau of Project Delivery (BOPD), FHWA, and selected individuals who were involved in pre-TIP activities related to the project should attend the meeting.

The Originating Office will lead a discussion on the following items based on the pre-TIP screening form and DSR:

- The scope of the project
- Verification of purpose and need
- That the project connects logical termini and has independent utility or independent significance; i.e., is usable and a reasonable expenditure even if no additional transportation improvements in the area are accomplished
- That the project will not restrict consideration of alternatives for other reasonably foreseeable transportation improvements
- Consideration of a range of transportation modes
- The NEPA class of action and the appropriate environmental document
- That the study area adequately addresses all environmental issues and provides for the development of a full range of alternatives to meet project needs
- Preliminary range of project alternatives
- Alternatives, modes, corridors, or alignments (if previously dismissed in planning); adequate reasons must be documented for dismissing modes, corridors, and/or alignments
- Identification of the environmental issues that are not relevant or significant or which have been covered by prior environmental review
- Potential environmental impacts and issues for detailed study
- Methodologies for detailed studies
- Technical documentation that will be needed to record the results of the engineering and environmental studies
- Identification of participating agencies and the public with review responsibilities or interests in the project
- Examine the need for cooperating agencies
- Public and agency involvement requirements
- Public Participation Plan
- Permit requirements

- Required consistency determinations and applicable findings and regulations
- Cost estimates and funding scenarios (programmed funding on TIP and LRTP)
- A consultant scope of work outline
- Field view date and potential participants for the field view

Preliminary information on the project should come directly from the Level 2 or Level 3 Screening Form and the DSR, then be confirmed and/or updated as appropriate. Some sections of the Scoping Document may remain unfinished until after information is gathered at the field view. Any decisions made at the Internal Scope of Work Meeting are not considered final: The purpose of this meeting is to confirm pre-TIP data and gather new information to prepare a preliminary Scope of Work to be used in hiring a consultant.

Distribute materials that explain the issues; use maps and graphics to visually enhance the discussion. Take meeting minutes and distribute them to all participants within one week of the meeting.

2. Hold Internal Scope of Work Field View. The purpose of a field view is to confirm/clarify issues raised at the Internal Scope of Work Meeting. (Generally, the Field View is an appropriate follow-up to the Internal Scope of Work Meeting. However, the Field View may precede the Internal Scope of Work Meeting if the Project Manager feels this approach would be more effective.) The Field View is essentially an informal, guided tour that provides participants with a first-hand glimpse of the study area. Most participants may have already attended a Field View for the project during the pre-TIP portion of the Process. The central focus of the Field View is to confirm the information contained within the Scoping Document.

The following tasks will aid in the preparation for a field view:

- Prepare project information packages - study area map, project description, summaries of probable impacts, etc., to be used by the field view participants.
- Prepare necessary maps, visual aids or exhibits to orient participants, and information to explain where to assemble on the day of the field view, what direction of travel the group will take, where the final summation will be held, and other pertinent logistical data.
- Make use of local maps, topographic (USGS) maps, photographs, and sketches or drawings which clearly show local roads, community landmarks, topographic features, etc.
- Inform all participants in advance by mail or email, and follow up beforehand to insure the required or interested agencies will attend.
- Consider renting or-borrowing a van (or vans) which can be used to transport participants throughout the study area so that all parties can mutually benefit by the discussion during the field view.
- For longer field views, make appropriate arrangements for lunch and restroom stops.

Before embarking on the field view, provide a brief overview of the area's special features. When multiple displays are needed to illustrate an expansive study area, consider holding this briefing at the Originating Office or at an indoor location close to the field view site. Use aerial photographs, oblique photos, or videos of the corridor before, during, or after the field view as appropriate.

The Project Manager or another person familiar with the area should narrate during the field view, pointing out existing conditions, problem areas, sensitive resources, and engineering and environmental constraints. If a lengthy drive around the area is needed, schedule stops that highlight particular areas, allowing participants to convene to discuss the issues. Be aware of the professional and personal needs of the participants at all times.

At the conclusion of the field view, summarize the discussions and agreements made during the trip, and describe the upcoming project activities. Distribute minutes of the field view to participants promptly after the meeting. Comments generated at the Internal Scope of Work Field View must be incorporated into the Scoping Document by either including them in the Scoping Field View Minutes, or by including them in the various remarks sections of the Scoping Document itself.

3. Internally Review Purpose and Need. As part of the Internal Scope of Work Meeting/conference call and a field view, the purpose and need defined and documented in the pre-TIP phases of the Process should be reviewed to ensure/verify continued validity. Purpose and need lay the foundation for subsequent alternatives analysis and decision-making for a project.

The following questions need to be considered when reviewing purpose and need of the project:

- How much time has passed since the studies from pre-TIP phases and corresponding decisions were made?
- Are the future year policy assumptions used in the pre-TIP phases of the Process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process?
- What changes have occurred in the area since the time the pre-TIP data was gathered and analyses were completed?
- Are the pre-TIP information and analyses still relevant/valid?
- Have all modes been properly considered?

If studies from planning are still relevant and the validity of the data/analyses is confirmed, then the Originating Office is ready to share the purpose and need with the public and agencies and move forward into the alternatives analysis. If purpose and need are not still relevant and valid, then additional needs studies may be needed before moving forward into the alternatives analysis. (Refer to Publication 319, *Needs Study Handbook*, for more information.) These additional studies should be included in the Scope of Work.

4. Confirm NEPA Class of Action. As discussed previously, a three-tiered classification system is used to group transportation improvement projects based on the significance of known potential environmental effects. Projects with significant impacts require preparation of an EIS. Projects with no significant impacts are CEEs (categorically excluded from the preparation of an EIS). Projects where the significance of the impacts is not certain are begun as EAs. Significance of impacts is based on context (or setting) and intensity (magnitude of effects). The Originating Office must consult with HDTS, EPDS, and FHWA when confirming the class of NEPA action for a project and must receive classification approval from FHWA. A preliminary determination of the NEPA class of action is made prior to a proposal being programmed on the TIP/STIP.

Other issues to consider when classifying a project include, but are not limited to:

- Public controversy on environmental grounds
- Environmental impacts
- Potential indirect or cumulative impacts
- Significant impacts to Section 106/Section 4(f) properties
- Any inconsistencies with Federal, State or local laws relating to environmental aspects of action
- Environmental Justice

Please note that impacts are classified by significance rather than by type. Significant impacts can be direct, indirect, or cumulative, or a combination thereof.

5. Submit Scoping Document. The appropriate HDTS Project Development Engineer should be notified and given the opportunity to review and comment on a Scoping Document for an EIS project prior to submission. The Originating Office will submit the Scoping Document. FHWA concurrence on the Scoping Document is required. Environmental Managers have final approval of all Scoping Documents. While awaiting approval of the Scoping Document, the Originating Office may begin preparing the Consultant Scope of Work; however, it may not be finalized without Central Office concurrence. It should also be understood that the Department's procedures produce a preliminary Scope of Work based on the best information available at this stage. This scope may be revised as new information comes to light during Agency and Public Scoping and throughout the remaining Process. Successful scoping will produce a well-formulated study that addresses all the critical issues and proceeds on schedule.

D. Consultant Selection. The Originating Office should, for engineering, environmental, and public involvement services, follow the consultant selection procedures outlined in Publication 93, *Policy and Procedures for the Administration of Consultant Agreements*, to secure a consultant(s) for an EIS project.

Typical consultant selection steps include:

- Preparation of the Scope of Work
- A Request for Proposals
- Scope of Work Meeting
- Review of Technical Proposals
- Selection of Consultant(s)
- Price/Contract Negotiation
- Notice to Proceed

NOTE: At least three to six months may be needed to select a consultant and execute a contract agreement.

Following selection, a start up meeting should be held with the consultant(s). Briefly review all work items, as well as logistics, pertinent project information, telephone numbers, contact persons, and notification procedures that will allow studies to proceed efficiently and effectively. Talk about setting targets, milestones, and project goals, and schedule future meetings to monitor work progress or to review study documents.

5.2 BEGIN ENVIRONMENTAL REVIEW PROCESS

A. Organizational Project Kick-Off. To begin the environmental review process, there are a number of organizational items to address and coordinate at the onset of a project so that all are on the same page moving forward in project development. These organizational items should include such things as the development of a project schedule and the EIS document approach, format, and outline. The coordination should be done between the project manager, district environmental staff, the consultant, HDTS, and FHWA. These can be discussed in a kick-off meeting or by other forms of coordination and communication.

B. Technical Support Data Files. At the onset of the NEPA analysis, Technical Support Data files should be established at the Originating Office to retain data and study materials associated with the EIS. The Technical Support Data should contain all pertinent information gathered during the environmental evaluation, including all information from the pre-TIP process phases that is referenced in the EIS. Supporting documents/documentation (wetland delineation reports, eligibility and effects reports, air and noise reports, etc.), telephone memoranda, and pertinent correspondence should be included in the Technical Support Data as it is generated. Information in the Technical Support Data should be made available to the public for review upon request once the EIS (draft and final) is circulated. If a request is received prior to circulation, a "Right-To-Know" Request or "Freedom of Information Act (FOIA)" Request must be submitted to PennDOT or FHWA, respectively. At a District Office, the "Right-To-Know" Request should be provided to the District Right-To-Know Coordinator. Additional information on compiling the Technical Support Data can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix F.

C. Project Initiation Letter. To initiate the Section 139 Environmental Review Process for an EIS project, the project sponsor (PennDOT) must officially notify the USDOT about the project. This is accomplished by preparing a project initiation letter. The letter should be signed or emailed by the official authorized to sign a PennDOT EIS and sent to the FHWA Division Administrator. The letter must provide the following information to FHWA regarding the project:

- The type of work
- Termini
- Length
- General location
- Other Federal approvals (such as a Section 404 permit) anticipated being necessary for the project, to the extent such approvals are known at this point in the project development process
- Timeframe within which the environmental review process should begin

Sample project initiation letters are provided in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix J. As addressed in the Moving Ahead for Progress in the 21st Century Act (MAP-21), the project initiation letter is sent to FHWA in preparation for the publication of the Notice of Intent to prepare an EIS in the *Federal Register*.

NOTE: Fill in the milestone date for the project's Project Initiation Letter in the EIS Package Document in the CE Expert System.

D. EIS Notice of Intent. In accordance with 23 CFR §771.111(a) and 40 CFR §1508.22, FHWA must publish a Notice of Intent (NOI) when the decision has been made to prepare an EIS. The Originating Office should supply the following information to BOPD, who will forward it to the FHWA Division office for publication of the NOI in the *Federal Register*:

- A brief description of the proposed action, for example, location, type of construction, length of the project, and project needs to be fulfilled
- A description of possible alternatives that may accomplish the goals of this action, for example, upgrade existing facility, construction on new alignment, mass transit, and multi-modal design ("No-Build" should also be listed as an option)
- A description of the proposed scoping process, including whether, when, and where any scoping meetings or field views will be held
- The name, mailing address, and email address of the person to contact within the Originating Office who can answer questions about the proposed action and the EIS

After receiving this information, the FHWA formally announces that it will prepare and consider an EIS for a proposed project by publishing a Notice of Intent in the *Federal Register*. Publication of the Notice of Intent signals the official beginning of Agency and Public Scoping. *Public Meetings may not be held until this announcement appears in the Federal Register*.

NOTE: Additional information regarding the contents and guidelines for publishing a Notice of Intent can be found in FHWA Technical Advisory 6640.8A, *Guidance for Preparing and Processing Environmental and 4(f) Documents* (October 30, 1987).

NOTE: Projects receiving Federal financial assistance and having an estimated total cost of $500,000,000 or more, are considered "Major Projects" by FHWA. A Project Management Plan (PMP) will be developed before Final Design. Additionally, FHWA requires cost estimate validations and financial plans for Major Projects. If the project is considered a Major Project, begin coordination with FHWA. See FHWA's website on Major Projects for more information and guidance (http://www.fhwa.dot.gov/programadmin/mega/).

NOTE: After the EIS Notice of Intent is published, **create an EIS Package Document in the CE Expert System**. Fill in the following key milestone dates for the project as the project progresses: Notice of Intent, Project Initiation Letter, Draft EIS circulation, Final EIS circulation, and Record of Decision.

E. Cooperating and Participating Agencies. An agency's participation in the Environmental Review Process depends on its special interests, expertise, or legal jurisdiction in relation to a specific project. The formal roles include the following:

Lead Agency: The term "lead agency" includes the Federal lead agency, typically FHWA for a highway project (or FTA for a transit project). The USDOT must serve as the Federal lead agency for a transportation project. The direct recipient of Federal funds for the project must serve as a joint lead agency. For FHWA, PennDOT (as the state DOT) is typically the direct recipient of project funds, and therefore must serve as a joint lead agency along with FHWA. A local government agency that is the project sponsor may be invited to serve as a joint lead agency. Other local government entities, including but not limited to toll, port, and turnpike authorities and Metropolitan Planning Organizations (MPOs)/Rural Planning Organizations (RPOs) may act as joint lead agencies, at the discretion of the required lead agencies.

NOTE: Questions 14 through 20 of FHWA and the Federal Transit Administration's (FTA) joint *SAFETEA-LU Environmental Review Process Final Guidance* (November 15, 2006) specifically address Lead Agencies.

Cooperating Agencies
The term "cooperating agency" is defined as one with jurisdiction by law or special expertise regarding the proposed action.

The scoping process allows for early identification of potentially significant environmental issues; and agencies with jurisdiction by law or other specialized knowledge of these areas may be asked to participate as cooperating agencies. For example, the U.S. Army Corps of Engineers (USCOE), under Section 404 of the Clean Water Act of 1977, must process permit applications for projects involving the discharge of dredged or fill material into U.S. waters. This constitutes legal jurisdiction over any project that affects wetlands, rivers, streams, or other surface waters; therefore, the Department may formally ask USCOE to participate as a cooperating agency in these projects.

If agency scoping indicates that a 404 permit is likely required, the USCOE should be invited to participate as a cooperating agency. If the integrated NEPA/404 process is used, the Project Team will prepare the EIS and the Section 404 permit application for concurrent review, and the Department and the USCOE will conduct a joint public hearing to address NEPA and Section 404 issues simultaneously. However, the Originating Office and the USCOE may decide that an integrated NEPA/404 review is not practical for projects with limited wetland involvement. In such cases, the USCOE may choose not to participate as a cooperating agency.

The U.S. Environmental Protection Agency (EPA) may also be a cooperating agency for projects involving Section 404 issues. The EPA's areas of special expertise are reviewing for consistency with the Section 404(b) (1) Guidelines, and identifying Aquatic Resources of National Importance (ARNIs). In addition, the EPA comments on Section 404 permit applications and under Section 404(c) of the Clean Water Act can veto the USCOE's decision to issue a permit.

The Pennsylvania Department of Environmental Protection (PA DEP) can potentially be a cooperating agency, although it is a state agency. In the past, PA DEP has been a cooperating agency if the integrated NEPA/404 process was used due to the Section 401 Water Quality Certification (WQC) issued by PA DEP under the Section 404 permit process.

Requests for cooperating agencies can be made at the Agency Scoping Meeting; however, as Federal lead agency, FHWA should follow up with a formal, written request.

Depending on the issues involved in a project and the human resources available, a cooperating agency may perform a variety of functions, such as:

- Participating in scoping
- Providing information and preparing environmental analyses
- Lending support staff to assist in conducting studies
- Assisting Project Teams in writing the EIS
- Participating in interdisciplinary reviews of environmental documentation

NOTE: Questions 30 and 31 of FHWA and the Federal Transit Administration's (FTA) joint *SAFETEA-LU Environmental Review Process Final Guidance* (November 15, 2006) specifically address cooperating agencies.

NOTE: Cooperating agencies are a sub-set of the participating agencies: every cooperating agency will also be a participating agency, but many participating agencies will not be cooperating agencies.

Participating Agencies

Participating agencies include any federal, state, and local agencies that "may have an interest in the project".

Federal, State, tribal, regional, and local government agencies that may have an interest in the project should be invited to serve as participating agencies. Non-Governmental Organizations (NGOs) and private entities cannot serve as participating agencies.

PennDOT and FHWA cannot know with certitude all the agencies with a potential interest until the alternatives have been developed, and the alternatives cannot be set until the participating agencies have had an opportunity for involvement. Therefore, PennDOT and FHWA are expected to make good faith, common-sense efforts to identify, invite, and involve interested agencies early on, the objective being to surface and resolve issues as early and quickly as possible. It is not necessary to invite agencies that have only a tangential, speculative, or remote interest in the project.

The roles and responsibilities of participating agencies include, but are not limited to:

- Participating in the NEPA process starting at the earliest possible time, especially with regard to the development of the purpose and need statement, range of alternatives, methodologies, and the level of detail for the analysis of alternatives

- Identifying, as early as practicable, any issues of concern regarding the project's potential environmental or socioeconomic impacts. Participating agencies also may participate in the issue resolution process described later in this guidance

- Providing meaningful and timely input on issues

- Participating in the scoping process. The scoping process should be designed so that agencies whose interest in the project comes to light as a result of initial scoping activities are invited to participate and still have an opportunity for involvement

- Concurring on the schedule as part of the Coordination Plan

Participating agencies can be invited by either FHWA or PennDOT. Whatever division of labor among the lead agencies is decided upon for the distribution of the invitations should be defined in the coordination plan (discussed in the next section), or in some other written form. To help identify potential participating agencies, consider Federal, State, tribal, regional, and local agencies that frequently have permitting authority, special expertise, or interest in transportation projects.

The invitation should be in the form of a hardcopy or email letter and must include a basic project description and map of the project location. If the invitation is sent electronically, it should be tracked to ensure delivery. As with all correspondence, a copy should be placed in the Technical Support Data files. The project description may be included in scoping materials enclosed with the letter. The invitation must clearly request the involvement of the agency as a participating agency and should state the reasons why the project is expected to interest the invited agency. Lead agencies should bear in mind that invited agencies, such as the EPA, may have obligations under several authorities, and, in such case, the invitation should reflect all areas of jurisdiction of the invited agency. The invitation should identify the lead agencies and describe the roles and responsibilities of a participating agency. The invitation must specify a deadline for responding to the invitation. A response deadline of no more than 30 days is suggested. The agency scoping process may be conducted concurrently with the invitation process as long as the potential participating agencies are provided with sufficient scoping information and opportunity for involvement. See Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix K for sample participating agency invitation letters.

A Federal agency invited to participate shall be designated as a participating agency unless the agency declines the invitation by the specified deadline. If a Federal agency chooses to decline, their response must state that the agency (1) has no jurisdiction or authority with respect to the project, (2) has no expertise or information relevant to the project, and (3) does not intend to submit comments on the project. If the Federal agency's response does not state the agency's position in these terms, then the agency should be treated as a participating agency. Under the statutory provisions regarding Federal agency participation, it is likely that any invited Federal agency will serve as a participating agency. Therefore, in the interest of good resource management, invitations to Federal agencies should be sent with appropriate forethought about whether the agency has an actual interest in the project.

A State, tribal, or local agency must respond affirmatively to the invitation to be designated as a participating agency. If the State, tribal, or local agency declines the invitation, regardless of the reasons for declining, the agency should not be considered a participating agency. Also, a state, tribe, or local agency who fails to respond by that stated deadline will not be considered a participating agency.

NOTE: Questions 21 through 29 of FHWA and the Federal Transit Administration's (FTA) joint *SAFETEA-LU Environmental Review Process Final Guidance* (November 15, 2006) specifically address participating agencies, including thoughts on how to address situations where agencies decline participation, but still comment at the end, or are identified late, or decline initially but then decide to participate later, etc.

NOTE: A variety of different scenarios may present themselves later in the environmental review process if an invited agency declines to be a participating agency. They may include the following:

- An agency declines but the lead agencies think the invited agency has jurisdiction or authority over some aspect of the project and will be required to make a decision about the project, or if the invited agency has acknowledged special expertise or has information relevant to the project, then the lead agencies should work immediately to resolve the disagreement about participation. If informal procedures prove inadequate to reach a mutually satisfactory agreement on participation, then the lead agencies may wish to elevate the issue within the agencies or to pursue the statutory issue resolution process (see Questions 61 through 63 of the *SAFETEA-LU Environmental Review Process Final Guidance*.)

- If an agency correctly declines an invitation, but new information indicates that the agency does indeed have authority, jurisdiction, acknowledged special expertise, or information relevant to the project, then the lead agencies should immediately extend a new invitation in writing to the agency to become a participating agency. The lead agencies also should consider whether this new information affects previous decisions on the project. If the agency agrees to be a participating agency, then the lead agencies should consult with that new participating agency in determining whether the new information affects previous decisions.

- If an agency declines an invitation to become a participating agency and later wants to participate, then the agency should be invited to become a participating agency but previous decisions will not be revisited.

- If initially an agency was unintentionally left out and now wants to participate, the agency should be extended an invitation to become a participating agency as soon as the oversight is realized. The lead agencies should request input and consider whether and how the new agency's participation in the process affects previous decisions. It may be necessary to reconsider previous decisions if it is probable that the input of the new participating agency would substantially change the decision.

NOTE: If a Federal agency qualifies as a cooperating agency, it should be invited to serve in that capacity as well as the participating agency capacity. A non-Federal agency or Native American tribe that qualifies under CEQ regulations to serve as a cooperating agency may be invited to serve in that capacity or as a participating agency, at the discretion of the lead agencies.

NOTE: Only "agencies" can be participating agencies. NGOs (e.g., Sierra Club, watershed associations, etc.) cannot be invited as participating agencies. This is not to say that these NGOs are not engaged in the Process; they are stakeholders as part of the public process, just not as "participating agencies."

F. Coordination Plan and Schedule. Lead agencies are required to establish a plan for coordinating public and agency participation and comment during the Environmental Review Process. Coordination plans are developed early in the Environmental Review Process after project initiation. The initial coordination plan may be changed by the lead agencies as additional participating agencies are identified or the complexity of issues becomes clearer. Lead agencies may find that best results occur when they consult with the participating agencies on the coordination plan, because key elements of the coordination plan may be setting expectations that require a commitment of resources by the participating agencies. As with all joint responsibilities, the lead agencies must agree on the coordination plan or must work out their differences before proceeding to implement any element of the plan that is in dispute.

Many elements of a coordination plan may be repetitious from project to project, and may therefore be established by the lead agencies programmatically, for greater efficiency. Participating agencies may prefer programmatic elements in coordination plans because such elements would provide greater predictability and assist them in their allocation of resources. A coordination plan for an individual project may be established separately from any programmatic coordination plan, or it may incorporate one or more programmatic coordination plans established by the lead agencies to govern coordination with one or more participating agencies.

The coordination plan must be shared with the public and with participating agencies so that they know what to expect and so that any disputes are surfaced as early as possible.

The purpose of the coordination plan is to facilitate and document structured interaction with the public and other agencies and to inform the public and other agencies of how the coordination will be accomplished. The coordination plan has the potential to expedite and improve the Environmental Review Process by clearly establishing interactions and expectations, but its success will depend on the lead agencies exercising common sense and good faith to make it work. The coordination plan should outline the following:

- How the lead agencies have divided the responsibilities for compliance with the various aspects of the Environmental Review Process, such as the issuance of invitations to participating agencies

- How the lead agencies will provide the opportunities for input from the public and other agencies, in accordance with applicable laws, regulations, and policies

The Coordination Plan also should identify coordination points with the agencies or public, such as:

- Scoping activities
- Development of purpose and need (ACM/public meeting)
- Identification of the range of alternatives (ACM/public meeting)
- Collaboration on methodologies

- Completion of the Draft Environmental Impact Statement (DEIS)
- Identification of the preferred alternative and the level of design detail
- Completion of the Final Environmental Impact Statement (FEIS)
- Completion of the Record of Decision (ROD)
- Completion of permits or approvals after the ROD

In addition, the coordination plan may establish a schedule of regular meetings and may identify which persons, organizations, or agencies should be included for each coordination point. The plan may set timeframes for input by those persons, organizations, and agencies. FHWA and PennDOT can incorporate the coordination plan into a Memorandum of Understanding (MOU) that is applicable to a single project or to a category of projects.

A project schedule should be developed with the coordination plan. Consultation with the cooperating and participating agencies on the project schedule is required whenever a coordination plan includes a project schedule. Concurrence on the schedule by the participating agencies is required by MAP-21.

The schedule should include decision-making deadlines for each agency approval, such as permits and other final decisions, consistent with statutory and regulatory requirements, in order to encompass the full environmental review process. In deciding the level of detail of the schedule, PennDOT and FHWA should keep in mind the objective of expediting the process by communicating expectations and forcing discipline on themselves and others. A coordination plan and schedule example can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix L.

NOTE: Questions 47 through 57 of FHWA and the Federal Transit Administration's (FTA) joint *SAFETEA-LU Environmental Review Process Final Guidance* (November 15, 2006) specifically addresses coordination plans and schedules. A Q&A for MAP-21 can be found on the FHWA MAP-21 website at https://www.fhwa.dot.gov/map21/qandas/qaeerad.cfm.

G. Agency and Public Scoping. Scoping involves evaluation of a project's existing and proposed engineering features, assessment of environmental resources potentially impacted by the proposed project, and consideration of necessary public and agency involvement. The evaluation of engineering parameters and the evaluation of environmental resources must be integrated in the Process. Engineering decisions should be made with consideration of environmental resources and the environmental consequences of implementing the decisions. Likewise, a thorough evaluation of resource involvement cannot be efficiently performed without adequate engineering to produce a defined project footprint. All of this needs to be done with an ear to what the public and the resource agencies think.

Because agency coordination occurred in earlier pre-TIP Process phases, agency representatives may already have knowledge of the project/study area and provided resource data. The public was provided the opportunity to become familiar with the project and provide input through MPO/RPO TIP development, as outlined in each MPO/RPO's Public Participation Plan.

Scoping is completed in two steps. First, a meeting is held with the participating resource agencies. Second, a public meeting is held to introduce the project. One topic of discussion at these meetings is the project's purpose and need.

To further confirm the pre-TIP analysis and data that has already been reviewed in internal scoping, agency and public scoping needs to occur. PennDOT and FHWA must give participating agencies and the public the opportunity to become involved in the development of purpose and need. The project's Coordination Plan and Schedule should have established the timing and form of agency and public meetings.

1. Conduct Agency Scoping. The EPA and other federal agencies are required to comment on EISs; however, a variety of state agencies represented at the Agency Coordination Meeting (ACM) are also asked to participate in the review process. As a general rule, all agencies who will review the EIS should be invited to participate in project scoping. Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix H provides a fairly comprehensive list of agencies that should be notified. All participating agencies for the project should additionally be invited to agency scoping.

An appropriate forum for meeting with all the necessary agencies may be at one of the monthly ACMs. ACMs have been used as a platform earlier in the Process to introduce agencies to proposals for possible programming on the TIP. The ACM provides for the following:

- Effective communications between the Originating Office and the agencies
- Study methodology discussions
- Sensitive resources identification
- Early environmental issue resolution, especially before the permit application stage
- Project development in accordance with the integrated NEPA/404 process

If ACM is determined to be the appropriate forum to hold agency scoping, invite any participating agencies who are not ACM agencies to attend the meeting.

To place the presentation on the ACM agenda, contact the EPDS ACM coordinator with the presentation items no later than five working days after each ACM. (Items received after the deadline will not be included on the next month's agenda.) The email or fax should reference the project by District, State Route (S.R.) number and section, project name, county, and USCOE District. A fact sheet should be prepared and sent to the EQAD ACM coordinator at least 15 days before the monthly ACM.

The Originating Office assumes sole responsibility for the presentation at ACM, and often the project consultant delivers the presentation. A "dry run" or practice of the presentation is often helpful and enhances the preparation of the presentation.

Include the following as thoroughly as possible within the scheduled time constraints of the ACM:

- The planning history of the project, past agency coordination, and the Department's internal scoping process

- The purpose and need for the project

- Referring to maps of the region and the study area, familiarize the agencies again with the project's location in relation to communities, natural, socioeconomic and cultural resources, and other current or planned transportation improvement schemes. General constraints should be labeled on the study area map in order to target "hot spots" that could create controversy. Aerial photography may be used to enhance the presentation of environmental and community features.

- Identify issues of potential concern

- Outline the scope of studies

- Present a general project schedule

Visualization techniques that simplify complex data should be integrated into all ACM presentations. To emphasize key information, use PowerPoint slides or display boards of maps, charts, graphs, tables, diagrams, illustrations, renderings, or photos. In addition, distribute handouts that summarize the main points of the presentation. Ask for input on purpose and need.

The meeting chairman will moderate the discussion that follows the Project Team's presentation. The Originating Office is responsible for preparing minutes of the presentation, to be included in the ACM minutes and the Technical Support Data files.

2. Hold Post Scoping Public Meeting. Depending on the previous level of pre-TIP public involvement activities, it may be necessary to hold a scoping public meeting. If meetings had been held in planning that specifically focused on the project, then holding a meeting now may not be necessary. The Project Team should discuss whether to hold a meeting with FHWA.

If a meeting is to be held, the Originating Office's Community Relations Coordinator will supervise all public involvement activities and oversee the development of a Public Involvement Plan, which is incorporated into the coordination plan and schedule. The Public Meeting should be scheduled at a time and location convenient to the public, and advertised well in advance. In addition to placing notices in local newspapers, the Coordinator may choose to send announcements or newsletters to residents in the study area. For complex projects on new locations, or projects in urban and suburban areas, it is often helpful to meet with public officials several days to a week before the public meeting. This will serve to familiarize officials with the presentation and issues that may be raised by meeting participants (their constituents).

At the Public Meeting, Project Team personnel will present the following information:

- A description of the project's location
- A broad outline of the schedule and an indication of the project's duration
- The purpose and need for the project
- Issues identified as potential areas of conflict or concern
- Additional studies to be conducted

More information and guidance for planning and conducting a Public Meeting can be found in Publication 295, *Project Level Public Involvement Handbook*. Select a format for the meeting that suits both the needs of the participants and the nature of the information to be discussed. A Formal Presentation may be suitable for introducing the project to the public. In this traditional format, Project Team members address the audience, using graphics, slides, or even a video presentation to explain details of the project. Prior to the formal presentation, meeting participants could be invited to view a plans display that graphically illustrates (using maps, charts, tables, photos, and text boards) the material.

The less structured Open House format encourages more one-on-one interaction and discussion. Graphics and text boards similar to those used at Plans Displays present project information. Project Team personnel assigned to each exhibit explain the material. Other staff members are available to mingle, answer questions, address concerns, and gather input from participants.

Workshops offer an informal, yet structured and issue-oriented meeting format. Typical workshop agendas address issues related to potential project impacts, discuss design or mitigation concepts, or mediate conflicts among groups. Such special-purpose meetings may be more appropriate later in the process.

Make every effort to adapt the Project Introduction to the public's level of knowledge. Visualization techniques often convey complex data more clearly than the written or spoken word. All presentations should rely heavily on displays composed of charts, graphs, tables, diagrams, illustrations, renderings, or photos, with simple text explanations. Although oral presentations should also translate technical information into non-technical terms, be careful to avoid using a condescending tone. Distribute handouts that provide a concise summary of the important information presented.

The public will also be educating the Department. The first Public Meeting will give residents of the study area their first opportunity to voice their concerns and present their vision of the project's goals and objectives. As they enter the meeting facility, ask participants to "sign in" so that they can be added to the Interested Parties List. Groups and individuals on the list will receive newsletters throughout the project, informing them of how studies are progressing and soliciting their input. (Agencies involved in the project should also be included on the mailing list and should receive notification of Public Meetings.) The Interested Parties List will be updated at subsequent Public Meetings.

Within ten days of the public meeting, prepare a written summary of items discussed, and circulate these minutes to the Project Team, including cooperating agencies. These summaries will prove useful in preparing future activities and documenting public and agency coordination in the EIS.

In accordance with the Americans with Disabilities Act of 1990, Public Meetings must be made accessible to persons with disabilities. Auxiliary aids must be provided to assist persons with hearing, speech, and vision impairments in understanding the presentation and displays. Facilities must be accessible to the physically handicapped. Public Meeting notices must request that persons with disabilities who wish to attend inform the Department of their special needs. The Originating Office should then contact these persons before the

meeting date to inform them of the special aids or services that will be made available to meet their special needs. Other issues and considerations that need to be accommodated, as appropriate, may include non-English speaking populations within a project area which may warrant the need for interpreters. The provisions outlined above will apply to all project activities advertised in the media.

H. FHWA Acceptance of Purpose and Need. Purpose and need lays the foundation for subsequent alternatives analysis and decision-making for a project. As such, it is very important that the needs be well-defined. Purpose and need should not be so narrow as to only allow one possible alternative that can address the needs. At the same time, purpose and need cannot be so broad that endless possible alternatives could address the needs. Purpose and need was originally defined during the pre-TIP process phases of the Process. Once the NEPA process was initiated for the project, the purpose and need was revisited and verified that it was still valid, first through internal scoping, then in agency and public scoping.

After gathering input from the agencies and the public on the purpose and need of the project, the following questions need to be considered when finalizing purpose and need:

- Are the future year policy assumptions used in the pre-TIP phases of the Process related to land use, economic development, transportation costs, and network expansion consistent with those to be used in the NEPA process?

- What changes have occurred in the area since the time the pre-TIP data was gathered and analyses were completed?

- Are the information and analyses still relevant/valid?

- Was the input obtained from agencies and the public considered? Were adjustments made as necessary?

If studies from planning are still relevant and the validity of the data/analyses is confirmed, then the Originating Office is ready to ensure FHWA concurrence on purpose and need. If this is not the case, then additional studies to confirm project needs may be needed before seeking FHWA concurrence on purpose and need.

Needs should be written as problem statements. Needs are not possible solutions. Possible solutions are equivalent to alternatives. It is suggested that the needs be listed as bullet points up front in the needs documentation. Then each need can be addressed separately by explaining how it was determined that the need was real and not just a perception. What evidence is found/identified, reference detailed technical data (traffic analysis, accident statistics, bridge inspection reports, etc.) and use tables, graphics, photos, and other means to display information in a more understandable/readable way. The purpose statement (a sentence or a couple of sentences) should follow the needs information, summarizing what the proposed project is intended to accomplish.

NOTE: For more information on purpose and need, refer to Publication 319, *Needs Study Handbook*, and AASHTO's *Practitioner's Handbook No. 07, Defining the Purpose and Need and Determining the Range of Alternatives for Transportation Projects.*

When the project's purpose and need are ready for FHWA acceptance, prepare a purpose and need acceptance request package. The package consists of the purpose and need acceptance letter signed by the Originating Office and attached purpose and need documentation, as appropriate. A copy of the purpose and need acceptance letter can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix G.

PennDOT and FHWA must agree to the project's purpose and need. Because all future analysis is dependent on the purpose and need, the project cannot proceed any further until FHWA signs the Purpose and Need Concurrence Letter.

5.3 ALTERNATIVES ANALYSIS

NOTE: It is encouraged that a large amount of the development and screening of alternatives occur pre-TIP. EIS alternatives analysis can be complex depending on the nature of the project and its anticipated impacts (e.g., Section 4(f), threatened and endangered species, Waters of the U.S., etc.). It is important to consider multiple modes and to include the agencies and the public as early as possible in discussions. All analyses and documentation done pre-TIP must be thorough enough to be able to be relied upon in NEPA documentation. The EIS must include a discussion of the alternative(s) eliminated from detailed consideration during the pre-TIP alternatives analysis, a summary of the reasons for eliminating the alternative(s), and a summary of the analysis process supporting the elimination. Please reference the analysis contained within this section when conducting pre-TIP alternatives analysis.

CEQ regulations (40 CFR §1502.14) require an EIS to "rigorously explore and objectively evaluate all reasonable alternatives" and to "[d]evote substantial treatment to each alternative considered in detail . . . so that reviewers may evaluate their comparative merits." The regulations also provide that "for alternatives which were eliminated from detailed study, [the EIS should] briefly discuss the reasons for their having been eliminated."

"All reasonable alternatives" implies that every reasonable alternative must be rigorously evaluated, no matter how many reasonable alternatives exist. However, in some cases, the number of potentially reasonable alternatives is very large or even infinite. The CEQ has addressed this issue in guidance, stating that a "reasonable range" of alternatives can be studied when the number of potentially reasonable alternatives is very large: For some projects, there may exist a very large or even an infinite number of possible reasonable alternatives. When there are potentially a very large number of alternatives, only a reasonable number of examples, covering the full spectrum of alternatives, must be analyzed and compared in the EIS. What constitutes a reasonable range of alternatives depends on the nature of the proposal and the facts in each case. Therefore, despite the reference to "all reasonable alternatives" in the CEQ regulations, it is permissible to study a "reasonable range" of alternatives in an EIS. When relying upon this interpretation, it is important to ensure that the range of alternatives covers the "full spectrum" of potential reasonable alternatives. CEQ regulations do not define a "reasonable" alternative. The CEQ's guidance states that "[i]n determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant."

The term "alternatives screening" is commonly used to refer to the process for reviewing a range of preliminary alternatives or concepts and deciding which ones to carry forward for detailed study. The primary function of an alternatives screening process is to determine reasonableness; that is, screening provides a means of separating the unreasonable alternatives (which can be eliminated without detailed study) from the reasonable alternatives (which must be carried forward for detailed study). If there are many reasonable alternatives, the screening process also can be used as the basis for defining a reasonable range that represents the full spectrum of reasonable alternatives.

Alternatives are typically evaluated and screened during the Preliminary Engineering/NEPA Decision Phase in two parts - a preliminary alternatives analysis and then a detailed alternatives analysis. This approach provides a systematic process for choosing the most feasible, reasonable, and practical transportation improvement option.

NOTE: Alternatives analysis should consider alternatives analysis required under other statutes (Section 4(f), Section 404, ALCAB approval, etc.) for the project.

A. Preliminary Alternatives Analysis. In the preliminary alternatives analysis, all alternatives that could possibly address the project purpose and need can be included. The preliminary alternatives analysis can include alternative modes, corridors, and/or alignments within corridors. The alternatives are screened to determine which alternatives should be retained for detailed study. Generally the first screening is based on the project needs. Alternatives that do not adequately address the project purpose and need should not be retained for additional study. The second level of screening is typically based on anticipated environmental impacts along with engineering parameters and costs. Often this involves preliminary environmental data collected from available databases and limited field verification. Throughout the preliminary alternatives analysis, agency and public input is considered.

If alternative modes, corridors, or alignments were dismissed during pre-TIP studies, confirm that the data and analyses are still valid and summarize the assessment in the preliminary alternatives analysis. If additional alternatives can be screened based on the latest information, include that information as well.

From the outset of the preliminary alternatives analysis, project engineers should focus on designing alternatives that avoid as many natural, cultural, and socioeconomic resources as possible. If the preliminary evaluation reveals that improvements cannot satisfy the project needs without disturbing some of these sensitive features, detailed engineering efforts should concentrate on modifying alternatives to minimize or mitigate impacts.

The preliminary stages of environmental and engineering studies assist in the determination of the most practical alternate corridors, alignments, or transportation upgrading options for a given project. Preliminary methodology may vary considerably based upon the scope of the project, and the project's overall involvement with significant man-made and natural resources present within the study area. The Project Team should conduct field views during this stage, as needed to facilitate project development.

The overall objective of preliminary alternatives development is to identify and verify a range of alternatives. Thus, scoping continues through Phase I as alternatives are evaluated in enough detail to allow decision-makers to determine the most practical alternatives. Each alternative is assessed according to such criteria as engineering feasibility, traffic, service, cost, environmental impact, and acceptability to the public and resource agencies.

1. Verify Study Area. Armed with extensive knowledge of transportation needs and other conditions in the project region, the Project Team will verify that the boundaries of the study area established during scoping will:

- Accommodate a reasonable range of possible transportation improvement alternatives.
- Be consistent with existing and planned community land use that could interact with transportation facilities.

A small-scale location map will illustrate the study area in relation to nearby communities and topographic features. Project maps on a larger scale (from 1 in = 100 ft to 1 in = 400 ft) also should be prepared to assist detailed investigations.

The following provides a guideline for determining which mapping scale is appropriate to a particular level of detail:

Mapping Scale	Size	Use
Satellite to 1 in = 2000 ft	small	Overview studies
1 in = 2000 ft to 1 in = 400 ft	medium	Preliminary alternatives analysis studies
1 in = 400 ft to 1 in = 25 ft	large	Detailed alternatives analysis studies

2. Verify and Further Define Environmental Features. Consulting maps and secondary information and viewing the study area in person, verify environmental features that act as constraint thresholds; that is, severe physical limitations or sensitive resources that would inhibit the construction of an alternative in a certain area. Environmental features can be defined quantitatively or qualitatively: for example, disruption to businesses, residences, and historic sites; incompatibility with regional plans; acquisition of large portions of Section 4(f) properties; damage to wetlands; taking of productive agricultural land; and effects on floodplain areas can be expressed qualitatively. Their value is better captured and explained by a discussion of their worth and importance than purely stating an acreage.

Maps should depict the approximate boundaries of the resources, and brief descriptions of their significant features should be included. The categories of features that should be identified are identified in Figure 5.1. (See more information regarding the categories following the figure.)

FIGURE 5.1
ENVIRONMENTAL RESOURCES

- **Natural Resources**
    - Soils, Geology, and Groundwater Resources
    - Mining and Mineral Resources
    - Surface Water Resources
    - Floodplains and Flood Hazard Areas
    - Wetlands
    - Vegetation and Wildlife
    - Threatened and Endangered Species
    - Farmlands
- **Cultural Resources**
    - Historic Structures and Properties
    - Archaeology
- **Section 4(f) Resources**
- **Socioeconomic Resources**
    - Land Use/Land Cover
    - Planned Development
    - Community Facilities and Services
    - Community Cohesion
    - Environmental Justice
    - Displacements
    - Local and Regional Economy
- **Visual Resources**
- **Noise/Vibration**
- **Air Quality**
- **Municipal, Industrial and Hazardous Waste Facilities**
- **Indirect and Cumulative Effects**
- **Invasive Species**
- **Energy**
- **Construction Impacts**

Natural Resources

Soils, Geology, and Groundwater Resources

Soils, Geology, and Groundwater Resources should be identified through a review of county soil surveys and published literature from sources such as the Pennsylvania Topographic and Geologic Survey, U.S. Department of Agriculture, and the U.S. Geological Survey (USGS). Public/private wells and sensitive aquifers should be noted. Geologic features which may affect construction of a project should be noted (e.g., presence of pyrite rock, karst areas, unstable rock formations, etc.). Borings or other testing may be required as part of the studies to analyze alternatives and impacts in areas with a history of geologic issues.

Mining and Mineral Resources

Mining and Mineral Resources can be identified through a literature review of mining and mineral resources (coal, natural gas, and oil), as well as coordination with the Pennsylvania Department of Environmental Protection (PA DEP) for mining permits and registered oil and gas wells. Field reconnaissance and contact with the property owners can be conducted to confirm and supplement the literature search data and information.

Surface Water Resources

Surface Water Resources will be identified from USGS mapping, aerial photographs, and field surveys. The water quality of the streams will be determined through STORET data (U.S. Environmental Protection Agency's (EPA) STOrage and RETrieval System), PFBC file data, and PA DEP Chapter 93 classification. High quality and exceptional value streams should be identified using PA DEP's Chapter 93 classification (25 Pa. Code Chapter 93). Wild and stocked trout streams can be identified through coordination with the PFBC. Physical stream data (length, width, watershed area, depth, substrate, shading, pool/riffle ratio, etc.) can be obtained in the field. The need for, and level of, chemical and biological data should be determined in consideration of the anticipated impacts and in coordination with the resource agencies. Macroinvertebrate sampling, fish sampling and chemical sampling may or may not be necessary. Where a project involves bridging the stream which is not a critical habitat (see below) or special protection, less detailed analysis would be required when compared with a project requiring stream relocation or culverting.

Floodplains

Floodplains and Flood Hazard Areas should be identified from Federal Emergency Management Agency (FEMA) and USGS mapping. Note should be made of the 100-year floodplain boundaries (i.e., special flood hazard areas) and of regulated floodways (as delineated by FEMA) if present in the study area. Consult Publication 13M, Design Manual Part 2, *Highway Design*, Chapter 10 for additional floodplain information. Detailed hydraulic and hydrologic (H&H) studies may also be completed as part of the engineering design, often in Final Design.

Wetlands

Wetlands will be identified and delineated in accordance with accepted field methods. The functions and values of the wetlands, size, vegetative type and other relevant factors will also be analyzed. Exceptional value wetlands will be identified. Boundaries of wetlands will be confirmed with a jurisdictional determination (JD) made by the USCOE. It is typically recommended that PA DEP be invited to the JD meetings to expedite the process. A Wetland Identification and Delineation and Functional Assessment Report will typically be prepared. All wetland analyses should be conducted in accordance with the guidelines contained in Publication 325, *Wetland Resources Handbook* and in accordance with Section 404 of the Clean Water Act and Chapter 105 regulations (25 Pa. Code Chapter 105) promulgated pursuant to the Dam Safety and Encroachments Act (32 P.S. §§ 693.1 et al). Complete the 404(b)(1) analysis if using integrated NEPA/404 process and include with the EIS.

Vegetation and Wildlife

Vegetation and Wildlife will be identified by review of land use/land cover mapping of the study area. Using the information from this mapping, field investigations are conducted to verify existing conditions and collect data on vegetation types and successional stages. Terrestrial habitat including forestland, rangeland and other land use habitats may need to be mapped if there is the potential for Terrestrial Resources Meriting Compensation (TRMC) (refer to the Natural Resources Assessment and Mitigation Agency Partnering Policy in Publication 546, *Threatened and Endangered Species Desk Reference*, for additional information). If a detailed habitat assessment is conducted, a technical report would typically be prepared. Other habitat assessment methodologies could be used if they are accepted by the appropriate agencies and in consultation with EPDS.

Threatened and Endangered Species

Threatened and endangered (T&E) species (Federal and State listed, proposed and candidate species) should be identified through the Pennsylvania Natural Diversity Inventory (PNDI) Environmental Review Tool and agency coordination. Field studies to confirm the presence of a species, its habitat or Critical Habitat may or may not be necessary depending on the results of the database search and agency coordination. Agencies with jurisdiction over protected species include the Pennsylvania Department of Conservation and Natural Resources (DCNR), PFBC, Pennsylvania Game Commission (PGC), the U. S. Fish and Wildlife Service (USFWS), and National Marine Fisheries Service (NMFS). Species-specific approved surveyors may need to be called in to assist in identifying a certain species or its habitat. If a habitat assessment is conducted, a report or technical paper is typically prepared. Requirements of the Endangered Species Act must be met if a Federally-endangered/threatened listed, proposed or candidate species, or its habitat is involved. Requirements of applicable State codes, such as the Game and Wildlife Code, the Fish and Boat Code, and the Conservation of Natural Wild Plants Code, must also be met for state listed species. Copies of correspondence regarding the presence/absence of T&E species should be appended to the EIS, and associated reports (if necessary) should be summarized in the EIS and included in the Technical Support Data. More information on T&E coordination can be found in Publication 546, *Threatened and Endangered Species Desk Reference.*

Farmlands

Productive agricultural lands that could be affected by the project should be identified in accordance with Pennsylvania Act 100 and Act 43 and the Agricultural Lands Preservation Policy (ALPP). If the proposed project only involves improvements to an existing facility, the project will likely be exempt from Acts 100 and 43 and will not need to go before the Agricultural Lands Condemnation Approval Board (ALCAB). If the project is not exempt from Acts 100 and 43 and ALCAB, it will be important to interview the local farmers for details about their operations. If the project will need to be presented to ALCAB, a Farmlands Assessment Report (FAR) will need to be prepared. An ALCAB Hearing may need to be held. The hearing, if held, would most likely be conducted no later than in Final Design.

In order to comply with ALPP, productive agricultural land that is preserved through a conservation easement, is within an agricultural security area (ASA), is participating in Acts 319 or 515, has special agricultural zoning, or contains Capability Class I, II, III or IV soils should be identified. In addition, for Federally funded projects to comply with the Farmlands Preservation Policy Act (FPPA), areas of prime farmland soil, statewide important farmland soil, and unique and locally important farmland soil must be identified and an AD-1006 Form must be completed. Publication 324, *Agricultural Resources Evaluation Handbook* provides additional details on evaluating agricultural lands in accordance with the various farmland regulations.

Cultural Resources

Cultural resources listed in or eligible for listing in the *National Register of Historic Places* will be identified in accordance with Section 106 of the National Historic Preservation Act. Appropriate historic resource reports (Historic Structures Eligibility Reports, Pennsylvania Historic Resource Survey (PHRS) forms, Determination of Effect Reports, etc.) will be prepared for properties, districts, and structures listed in or eligible for the National Register. In addition, archaeological studies and reports (such as geomorphology reports, Phase I Archaeological Survey Reports, Phase II work plans and reports, Phase III reports and data recovery plans) will be completed as necessary. For archaeological resources, there is often phased

identification, especially for the built environment. Predictive modeling is generally used when there are multiple alternatives, in order to rank the alternatives for potential impacts. Only after the ROD is issued and final design is undertaken, does intensive archaeological survey begin. Consultation/coordination with the appropriate PennDOT Cultural Resource Professional (CRP) should be performed during the preparation of reports. The reports will then be submitted to the Pennsylvania Historical and Museum Commission (PHMC) to consult with the State Historic Preservation Officer (SHPO) on the findings contained within each report. The CRP assigned to the District will be responsible for seeking and communicating with Consulting Parties that have cultural resources as their primary focus. In addition, the CRP for archeological resources is responsible for consulting with Federally recognized tribes. Refer to Publication 689, *Cultural Resources Handbook,* for more information.

NOTE: FHWA should be involved in the review and approval of any additional work stemming from surveys, archaeological or otherwise. The approval to spend public funds is not a function of the SHPO, although their concurrence is sought with respect to Section 106.

Section 4(f) Resources

Properties subject to Section 4(f) of the U.S. Department of Transportation Act of 1966 include publicly owned public parks, recreational areas, wildlife or waterfowl refuges, and any significant historic sites. Section 4(f) permits the use of such land for a transportation project only when:

- There is no "feasible and prudent" alternative to the use of the Section 4(f) property; and
- The project includes all possible planning to minimize harm (as defined in 23 CFR §774.17) to the Section 4(f) property resulting from the use.

Or

- The use, including any measures to minimize harm (such as any avoidance, minimization, or enhancement measures) will have a *de minimis* impact on the property.

In general, Section 4(f) is triggered when a project subject to approval by FHWA, or another USDOT agency, "uses" a resource protected by Section 4(f). "Use" has been defined to include an actual use from a Section 4(f) resource (incorporation of property from the 4(f) resource into the transportation project), *de minimis* use, or the "constructive use" of a Section 4(f) resource (proximity impact that adversely affects the features or attributes of the 4(f) resource). For more discussion of what constitutes a "use" of Section 4(f) resources, see Publication 349, *Section 4(f) Handbook*. The *de minimis* impact criteria of "no adverse effect" are defined for historic sites by a Section 106 determination of No Adverse Effect or No Historic Properties Affected. The criteria for publicly owned parks, recreation areas, and wildlife and waterfowl refuges are defined as those impacts that do not "adversely affect the activities, features, and attributes" of the Section 4(f) property that qualify the property for protection under Section 4(f).

If a Section 4(f) resource is used by the alternatives in a transportation project, and that use is not *de minimis*, FHWA must determine if a Feasible and Prudent Total Avoidance Alternative exists. If there are no Feasible and Prudent Total Avoidance Alternatives, FHWA must determine which alternative causes the least overall harm to Section 4(f) resources. This entire process must be documented in a Section 4(f) Evaluation, which must be approved by PennDOT and FHWA for Federal-aid projects and projects involving other USDOT actions. In addition to identifying the affected Section 4(f) resources in the EIS, separate Section 4(f) Evaluation documentation must be completed and appended to the EIS.

Depending on the specifics of the Section 4(f) use(s) on a project, a Programmatic Section 4(f) Evaluation may be applicable. There are five Nationwide Programmatic Section 4(f) Evaluations including: minor uses of parks, recreation areas and wildlife/waterfowl refuges; minor uses of historic sites; historic bridges; bikeway or walkway construction projects; and projects that result in a net benefit to the Section 4(f) property. Each Programmatic has a list of criteria to be met for the Programmatic to be considered applicable. There are forms to complete as the Section 4(f) documentation for each of the Programmatics, as well as forms for Non Applicability/No Use, Temporary Occupancy, and *De Minimis* uses. The latest version of the forms can be

found via links in Publication 349, *Section 4(f)/Section 2002 Handbook*, which also contains guidance on the preparation of Section 4(f) Evaluations. For additional guidance, consult with HDTS.

Socioeconomic Resources

Residential, commercial or industrial facilities that could be impacted by the project will be identified. This will include existing structures as well as proposed development areas. Effects on community cohesion should also be addressed. It may be useful to know the boundaries of these properties by obtaining tax parcel mapping. Community facilities and services that could be affected as a result of the proposed project should be identified. Community facilities and services would include such things as: recreational facilities, social facilities, emergency service providers, utility companies, schools, churches and cemeteries. Population data, including minority and low-income populations, should be identified in accordance with Executive Order 12898 ("Environmental Justice") and Title VI of the Civil Rights Act. Coordination should be undertaken with local, public and municipal officials to identify their concerns and goals for the proposed project.

Visual Resources

Visual character and quality of the study area, should be identified. The limits of the visual environment, or viewshed, generally include views of the transportation facility from the study area and views of the study area from the transportation facility. Visually sensitive resources, which may include historic properties or recreational areas, for example, should be identified. The effects of each alternative on the visually sensitive resources should be assessed.

Air Quality

Projects have potential air quality impacts on a regional level and a local level. The regional air quality impact is cumulative in that all projects in an ozone or $PM_{2.5}$ (particulate matter) nonattainment area (region) must be analyzed as a whole at least once every two years when the TIP is updated. This analysis, called a conformity analysis, is conducted at the regional/local planning organization level with PennDOT's assistance. All projects in a nonattainment area must come from an approved (conforming) TIP or Long Range Transportation Plan (LRTP).

Certain capacity adding projects in air quality nonattainment areas must come from a Congestion Management Process (CMP). There are nine Transportation Management Areas (TMAs) in Pennsylvania where a CMP analysis is developed for some capacity adding projects. These TMAs are Philadelphia, Pittsburgh, Lehigh Valley, Harrisburg, Scranton, Reading, Lancaster, Shenango Valley, and York.

Project level air quality impacts are assessed with consideration for carbon monoxide, particulate matter (PM_{10} and $PM_{2.5}$), and Mobile Source Air Toxics (MSATS) associated with the project.

Refer to Publication 321, *Project Level Air Quality Handbook*, for further information on project level analysis.

Noise

Noise impact analysis is studied to determine the existing and future projected noise impacts associated with project alternatives. Project level noise analysis is directed toward evaluation of impacts to human activity or sensitive receptors such as residences, schools, libraries, etc. In general, there will be no noise impacts if there are no sensitive receptors. Where sensitive receptors could be affected by a proposed project, monitoring of existing noise levels can be done to determine if there will be an effect and whether consideration of noise abatement is warranted, feasible, and reasonable. Refer to Publication 24, *Project Level Highway Traffic Noise Handbook*, for detailed noise analysis guidelines.

Vibration

As residential structures and other facilities are identified, thought should be given to receptors that might warrant vibration analysis. Vibration studies should be conducted in accordance with Report No. FHWA-RD-78-166 *Engineering Guidelines for the Analyses of Traffic-Induced Vibration,* FHWA Office of Research and Development.

Municipal, Industrial, and Hazardous Waste Sites

In addition to the residential and community facilities information, potential municipal, industrial, and hazardous waste sites should be investigated. Environmental covenants should also be researched. This generally entails a Phase I Environmental Site Assessment (ESA) to be completed. If possible waste sites are identified, Phase II ESAs and Phase III ESAs may be completed through final design. Publication 281, *Waste Site Evaluation Procedures Handbook,* provides guidance for conducting waste site studies and due diligence procedures.

If wastes are to be handled during the project, a summary of the coordination with the PA DEP should be included in the Technical Support Data and referenced in the EIS.

NOTE: Phase I and II ESA Reports are approved by the Originating Office. If a Phase II ESA recommends a Phase III ESA, the draft report must be approved by the Bureau of Maintenance and Operations' (BOMO) Strategic Environmental Management Program (SEMP) group. The SEMP group must approve all Phase III Scopes of Work.

Indirect Effects

Indirect effects are defined as those impacts caused by the action but that are later in time or farther removed in distance, but still reasonably foreseeable. The potential for growth-related effects and other effects related to changes in the pattern of land use, population density or growth rate, and related effects on air, water and other natural systems including ecosystems as a result of the proposed project should be evaluated. Factors affecting indirect effects range from conducive zoning, availability of sewer and water, available land and new access provided by the facility. After the potential for indirect development is established, impacts on the surrounding environment should be documented. The area in which potential indirect effects could occur as a result of a project will vary depending on the type of undertaking. For example, a radius of 0.5 mile from a proposed interchange could be considered the range of effect from such a facility. Environmental features within this range should be documented and an assessment made on the potential of impacts from related development. For example, wetlands should be mapped and impacts calculated from future commercial strip development that may be caused by a new interchange. For an EIS, this documentation may be included as a check-off list noting the existence of other growth-related factors (water/sewer, land, etc.). If these factors are present, then a short description of potential environmental impacts should also be noted. For resources with direct impacts, include a discussion for indirect impacts under the heading for that resource where direct impacts are discussed. A separate indirect impacts section of the EIS would be appropriate for indirect impacts related more to land use. Coordination with local land use planners should also be indicated in the Technical Support Data files. More information is available in Publication 640, *Indirect and Cumulative Effects (ICE) Desk Reference*.

Cumulative Effects

Cumulative effects documentation should include an analysis of the incremental impacts of the action when added to other past, present and reasonably foreseeable actions, regardless of what agency (Federal or Non-Federal) or person undertakes such other action, on significant environmental features (environmental features can be grouped as human and/or ecological systems). Initially, important environmental features should be determined, and then a cumulative effects analysis conducted for each feature. For instance, water quality may be determined by the Project Team as an important environmental feature. With water quality in mind, all past, present and reasonably foreseeable actions should be considered on the overall impact to water quality. Past actions could include mining in the area; present actions could include the new highway; and future actions could include a proposed nuclear power plant. The general idea is to provide the decision-makers with enough information to determine whether the proposed project, in combination with other incremental actions

over time and within a region, could render the specified environmental feature unsustainable. Parameters for geographic and temporal boundaries should be established during the scoping process or early in the decision-making process for resources directly impacted by the proposed project. Likewise, threshold conditions for each environmental feature should be documented. However, there is much controversy and little scientific research on thresholds and it is best left to professional judgment. More information is available in Publication 640, *Indirect and Cumulative Effects (ICE) Desk Reference*.

Invasive Species

Invasive species represent one of the most significant ecological threats of the 21st century. Invasive species are exotic plants and animals that have been intentionally or accidentally introduced into native ecosystems. These invasive species displace native species and change the ecological structure of the invaded community, sometimes with dire consequences to native plants and animals. An Executive Order 13112 was issued in 1999, requiring each federal agency to address the issue of invasive species. The FHWA Policy Statement on Invasive Alien Species (April 22, 1999), overviews the federal efforts to prevent and control the introduction of invasive species during construction and maintenance activities. The *FHWA Guidance on Invasive Species* (August 10, 1999) gives a more detailed description of work items to be conducted to implement Executive Order 13112, including as part of NEPA analysis.

This analysis should include identification of any invasive terrestrial or aquatic animal or plant species that could do harm to native habitats within the project study area. This could involve the mapping of all existing invasive populations on and adjacent to the project and a survey of existing soils for invasive potential. The analysis should also include the potential impact of the disturbances caused by construction on the spread of invasive species. Ultimately, the analysis should include a discussion of any preventative measures or eradication measures that will be taken on the project. See Publication 756, *Invasive Species Best Management Practices*, for further guidance.

Energy

The DEIS should discuss in general terms the construction and operational energy requirements and conservation potential of various alternatives under consideration. The discussion should be reasonable and supportable. Consider the following:

- Are the energy requirements of various alternatives similar?
- Are the energy requirements of the build alternatives greater than that of the no-build alternative?
- Are the post-construction, operational energy requirements of the facility less with the build alternative as opposed to the no-build alternative? If so, it may be concluded that the savings in operational energy requirements would more than offset construction energy requirements and thus, in the long term, result in a net savings in energy usage.

For large-scale projects with potentially substantial energy impacts, the DEIS should discuss the major direct and/or indirect energy impacts and conservation potential of each alternative. Direct energy impacts refer to the energy consumed by vehicles using the facility. Indirect impacts include construction energy and such items as the effects of any changes in automobile usage. The alternative's relationship and consistency with a State and/or regional energy plan, if one exists, should also be indicated.

The FEIS should identify any energy conservation measures that will be implemented as a part of the Preferred Alternative. Measures to conserve energy include the use of high-occupancy vehicle incentives and measures to improve traffic flow.

Construction Impacts

Potential impacts associated mainly with transportation construction activities should be considered for each alternative. These may include, but are not limited to, the following:

- Economy and employment
- Access
- Water quality
- Air Quality
- Noise
- Utilities
- Vibration

3. Further Define Engineering Parameters. The engineering overview establishes design parameters based upon the type and scope of the project and the existing conditions in the area that may affect the location of the proposed improvements. Design criteria should be developed to suit each type of project in accordance with PennDOT's Design Manual. The Project Manager will determine engineering study requirements.

After gathering data from a review of maps, planning documents, and the Scoping Form, and from coordination with local officials, list the principal design and or engineering items that could affect location of transportation improvements. The following factors should be evaluated in this overview:

- Average Daily Traffic Volumes (ADT) and Average Annual Daily Traffic Volumes (AADT)
- Development trends
- Economic development within the study area
- Existing levels of service
- Existing roadway system in study area
- Geographic features and landforms
- Highway capacity
- Locations of population centers
- Locations of significant trip generators
- Mass transit interface
- Need for regional and through access
- Planned growth in region
- Residential areas
- Travel desires
- Zoning

Verify/reestablish a range of acceptable criteria or standards for the project; for example, acceptable levels of traffic service at intersections, acceptable design speed, basic geometric design requirements.

No methodology has been prescribed for conducting an engineering overview or compiling the results into a report. The Project Team must judge on a case-by-case basis the appropriate levels of effort for each project. This section will outline the most detailed process for identifying, developing, and selecting alternatives. Lesser levels of study may be appropriate on certain projects, especially those with less public/agency controversy and where one particular alternative clearly appears to minimize effects with addressing needs at a reasonable cost.

4. Select Range of Alternatives to Further Consider. Continue to evaluate the data amassed first in the pre-TIP process phases and documented through the Level 2 or Level 3 Screening Form and DSR, then through the NEPA scoping and preliminary alternatives analysis.

Applying a thorough understanding of the project's purpose and need, examine a variety of improvement alternatives that could satisfy the transportation requirements of the study area. During preliminary NEPA alternatives analysis, examine the broadest possible spectrum of improvements. As concepts are refined, the range of alternatives eventually will be narrowed even further to a more manageable number.

Preliminary alternatives usually encompass all reasonable alternatives and the No Build Alternative. Any number of the alternatives may proceed to the detailed alternatives study.

As early as practicable, the lead agencies must give participating agencies and the public the chance to become involved in defining the range of alternatives. The level of involvement will be determined by the lead agencies case-by-case, taking into account the overall size and complexity of the project. The form and timing of that involvement is flexible, and the lead agencies should coordinate beforehand and agree on when and in what form the participating agency and public involvement will occur. The opportunity for involvement must be publicized and is recommended to occur in the form of public workshops or meetings, as well as additionally through solicitations of verbal or written input, conference calls, postings on websites, distribution of printed materials, or any other involvement technique or medium. The project's coordination plan will establish the timing and form of the required involvement opportunities and the timing of the decision on the range of alternatives to be evaluated in the NEPA document. The opportunity for involvement must be provided prior to the lead agencies' decision regarding the range of alternatives to be evaluated in the NEPA document. The lead agencies' decision on the range of alternatives and their considerations in making that decision should be documented and shared with participating agencies to ensure that any disputes are surfaced as early as possible.

When selecting a range of study alternatives, the Project Team should be aware of the following alternative development parameters:

- Fulfillment of project needs for all users
- Avoidance of sensitive areas
- Connection of logical termini
- Independent utility
- No restriction of reasonably foreseeable future improvements
- Enhancement of planning and land uses
- Length sufficient to address all issues, while using the shortest practical route
- Responsiveness to service areas
- Service to traffic generators

Each alternative must incorporate the following engineering elements as well:

- Alternative alignment/analysis
- Intersections and/or interchanges
- Major drainage, structures, and utilities
- Typical section and right-of-way limits.
- Traffic analysis (20 year period)

The Project Manager will supervise the development of preliminary alternatives, discussing location and design features with the Project Team. Alternatives will be developed in sufficient detail so that agency reviewers and the public can judge their effectiveness and environmental sensitivity. Alternative designs should provide a sound basis for setting design parameters, determining right-of-way involvements, and evaluating impacts.

NOTE: Remember that projects need to be fiscally-constrained throughout the Process.

5. Alternatives to Be Considered. The following types of study alternatives may be considered:

- No build alternative
- Upgrade alternatives
- Alternatives on new alignment
  - Designated as limited access or free access
  - Using interchanges or intersections
- Transportation System Management (TSM) and Transportation Control Measures (TCM)
- Mass transit alternatives

- Multi-modal alternatives
- Combination alternatives

A dynamic blend of engineering skill and environmental sensitivity marks this stage of the Process. Alternatives on new alignment should be designed to connect logical termini while avoiding as many vital community and natural resources as possible. Making avoidance a priority from the outset facilitates the development of more environmentally sensitive transportation improvements. Thus, it is essential to have identified and mapped the study area's environmental, social, and economic features before any engineering lines are drawn. Regulatory and resource agencies should become involved in alternatives development through appropriate forums.

Ensure that the placement of each and every segment is purposeful and justifiable. Throughout the development of alternatives, the project engineer will refer to study area mapping and the results of the environmental and engineering overview. At every point, the engineer will apply his/her knowledge of public needs and resource agency concerns to the development of thoughtfully designed well-balanced alternatives.

Location decisions are made within the framework of goals, objectives, and criteria established earlier in the-process which define the structure and function of the finished product. As stated before, the engineers must strive to design alternatives that:

- Are sensitive to environmental resources
- Avoid resources
- Minimize impacts where resources cannot be avoided
- Promote compatible land uses
- Serve principal community needs

Desirable design criteria should be applied where possible and minimum criteria used when necessary. Seek to achieve a harmonious relationship vertically, horizontally, and in relation to resources and impacts. The alignment should be thoughtfully designed to minimize impacts to resources and significant features while addressing the project purpose and need. Detailed documentation of decision-making is essential to agency and public understanding.

The establishment of preliminary alternatives should follow accepted route location methodologies that facilitate the integration of significant project features. The manager should give early consideration to geometric form (alignment, bifurcation), spatial environment, balancing of earthwork, access considerations, terrain features, protection of resources, and impact on development. Other necessary engineering factors that should be studied early in the development process include adequate, safe interchanges, right-of-way, and service or frontage roads. All design standards must be met at this stage of alternatives development. Design exceptions will be addressed only in final design.

In sum, the project engineers must develop a talent not only for fitting the road to the terrain, but for fitting the road to the surrounding community and its natural environment. The Project Team must be keenly aware of the form a highway takes; that is, the spatial form perceived by motorists traveling the road, and the form perceived by communities residing on either side of the highway. From the beginning of the development process, strive to design ideal alternatives; that is, balanced and aesthetically pleasing alternatives that satisfy project needs with sensitivity to community concern and special features of the study area. If all primary objectives are considered, the very first alternative laid out should be the very best alternative possible given the available information.

Avoidance of environmental resources is the essence of the integrated NEPA/404 process which guided the development of these procedures. Throughout alternatives development, engineers should make every effort to modify or shift alignments to avert impacts to regulated resources. Despite the project engineers' most concentrated efforts to achieve sensitivity, preliminary alternatives may not fully avoid all significant resources. Trade-offs and minimization may be necessary. In other cases, localized avoidance options may be designed to address the strict regulatory requirements of Section 4(f) of the US Department of Transportation Act, Section 404(b) (1) of the 1972 US. Clean Water Act, floodplain regulations, etc. All of these components should be carried forward and examined in greater detail during detailed alternatives studies.

6. Alternatives Screening Based on Purpose and Need. The term "alternatives screening" is commonly used to refer to the process for reviewing a range of preliminary alternatives or concepts and deciding which ones to carry forward for detailed study. The primary function of an alternatives screening process is to determine reasonableness; that is, screening provides a means of separating the unreasonable alternatives (which can be eliminated without detailed study) from the reasonable alternatives (which must be carried forward for detailed study). If there are many reasonable alternatives, the screening process also can be used as the basis for defining a reasonable range that represents the full spectrum of reasonable alternatives.

An alternative that does not meet the purpose and need is, by definition, unreasonable - and for that reason, it can be eliminated in the screening process. An alternative that does meet the purpose and need can still be rejected as unreasonable based on other factors, including environmental impacts, engineering, and cost. For example, if there are two alternatives that both meet the purpose and need to a similar degree, but one of them is much higher-impact and more costly, those factors can be cited as a basis for rejecting the higher-impact alternative as unreasonable.

NOTE: Lead agencies frequently are asked to consider alternatives that "partially meet" the purpose and need. The agency's obligation to consider such alternatives depends on how the purpose and need has been defined. If the project has two distinct purposes, each of which is considered primary (i.e., vital to the project), an alternative that clearly fails to meet one of those purposes is not reasonable and should be eliminated. The fact that an alternative meets one of the primary purposes does not make it a reasonable alternative. On the other hand, if an alternative satisfies the primary purpose or purposes of the project, but fails to satisfy some secondary purpose that is not essential to the project, then the alternative could be considered reasonable. This underscores the benefits of providing a clear statement of the essential elements of the purpose and need.

7. Alternatives Screening Based on Engineering and Environmental Factors. For those alternatives still under consideration after alternatives screening based on purpose and need, the next level of screening consideration is examining the engineering factors and environmental impacts of the alternatives. Studies are conducted to quantify the general impacts of the preliminary alternatives. As always, information should be compiled and arranged with an eye to future documentation. When quantifying impacts it is helpful to provide a concise narrative and/or graphics to illustrate the existing social, economic, and environmental setting of the area affected by the preliminary alternatives analysis alternative (see Figure 5.1 for list of resources to discuss), incorporating data and analysis that bear on potential impacts. Ensure that the data is commensurate with the importance of the impact. Photographs, illustrations, and other graphics should supplement the narrative to clearly delineate the study area and illustrate relevant issues. Then analyze the probable social, economic, and environmental affects, both beneficial and adverse, of each preliminary alternatives analysis alternative. Include enough substantive data to allow comparative evaluation of the alternatives.

Charts and figures illustrating potential impacts in these categories should be developed. Matrices should present sufficient data to define both the quality and quantity of the affected resources and the extent of the expected impacts.

In conjunction with FHWA, the Originating Office will establish the level of detail needed in justifying elimination of alternatives. The level of detail should be appropriate to the nature of the project, the number of alternatives, and the potential significance of the environmental impacts. Keeping an eye to the alternative analysis required by other substantive statutes, such as Section 4(f), Section 404, and Chapter 105, if triggered.

8. Ongoing Coordination with Cooperating and Participating Agencies. The lead agencies are responsible for the development of the range of alternatives. In developing the alternatives, the lead agencies must provide opportunities for the involvement of participating agencies (and the public) and must consider the input provided by these groups. As early as practicable, the lead agencies must give participating agencies the chance to be involved. The project's coordination plan will establish the timing and form of the required involvement opportunities.

Participating agencies also should be collaborated with to determine methodologies to be used and the level of detail required in the analysis of alternatives. Consensus is not required, but the lead agencies must again consider views of the participating agencies with relevant interests before making a decision on a particular methodology. The project's coordination plan will establish the timing and form of the required collaboration with participating agencies in developing the methodologies.

If a cooperating or participating agency has permit or other approval authority over the project, it would be useful, but not required, for the lead agencies and that permitting agency to develop jointly the range of alternatives that can be utilized for all applicable environmental reviews and requirements.

It may be appropriate to conduct an Agency Coordination Meeting (ACM) to obtain input from ACM agency representatives.

9. Prepare a Preliminary Alternative Analysis Report. The Originating Office is responsible for preparing a Preliminary Alternatives Analysis Report. Environmental and engineering data must be included in the report to fully explain the scope and history of the project, study area, environmental and engineering features, preliminary alternatives, and coordination efforts. Draw upon previously gathered information when appropriate; for example descriptions of the project and the study area, and project need analysis. Plan ahead when writing sections or summaries to identify data which might be useful in subsequent study documents. However, do not stray from the focus of the document, which is to provide sufficient environmental and engineering data to identify reasonable alternatives for further study.

Consider the following when preparing a report:

- Carefully develop alternative information and assign a name, number, or letter to each alternative
- Structure and format the report for both an internal and external audience
- Effectively utilize maps, photographs, graphic bases, illustrations, and charts. These exhibits are frequently a deciding factor in whether study findings are understood.

The Project Team will determine the format and content of the report. The sequence of presentation will generally include a front page, title page, table of contents, summary, body of the report, and appendices. Included below is one example of a Table of Contents. Use the following format as a guide and innovate as appropriate; however, consult EPDS before making significant changes in content or format.

Suggested Table of Contents:

I. Introduction
II. Review of Project Needs
III. Description of Preliminary Alternatives
IV. Environmental Overview
V. Evaluation Methodology and Results
VI. Conclusions
VII. List of Preparers
VIII. References
IX. Appendices

In addition, the following specific factors should be considered in order to insure a high quality report:

- Effective mapping will show controlling factors within the study area:
    - Terrain features
    - Physical controls
    - Development areas
    - Significant resources
    - Transportation facilities.

- The process for eliminating alternatives must be sound. The report must present:

  - Comprehensive descriptions of all alternatives
  - Effective graphics to show significant features
  - A thorough explanation of needs and requirements of study area
  - A range of alternatives that can serve the project need in a variety of ways
  - Options that attempt to balance all impacts.

10. Central Office and FHWA Review of Draft Preliminary Alternatives Analysis Report. Submit the draft to HDTS for review. Continue to advance ongoing study activities when the report is submitted. Concurrently, HDTS, in coordination with EPDS, will make an effort to expedite both Central Office and FHWA review and approval of the report. In the event that significant items in the report require follow up action, BOPD will immediately advise the Originating Office by telephone or email. If determined necessary, a special meeting or presentation can be arranged to handle all follow-up items.

11. Finalize Preliminary Alternatives Analysis Report and Share with Agencies and the Public. Provide copies of the Preliminary Alternatives Analysis Report to resource agencies. Announce that the Preliminary Alternatives Analysis Report has been completed in a newsletter, project website, at a public meeting, etc. As a technical background document, it contains only a portion of the complete study data that will appear in the EIS. Formal public circulation of a Preliminary Alternatives Analysis Report is not required.

NOTE: If the preliminary alternatives analysis is being shared with the public, make sure the preliminary alternatives analysis, website, newsletter, etc., include a disclaimer that it is a technical document and only a portion of the complete study information.

B. Detailed Alternatives Analysis. The second stage in the two-stage alternatives development process, the detailed alternatives analysis, evaluates in greater detail the smaller number of alternatives determined to warrant further consideration during the preliminary alternatives analysis. In most cases, the alternatives retained after the conclusion of the preliminary alternatives analysis will be studied in more detail and presented and evaluated in the EIS. Some complex projects with numerous alternatives carried over from the preliminary alternatives analysis may require an additional screening analysis before a more detailed evaluation of alternatives can be completed. More primary field survey source data is used to evaluate impacts on those alternatives deemed most worthy of further consideration. The goals of the detailed alternatives analysis are to:

- Balance transportation, community, and environmental factors in such a way that all defined needs and objectives of a proposed transportation project are satisfied;

- Identify, quantify, and/or calculate each environmental impact and if significant, or adverse, either eliminate it or insure it is suitably accounted for either through sensitive and responsive design or through mitigation (for regulated resources requiring mitigation); and

- To the extent reasonable, refine the alternatives to avoid, minimize, or mitigate adverse impacts to regulated resources.

The preliminary alternatives analysis followed an "overview" approach; the detailed alternatives analysis, on the other hand, focuses on individual resources and requires more detailed engineering design documentation. The review comments from the preliminary alternatives analysis report will be incorporated into detailed alternatives work including refined project need, refined alignments, and focused delineation in the technical analysis work. All regulated environmental features that should be avoided, if possible, should be identified and mapped, so that impacts and mitigation can be determined. Detailed field work is conducted during the detailed alternatives analysis.

1. Perform Detailed Engineering and Environmental Analyses.

Engineering Analysis

The engineering analysis prepared in the preliminary alternatives analysis is used as the basis for the more detailed analysis required in detailed alternatives analysis. The exact items to be analyzed will depend on the scope of the study established by Central Office and the project type. Study requirements and presentation requirements must be considered when collecting data and documenting design details. The overriding concern when deciding the level of detail is whether the information is needed to more effectively avoid or minimize impacts or to clarify the design.

The following types of factors should be considered during the development of detailed alternatives:

- Measures of effectiveness
- Drainage facilities
- Environmental enhancement
- Geology, soils, earthwork
- Geometric analysis
- Interchange schematics
- Intersections, interchanges, and overpasses
- Land use requirements
- Major structures and walls
- Mitigation potential
- Right-of-way limits
- Topography and terrain
- Traffic capacity analysis
- Typical sections
- Utilities
- Visual quality

Environmental Analysis

Environmental analysis and documentation define the impacts of the transportation project to help determine the most environmentally sensitive study alternative. The information should have sufficient scientific and analytical substance to provide a basis for evaluating the comparative merits of the alternatives. The information and data collected will be used to satisfy state and federal requirements and will be made available upon request to agencies, interest groups, and the general public upon circulation of the DEIS. The environmental consequences evaluated in the preliminary alternatives analysis can be used as a basis for the more detailed discussion in the detailed alternatives analysis.

Because a variety of audiences are involved in reviewing this analysis, it is important to present the information concisely and without technical jargon. Some technical reports may be targeted to specific professional audiences but summaries should be provided for the general public. This analysis will be used to support findings of significance and effect, and for meetings and hearings. The findings and conclusions must be articulated clearly within the scope of the project. As was emphasized previously, there must be integration between the environmental analysis and the engineering work.

According to the FHWA Technical Advisory on preparing environmental documents, the description of the proposed project impacts should not use the term "significant" in detailing the level of impacts. FHWA believes that there is no benefit to be gained from its use. If the term "significant" is used, however, it should be consistent with the CEQ definition and be supported by factual information.

New information may be introduced after the preliminary alternatives analysis is completed, necessitating reevaluation of any prior decisions that may be affected by this information.

The following specific environmental assessment areas should be included in the detailed alternatives analysis depending on the nature and location of the project. See Figure 5.1 for the list of resources. The EIS must address direct impacts of construction in addition to secondary and unavoidable indirect impacts.

Transportation projects have both direct and indirect effects on the environment. Indirect effects, also known as secondary impacts, include late-occurring changes to the following:

- Accessibility
- Air quality
- Development-induced traffic
- Growth rate
- Natural resources
- Cultural resources
- Noise levels
- Social and economic conditions.

NEPA and the various regulations for its implementation mandate the assessment of reasonably foreseeable effects in the EIS.

Computer models may be used in evaluating the project alternatives. If so, the model type, formula, and assumptions must be documented and certified as professionally acceptable. If models are required for permits, this must be stated.

Conceptual mitigation strategies should be considered. Mitigation under certain statutes (e.g., Section 4(f), Section 404, and PA Chapter 105) includes evaluating avoidance and minimization of impacts before looking to compensation.

Since many of the permit requirements for the project involve environmental documentation, the Project Team should integrate those requirements with the studies prepared for the detailed alternatives analysis. This will insure that permitting issues are addressed and made a part of the evaluation criteria. It is important to reach a decision under NEPA that also holds up under other regulatory processes such as Section 404 of the Clean Water Act, Section 106 of the National Historic Preservation Act, Section 7 of the Endangered Species Act, and Section 4(f) of the U.S. DOT Act.

Resources which require the sequential processing of reports, such as historic structures, archaeology, wetlands, etc. should be undertaken as early as possible to avoid delays in project development. Where data from one evaluation is needed for another, be sure to build these needs into the project action plan.

2. Dismiss Alternatives. It may be appropriate to further narrow the range of alternatives at this point, especially for large, complex projects. Detailed engineering analyses may reveal that some alternatives are impracticable from a design perspective and should be eliminated to avoid unnecessary work. Other alternatives may prove environmentally undesirable; however, carefully weigh the pros and cons of dismissing detailed alternatives solely on the basis of impacts. Perform necessary public and agency coordination before dismissing more alternatives.

When eliminating alternatives from the final stages of detailed study, consider the views of the cooperating agencies, participating agencies, and the public.

The level of detail needed to justify the elimination of alternatives must be sufficient to support the alternatives analysis required by other statutory processes. A greater level of detail may be required in documenting the elimination of alternatives that avoid impacts to wetlands because Section 404(b)(1) of the Clean Water Act sets forth strict guidelines for the alternatives analysis. When eliminating an alternative sensitive to wetlands, state the reasons why the alternative is not *practicable*. Similarly, alternatives should be developed in detail to avoid potential impacts to Section 4(f) resources. Clearly and comprehensively document reasons for dismissing alternatives as not prudent or feasible which would have minimal impacts to Section 4(f) resources.

3. Coordinate with EPDS Regarding Detailed Alternatives Analysis Documentation Requirements. The Originating Office is responsible for the basic review of the detailed alternatives analysis efforts. Coordination with EPDS should occur to discuss the format of the detailed alternatives analysis documentation. The detailed alternatives analysis documentation is reviewed by the Project Manager, environmental manager, staff and supervisors, or an office interdisciplinary team, if warranted.

The primary goal of the review process is to reach consensus on alternatives to be evaluated and to balance the impact of the project on the environment. The objectives of the Originating Office and Central Office review are to:

- Insure adequacy and completeness of study data,
- Enable effective presentation of data to the agencies and the public, and
- Verify that all relevant items and issues are clearly stated and readily understandable.

HDTS acts as the coordinator of Central Office review and also reviews the engineering analysis. EPDS reviews the environmental analysis and the transportation project delivery procedures that are being used.

4. Finalize the Detailed Alternatives Analysis Documentation and Share with Agencies and the Public. Provide copies of the detailed alternatives analysis documentation to resource agencies at an ACM. Announce that the detailed alternatives analysis documentation has been completed in a newsletter, project website, at a public meeting, etc. Obtain input from the agencies and the public on the alternatives analysis prior to circulating the EIS.

As technical background documentation, it contains only a portion of the complete study data that will appear in the EIS. Include a disclaimer of this in anything provided to the public. Formal public circulation of the detailed alternatives analysis documentation is not required.

5.4 DEIS PREPARATION AND CIRCULATION

The Draft Environmental Impact Statement (DEIS), the culmination of all the preceding technical studies and analyses, is an official NEPA document that presents a full and fair discussion of environmental impacts and provides decision-makers and the public with evaluations of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment.

A full account of the results of the alternatives analyses, particularly the environmental impacts predicted for each alternative under consideration, forms the core of the document. In addition, the DEIS should:

- Describe project purpose and need
- Briefly justify why certain alternatives were studied while others were dismissed
- Summarize the engineering and environmental studies
- Outline agency and public consultation and coordination
- Identify a recommended preferred alternative if one has been named based on engineering and environmental studies and public and agency input

A recommended preferred alternative may or may not be identified in the DEIS. This is dependent on how definitively the evidence points to a particular alternative or whether more public input is needed in order to make a decision. If a recommended preferred alternative is identified in the DEIS, preparers should present all studied alternatives and make the case for why a particular alternative is the recommended preferred alternative. If a preferred alternative is *not* identified in the DEIS, preparers should demonstrate that no single alternative clearly stands out at this time as the most workable and environmentally sensitive course of action. Consult with Central Office and FHWA to develop a strategy for presenting alternatives. For more complex projects, the Program Management Committee (PMC) should be closely involved in deciding upon a recommended preferred alternative.

The recommended preferred alternative, can, if determined appropriate, be developed to a higher level of detail than the other alternatives. (See the next note box.)

Cooperating agencies must also be included in the discussion of the recommended preferred alternative. The USCOE, which serves as a cooperating agency for all projects requiring a Section 404 permit, should become actively involved in the evaluation of alternatives as early as possible in order to expedite the integrated NEPA/404 procedures for DEIS review and Section 404 permit approval. As the Section 404 review authorities, the USCOE and the EPA determine if the recommended preferred alternative meets the Guidelines established in Section 404(b)(1) of the Clean Water Act and is in the public interest. In short, these agencies decide whether the recommended preferred alternative is "the practicable alternative that will have the least environmentally damaging effect on the aquatic ecosystem." Input from these agencies will be critical at this stage of the process. Consider their comments carefully and make every effort to comply with their suggestions. PA DEP should also be included due to the alternatives analysis required under the Chapter 105 permitting process.

The EIS must be written for a broad audience that includes both technical and non-technical readers. Tailor the presentation to the understanding of the average citizen by offering simplified explanations of such specialized disciplines as noise impact analysis, and condense complex information wherever possible into charts, tables, and other graphics for easier interpretation. Incorporate the technical details by referencing technical reports in the DEIS for those who wish to examine that information.

NOTE: SAFETEA-LU permits the preferred alternative to be developed to a higher level of detail than the other alternatives for only the following reasons: (1) to facilitate the development of mitigation measures, or (2) to facilitate concurrent compliance with other applicable environmental laws. When the preferred alternative is developed at a higher level of detail, the lead agencies should take particular care to ensure that the evaluation of alternatives reflects the required rigorous and objective analysis. Each alternative must be explored at a sufficient level of detail to support a reasoned choice.

Key issues for the NEPA alternatives evaluations in these cases will be the use of "apples-to-apples" comparisons of alternatives, and the assurance that additional information developed on the preferred alternative is evaluated to identify and address any new or different information that might affect the choice of alternatives.

As always, the comparison of alternatives has to be done in a fair and balanced manner. If there are substantial differences in the levels of information available for the alternatives, it may be necessary to apply assumptions about impacts or mitigation to make the comparisons fair. For example, if mitigation is designed only for the preferred alternative, then assumptions that comparable measures can be taken to mitigate the impacts of the other alternatives should be included in the comparative analysis of the alternatives even though those other alternatives are not designed to the same level of detail. This comparison of mitigation across alternatives will ensure that the preferred alternative is not presented in an artificially positive manner as a result of its greater design detail.

The NEPA document should disclose the additional design work and the changes in impacts arising out of that design detail. If the impacts identified at the higher level of design detail are substantially different, they should be reviewed to determine whether additional work on other alternatives and/or reconsideration of the identification of the preferred alternative is warranted.

Questions 39 through 46 of FHWA and the Federal Transit Administration's (FTA) joint *SAFETEA-LU Environmental Review Process Final Guidance* (November 15, 2006) specifically address the Preferred Alternative.

A. Assemble Technical Documentation. At the beginning of the NEPA process, the Originating Office began to maintain Technical Support Data files for the project containing detailed information as to the engineering and environmental studies conducted for each alternative. These Technical Support Data files serve as the support documentation for the DEIS. Additional information on compiling the Technical Support Data is in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C,* Appendix F.

Some specific reports are required as part of the application process for certain approvals. These Technical Basis Reports (TBRs) describe engineering or environmental studies in specific technical subject areas. Although they supplement the summaries in the EIS, TBRs are stand alone reports. TBRs should only be prepared at the request of the reviewing agencies and when the Department determines that they are appropriate.

Similarly, technical documentation (if agreed upon by all parties during project scoping) must be prepared to support certain permit applications. If required, a Section 404 permit application should be prepared for submission to the USCOE. In keeping with the integrated NEPA/404 process, the DEIS should include the permit application. Additionally, a request needs to be made to the PA DEP for Section 401 Water Quality Certification (WQC), which requires an Environmental Assessment under Chapter 105. The Originating Office and FHWA should discuss what should be included as an appendix to the DEIS, referenced and made easily publicly accessible during the DEIS circulation period, or just maintained in the Technical Support Data files.

B. Conduct an Interdisciplinary Review of Technical Documentation. The Originating Office reviews the Technical Support Data files and TBRs for completeness before contacting BOPD to arrange for a technical review. In general, the documentation should be reviewed by an interdisciplinary group of technically competent experts, including:

- The Project Manager for Design
- The Originating Office Environmental Manager
- The Assistant District Engineer, District Liaison Engineer, or designated representative
- The management consultant (if one has been assigned to the project)
- Representatives from Central Office, FHWA, and the cooperating agencies, as appropriate.

This working group will determine if analyses were completed adequately and accurately and that the documentation is comprehensive and well organized. They may review the complete Technical Support Data files maintained in the Originating Office. Additional information on the organization of Technical Support Data can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C,* Appendix F.

C. Prepare DEIS. As with the Technical Support Data files, the Project Team should have been preparing information to be used in the DEIS as the engineering and environmental studies were completed. If technical documentation is carefully composed and organized throughout the Process, writing the EIS will proceed much more swiftly. Properly indexed technical files that include abstracts or summaries to aid interpretation of data will be invaluable to the preparers. Encourage the EIS contributors to use summaries or portions of reports that have already been prepared.

1. How to Approach DEIS Preparation. The purpose of an EIS, as stated in the Council for Environmental Quality (CEQ) regulations (40 CFR § 1502.1), is that it "*shall provide full and fair discussion of significant environmental impacts and shall inform decisionmakers and the public of the reasonable alternatives which would avoid or minimize adverse impacts or enhance the quality of the human environment. Agencies shall focus on significant environmental issues and alternatives and shall reduce paperwork and the accumulation of extraneous background data. Statements shall be concise, clear, and to the point, and shall be supported by evidence that the agency has made the necessary environmental analyses. An environmental impact statement is more than a disclosure document. It shall be used by Federal officials in conjunction with other relevant material to plan actions and make decisions*."

When preparing the DEIS, the goal is a quality document that is also concise and engaging to readers. This can be achieved by incorporating the interrelated principles discussed below as the DEIS is developed.

Tell the project story. NEPA is a process. The DEIS should clearly and concisely tell the story of how the project was developed. The reader should easily understand the purpose and need for the project, how the alternative(s) meet those project purpose and needs, what the impacts of those alternatives would be, and the reasoning and justification as to how a preferred alternative was selected.

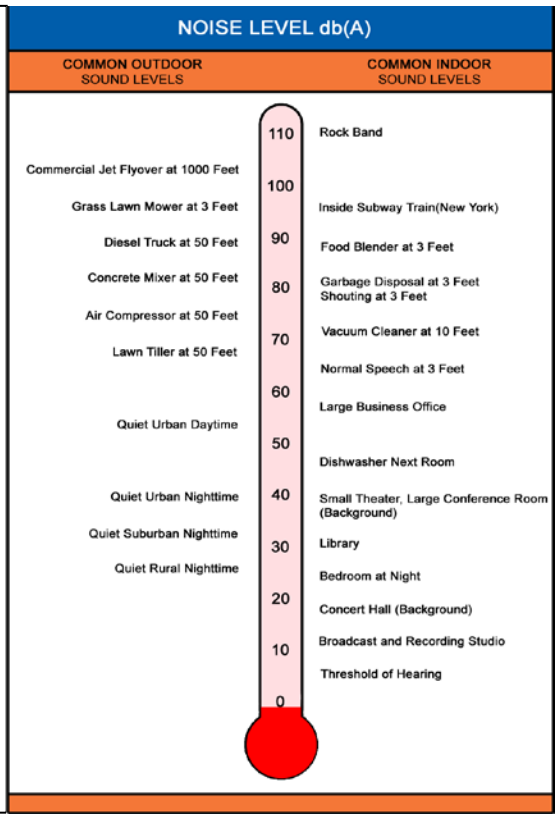
Utilize a structured document outline. The next section discusses the recommended outline of a DEIS. This outline forms the structure in which to tell a project's story. The project team should discuss and agree to a project's DEIS outline prior to the start of its preparation to ensure that the approach is appropriate for that particular project. There can be flexibility on a project-to-project basis (such as a question-and-answer format), but the Department and FHWA must agree on any variations from the recommended outline.

Remember the DEIS target audience. The audience of a DEIS is the general public, public officials, regulatory and resource agencies, and decision-makers. It provides information for public and agency consumption and comment prior to decisions being made and actions being taken. Keep this in mind with the concepts that follow below. Not all readers are experienced transportation professionals.

Write clearly and use plain language. Keeping the range of the DEIS audience in mind, it is very important to draft the DEIS so that information, concepts, and analysis can be understood by all readers.

- ***Define technical terms.*** Most readers of DEIS are not transportation professionals and are not familiar with engineering and environmental terminology. Technical terms that go undefined can be viewed by readers negatively as "jargon", perceiving it as obscure and pretentious. To communicate effectively, it is important to define these terms when they are used in the DEIS. Use words and explanations in the definition that people can relate to. One technique that can be used is adding sidebars or boxes in the DEIS to visually highlight the explanation of terminology. Sometimes terms and concepts may be best explained through a visual graphic. For example, the different levels-of-service (LOS) can be shown in a graphic in the DEIS to visually explain the difference between an LOS A and an LOS D by how congested a roadway is with vehicle traffic.

EXAMPLE OF DEFINING TECHNICAL TERMS (Noise):
Noise is measured in decibels (dB). To account for human sensitivity to noise, decibels are measured on the A-weighted scale (dB(A)). The A weighted scale is the preferred measurement for traffic noise because it is comprised of the sound level frequencies that are most easily distinguished by the human ear, out of the entire sound level spectrum. Highway noise is categorized as a linear noise source, where varying noise levels occur at a fixed point during a single vehicle pass by. These fluctuating noise levels can be characterized by a single number known as the equivalent noise level (L_{eq}). The L_{eq} is the value of a steady state sound level that would represent the same sound energy as the actual time varying sound evaluated over the same time period. The highway traffic noise analysis focuses on the hourly, A weighted L_{eq}. For example, a diesel truck 50 feet away would have a L_{eq} of approximately 90 dB(A). The figure to the right shows typical indoor and outdoor noise levels.



- ***Spell out acronyms often and/or limit their use***. Transportation project development contains many acronyms specific to the industry that are not known by the public. Do not isolate readers by making them guess what something stands for. Use acronyms when they are necessary, spelling them out at their first use and as appropriate thereafter. A list of acronyms can also be provided to help guide readers.

- ***Write in the active voice.*** Active voice, versus passive voice, is clearer to understand and is more concise. Passive voice can lend itself to confusion and interpretation due to more "wordy" statements than active voice to convey information and conclusions.

  Passive voice: Approximately 830 feet of Mill Run would need to be relocated with the Preferred Alternative.

  Active voice: The Preferred Alternative would relocate approximately 830 feet of Mill Run.

  Passive voice: Wetland boundaries were delineated and impacts from each alternative calculated.

  Active voice: The project team delineated wetlands and calculated each alternative's impacts.

- ***Avoid confusion from ambiguous or opaque discussion of analysis.*** The process and conclusions drawn must be unmistakable. All readers should come away from the DEIS with the same understanding of the story of project development and results of impact analysis.

Use effective graphics and visual elements. Well-thought out visual elements and graphics in a DEIS can assist readers in their review and comprehension of a project and its development. Think about layout and the incorporation of graphics from the start of DEIS document development. As information and analysis is pulled from technical reports, consider creative ways to visually present the information so that non-technical readers can understand. While documents are usually drafted initially in Microsoft Word for ease of editing and tracking changes and comments, desktop publishing software like Adobe InDesign can be used by graphics professionals for the final document. Those programs are useful in creating an eye-pleasing document with many easy design layout options.

- ***Easy-to-read text.*** Consider the choice and size of font that can assist readers in more easily reading a document. Some fonts lend them self to being easier on the eyes than other fonts.

- ***Text and graphics belong together.*** Do not separate pictures and figures from text by inserting them always on the next page or at the very end of a section or the document. It is more effective to have a graphic on the same page as the text referencing and/or discussing it. It disrupts a reader's review if he or she needs to go searching for something on another page and need to flip back and forth.

- ***Think through the use of tables.*** While tables can be a useful tool to display information, be thoughtful in how they are incorporated into a DEIS. Sometimes a table is not the best way to compare particular data or to assist the reader in following how a conclusion was drawn. Define the true point of including a particular table and evaluate whether it achieves the goal or misses the mark. A modification in format, such as a table versus a bar chart or a pie chart or an enhanced map can provide a reader with more focused attention on specific information or a focused comparison.

- ***Include graphs, charts, maps, photos, and illustrations with useful information.*** As noted above with tables, define the true point of a graphic and evaluate whether it achieves its goal. Maps should have well-defined legends to assist the reader in interpreting various features and designations.

- ***Choose colors for graphics wisely.*** Use colors consistently throughout the document. Avoid too many bold colors and the color red unless a particular point is trying to be made. Keep in mind that a certain percent of the population is color-blind and may have difficulty distinguishing between some shades on a graphic.

Be concise and summarize key findings. Remember that a DEIS is prepared when it is known that the project will result in significant impacts. All resources should be discussed in the DEIS in proportion to the importance of the associated impacts. The DEIS should be brief but it also needs to include the important technical information for both agency and legal review. NEPA regulations support the development of concise documents that summarize key findings of technical reports or other technical studies but they must be ***incorporated into the DEIS by reference***. For the benefit of readers, the referenced technical reports can be included on a CD or via a website for easy access. Technical reports are only prepared for a project as needed or appropriate.

Utilize a document editor. Often a DEIS is developed by multiple members of the project team from multiple disciplines (engineering and environmental). When more than one author contributes to the drafting of a DEIS, a technical document editor can play an important role in achieving a common voice and writing style throughout the document. This person should have experience in the preparation of NEPA documents and what they need to contain in order to be concise, well-edited yet legally sufficient. To accomplish this, the role of the editor is to lead the discussions in determining the document format and framework, coordinate with technical engineering and environmental staff and graphic designers, and edit the document to achieve a single voice. Quality assurance/quality control by the editor is also essential from editorial quality, technical validity, legal sufficiency, and overall effectiveness perspectives.

Meet All Legal Requirements. While developing a concise document, ensure that the DEIS meets all legal and regulatory requirements. The discussion and substance of the analysis must be valid and understandable. There must be evidence that the decision is not arbitrary and capricious. There must be a full and fair discussion of the decision making process. Supportive technical reports and information is incorporated by reference.

Material incorporated into the DEIS by reference needs to be reasonably available for inspection by potentially interested persons within the time allowed for comment. All Technical Support Data must be made available to the public and the resource agencies upon request when the DEIS is available for public comment. (See Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix F.)

NOTE: Keep in mind that conclusive statements should not be made without inclusion of, or summary and proper reference to, data/information that supports that conclusion. This is necessary to ensure that the document is legally sufficient.

NOTE: For more information on quality EIS documents, refer to AASHTO's *Improving the Quality of Environmental Documents* (May 2006), A Report of the Joint AASHTO/American Council of Engineering Companies (ACEC) Committee in cooperation with FHWA. Additionally, AASHTO's *Practitioner's Handbook 15: Preparing High-Quality NEPA Documents for Transportation Projects* (2014), is a source for guidance.

EXAMPLES: Refer to AASHTO/FHWA's *Examples of Effective Techniques for Improving the Quality of Environmental Documents* (2014) for actual project documentation examples from other states.

2. Format and Organization. This section discusses the recommended outline for a DEIS. This outline forms the structure in which to tell a project's story. The project team should discuss and agree to a project's DEIS outline prior to the start of its preparation to ensure that the approach is appropriate for that particular project. There can be flexibility on a project-to-project basis (such as a question-and-answer format), but **the Department and FHWA must agree on any variations from the recommended outline below.**

Although there is some flexibility in the format of an EIS, all EISs should contain the following three main components: Document Summary, Main Body, and Appendices. An EIS should be concise and rely on the appendices and Technical Support Data whenever possible. Technical details should be incorporated by reference. The level of detail for impacts should be commensurate with the significance of its potential impact and influence in the overall decision-making.

Recommended EIS Outline		
DOCUMENT SUMMARY	**Cover Sheet**	The EIS cover should include the following information at a minimum: • Project name • State route (SR) number and section • Originating Office (District Office) • PennDOT and FHWA names/logos • Signature and date of FHWA approval to circulate the document
	Summary	The Summary provides a concise synopsis of the EIS and should be limited in length. It should include the following items: • Description of the proposed action • Other actions and proposals in the area • Reasonable alternatives • Major environmental impacts • Areas of controversy • Unresolved issues (if any) • Other required federal or state actions (permits, Section 106 agreements, etc.)
	Table of Contents	A table of contents assists readers by providing the EIS outline and associated page numbers for easy reference.
MAIN BODY	**Introduction and Purpose and Need**	This section is the foundation of the NEPA process, and the EIS and should clearly demonstrate a "need" exists in terms understood by the general public. Describe the problems present in the study area and the intended objectives to be achieved by the proposed project. • Define the study area. • Provide a map that shows all of the study area. The map should be broad enough to provide a project location in relation to other recognized locations. The study area boundary, a scale, and a directional indicator must be included on this map. • Explain the history and background of the project. • ***Project purpose:*** State the overall goals to be achieved by a proposed transportation improvement. The project purpose statement is typically no more than a few sentences. • ***Project need:*** Include statements that relay the specific transportation problems and/or deficiencies which have resulted in the search for improvements. Consideration should also be given to community goals in developing the project need. The project need should be based on technical information and should be phrased as *problem statements*. Each problem statement should be followed by a few sentences or a paragraph explaining how it is known that this problem exists. Technical data and reports should be referenced as appropriate and be included in the Technical Support Data. More information on purpose and need can be found in Publication 319, *Needs Study Handbook*.

Recommended EIS Outline		
	Alternatives Considered	In this section, *all* possible solutions (alternatives) considered during the development of the proposed project are identified and briefly described. • This description should include information such as project endpoints, project length, existing/proposed number of lanes, width of proposed lanes/shoulders, and any other special features that define the proposed improvement. • A map with discussed alternatives should also be included. • All alternatives that were considered in the pre-TIP process phases should also be discussed, even if they were eliminated from further consideration through alternatives screening. • The No-Build Alternative must always be considered. Differentiate between preliminary alternatives analysis and detailed alternatives analysis. Explain the alternatives screening criteria used for the project. Discuss the rationale of how alternatives were eliminated from further consideration or carried forward through the process. Incorporate by reference any prepared alternatives analysis technical report(s).
	Environmental Resources, Impacts, and Mitigation	This section presents a discussion of impacts for each of the reasonable alternatives, those alternatives that are advanced through the alternatives screening process and meet the project purpose and need. Present information in a neutral and objective manner. Weigh the amount of discussion towards environmental impacts of most relevance to the decision making process. Resource-by-resource, include the following: ***Methodology:*** provide a brief statement identifying the methodology(ies) used to identify and evaluate the resource within the study area. All methods of data collection should be summarized to document the sources from which the information was obtained. Detailed references should also be included in references listing as an appendix. ***Existing conditions:*** The existing conditions for a resource should be presented as a brief narrative describing the individual social, economic, natural, or cultural feature that is being affected. This information should be as recent as possible and should be verified if data sources have not been updated.

Recommended EIS Outline		
		Impacts: Include a listing or narrative description of the anticipated impacts to the resource associated with each alternative under study. It is important that this narrative describes both the quantity and the quality of the impact. For instance, it is not sufficient to provide only an area (hectare/acre, square meter/square feet, etc.) amount of impact. The impact narrative should also identify the function and quality of the impacted resource. Include a discussion of indirect impacts, if applicable. Highlight important differences among the alternatives' impacts to resources. ***Environmental features/constraint mapping:*** A graphic of the resources (when possible) and potential impacts should be inserted within the chapter or included in the appendix. For some projects, it may be preferable to include one environmental features graphic which depicts all of the environmental resources for the entire study area. In other cases, a series of maps showing environmental features may be necessary to present a clear picture. ***Minimization/Mitigation:*** Summarize the proposed mitigation efforts which are recommended to minimize and/or mitigate the impacts resulting from the project. If mitigation strategies are different for the individual alternatives, each alternative's mitigation strategies should be presented. Detailed technical data should be summarized in the EIS with appropriate references to the technical documents provided.
	Public Comment and Agency Coordination	This section documents the coordination undertaken with agencies and the public throughout the course of the project development process. Include early coordination, including scoping. Note meetings held with various stakeholders - groups, individuals and agencies. Include key issues and pertinent information received from the public and agencies.
	Section 4(f) (if applicable)	An Individual Section 4(f) Evaluation can be included as a separate section of the document after the appendices or as its own chapter of the EIS. Pertinent information from sections of the EIS may be summarized in the Section 4(f) Evaluation to reduce repetition.
	Comparison and Selection of the [Recommended]* Preferred Alternative ***** "Recommended" should be in the title for the DEIS, if one is identified in the DEIS	This section of the EIS should compare the alternatives and identify a Recommended Preferred Alternative (DEIS) or Preferred Alternative (FEIS). The DEIS does not have to identify a Recommended Preferred Alternative. This summary should document the consideration of the project need, the study objectives, and the major differences among the impacts of the alternatives. Additional considerations which may be included in this summary include: safety issues, local opinions, resource agency input, policies and master plans, and the cost/benefit consideration both in relation to mobility and adverse effects to the environment.

Recommended EIS Outline		
		(Although an alternative may be identified as the Recommended Preferred Alternative in a DEIS, final selection of an alternative for an EIS project is not official until the ROD has been issued by FHWA.) Throughout project development, efforts were made to avoid and minimize the impacts of the alternative(s) on sensitive resources. List the impacts of the Preferred Alternative and the mitigation efforts which are recommended to make the alternative a more environmentally sensitive course of action. Both mitigation commitments and appropriate conceptual mitigation plans should be described. A summary of any monitoring efforts for each affected resource that are reasonably identifiable during and after construction should also be included.
APPENDICES	Environmental Features/Constraint Mapping	Include mapping to show readers the specific locations of resources in the study area potentially being impacted by the project.
	Agency Correspondence	Correspondence with the resource agencies relevant to jurisdictional issues and approvals for the project.
	Technical Support Data Index	Include the Technical Support Data Index specifically compiled for the project. (Additional information on the organization of Technical Support Data can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix F.)
	EIS Distribution List	Include a list of all parties and agencies who received a copy of the document. (See the CE Expert System Help for a list for EIS distribution.)
	List of Preparers	Names, qualifications, and project responsibilities for individuals who were primarily responsible for preparation and review of the EIS.
	References	List all materials referenced throughout the text of the EIS document. Reference information should note the author, title, origin of publication and date(s) of publication. Choose a method for citing these references throughout the EIS and use that method consistently.
	Comment/Response Document (FEIS only)	Include all comments received during the DEIS circulation period, including public hearing testimony. Comments received after the close of the comment period can also be included, noting that they were received later. A response should be provided to each comment. There are different methods of organizing responses in regards to coding by topic and/or date received.
	The Originating Office and FHWA should discuss if there are specific other items that should be added to a project EIS as an appendix item versus incorporated by reference and kept in the technical support data.	
Vol 2	Volume II of the EIS can include the **Plates** (plan sheets) for the project.	

D. Review the Pre-DEIS. Conduct an internal interdisciplinary review of the working Pre-DEIS and its accompanying technical reports to ensure consistency with Department policies, procedures, and standards. Do not forward the Pre-DEIS if the review identifies serious technical and editorial problems.

The Environmental Manager and Project Engineer should coordinate a team of experts from, at a minimum, the following areas of the Originating Office:

- Bridge
- Community Relations
- Design
- Location/Liaison
- Planning/programming
- Right-of-Way
- Soils
- Traffic and Safety
- Utility Relocations

Document the results of the Pre-DEIS internal review by:

- Preparing written review comments,
- Drafting a statement that the document is not ready to be reviewed by BOPD, or
- Approving the document.

The Project Manager will direct the Project Team to revise the document as necessary, will back-check any changes made by the consultants, and ensure that the working Pre-DEIS is ready for submission to Central Office.

E. Submit Pre-DEIS to BOPD for an Interdisciplinary Team Review (Central Office, Cooperating Agencies). When any technical and editorial problems identified during internal review have been corrected, submit copies of the Pre-DEIS to BOPD. The accompanying cover letter should include the comments that the Originating Office made in their review of the Pre-DEIS.

The BOPD HDTS Engineer shall coordinate an interdisciplinary review team representing the following entities:

PennDOT Central Office

- BOPD
  - Bridge Design and Technology Division (BDTD)
  - HDTS
  - EPDS
  - Utility and Right-of-Way Section
- Bureau of Public Transportation
- Office of Chief Counsel
- Center for Program Development and Management
- Bureau of Equal Opportunity
- Bureau of Highway Safety and Traffic Engineering

Cooperating Agencies

- USCOE
- EPA
- Others as appropriate

BOPD will forward one copy of the Pre-DEIS (with cover letter and routing slip) to each reviewing office. In addition, six copies of the document should be sent under cover letter to FHWA so that they may perform their own interdisciplinary review. Along with this submission, the HDTS Engineer should request that the FHWA assign an EIS number to the document. This number will be printed on the title page of the finalized DEIS.

The entities listed above shall respond within 30 calendar days of receiving the Pre-DEIS. Depending on the quality of the document and the nature of the project, BOPD may agree to reduce overall review time by conducting concurrent reviews of the Pre-DEIS. It may be advisable to conduct separate reviews for projects that have the potential to generate controversy among agencies or the public.

After all reviewers submit their comments, BOPD shall hold an interdisciplinary team meeting to discuss revisions with the Project Team. FHWA should be invited to attend this session. Guided by the interdisciplinary team's recommendations, the Originating Office and its consultants will revise the Pre-DEIS. When they have responded to all the review comments, the Originating Office will forward two copies of the official DEIS to BOPD for back check, who will then submit the copies to the FHWA Division office for approval. The submission of the DEIS will include a request to circulate the DEIS for public comment.

NOTE: A Pre-DEIS can be forwarded to FHWA Legal after the interdisciplinary team review for an unofficial legal sufficiency review. Under the Every Day Counts FHWA Initiative, this will shorten the final legal sufficiency review and is generally preferred. This review will be completed within 30 calendar days. The advantage to this is to identify and address any legal issues as early as possible at the Pre-DEIS stage.

F. BOPD Obtains FHWA Approval to Circulate the DEIS. The FHWA Division Office designates approval of the DEIS by signing the cover sheet. FHWA will then notify BOPD with approval to circulate the DEIS. Central Office will then tell the Originating Office to print the document and burn CDs to circulate the DEIS. Soon after the notice to circulate, FHWA will electronically submit the DEIS to the EPA in Washington, D.C. CEQ's NEPA regulations require that "Statements shall be filed with EPA no earlier than they are also transmitted to commenting agencies and made available to the public." (40 CFR §1506.9). In order to ensure compliance with this requirement, the electronic filing system has a step that requires that all agencies certify that this distribution has occurred when filing an EIS to EPA. The intent of this provision of the regulation is to ensure that commenting agencies and the public have a copy of the EIS when the comment period begins.

G. Submit Section 404 Permit Application to the USCOE (if applicable). This step must be completed if project scoping efforts determined that:

- The USCOE would participate as a cooperating agency in the project and
- Review of the DEIS and the Section 404 application would take place concurrently using the integrated NEPA/404 process

Section 404 of the federal Clean Water Act of 1977, as amended, requires a permit for the discharge of dredged or fill material into certain aquatic systems. The USCOE and the EPA jointly administer the Section 404 permit program. The USCOE has the sole authority to issue or deny these permits, while the EPA assists in the development of the program's environmental standards and is responsible for enforcement along with the USCOE. In addition, the EPA can veto the USCOE's decision to issue a Section 404 permit. A system has been established whereby the NEPA environmental clearance and the Section 404 permit application review processes proceed concurrently.

The USCOE is asked to serve as a cooperating agency for all projects that can be expected to affect wetlands, rivers, streams, or other surface waters. In its role as cooperating agency, the USCOE considers the DEIS as back-up documentation for the Section 404 permit application as part of the integrated NEPA/404 process, if this process is being followed. Therefore, once the DEIS has been approved for circulation, the Originating Office must submit an individual Section 404 application concurrently during the 45-day NEPA comment period.

H. Print Copies and FTP/Burn CDs of the DEIS. The DEIS must contain a cover sheet signed by FHWA (or a facsimile that states the name of the original signer and the date of signing). Upon receipt of the signed cover sheet from Central Office, the Originating Office will prepare:

- Four hard copies and an electronic copy for BOPD
- Typically two hard copies and an electronic copy for the FHWA Division Office

NOTE: The Originating Office should coordinate with FHWA first before printing copies to verify the DEIS format (hard copy versus CD/FTP) and number of copies.

In addition, the Originating Office should print enough hard copies to meet the expected requirements of agencies and the public. The DEIS can also be burned to CDs and/or be uploaded to an FTP site to be distributed in an electronic format. Although the electronic format is more cost-effective to produce than printing hard copies of the document, CDs/FTP link cannot be the lone format for DEIS circulation. CDs and/or the FTP website link can be provided to those who prefer to review the document electronically.

A fee will be charged to parties who request their own copies, except federal agencies and Pennsylvania state resource agencies with any potential interest in the project. The fee may not exceed the cost of reproduction; do not include labor, profit, or overhead in calculating the fee.

I. Establish Comment Period and Circulate DEIS. Distribute the final version of the DEIS with a cover letter signed by the District Engineer or higher designated representative. In consultation with the Environmental Manager, the Project Engineer will prepare the cover letter and circulate the copies to:

- Municipal buildings and libraries in the area
- Public officials, interest groups, and members of the general public who may be directly affected by or express an interest in the proposed action (a fee may be charged to the public to offset printing costs)
- Metropolitan Planning Organization (MPO)/Rural Planning Organization (RPO) serving the project area
- Resource agencies, including EPA Regional Office
- Participating agencies
- Other government agencies with jurisdiction, interest or expertise in the proposed action
- PennDOT Central Office
- FHWA Division Office

The Project Manager will compile and maintain the distribution list. Allow sufficient time for mailing so that reviewers receive the DEIS before the 45-day comment period begins.

FHWA will electronically submit the DEIS to the EPA in Washington, D.C. through the EPA's online filing system. The EPA will publish an availability notice in the *Federal Register* no more than 13 days after the FHWA uploads the DEIS to the EPA website. This notice will not appear until the Friday after EPA Washington verifies that the EPA Regional Office has received the DEIS. FHWA will inform BOPD of the publication date.

In keeping with federal stipulations, the cover letter accompanying the DEIS shall announce a 45-day comment period, beginning on the day the notice appears in the *Federal Register* and allowing at least 15 days between the release of the DEIS and the public hearing. The cover letter will also request that agencies forward their DEIS comments to the Originating Office by the end of the comment period. (The review period can be extended beyond 45 days in special cases but should not exceed 60 days.)

Copies of the DEIS must be available for local review on the first day of the comment period.

NOTE: Fill in the milestone date for the project's DEIS circulation in the EIS Package Document in the CE Expert System.

J. Public Hearing. A public hearing for the project is held during the DEIS comment period. The hearing should be held at least 15 days after the DEIS circulation date.

NOTE: PennDOT's Public Involvement/Public Hearing Procedures can be found in Publication 295, *Project Level Public Involvement Handbook.*

1. Publish Public Hearing Notice. The Originating Office must place a public hearing block ad in local newspapers no less than 30 days in advance of the hearing (Notice #1). The DEIS should be circulated before the ad is placed. Publish a similar notice (Notice #2) 5-15 days in advance of the public hearing. These notices should announce that the DEIS is available for review, request public comments, and indicate:

- Where interested parties can find the DEIS
- Who they should contact for further information
- How they may obtain copies
- Where they should send their comments
- The date and purpose of the upcoming public hearing
- Who to contact to make arrangements for persons with disabilities requiring assistance

If a Section 404 permit application has been filed, the Originating Office and the USCOE will prepare a public notice announcing that:

- The Section 404 review process is underway
- The DEIS is available for review and comment
- The Department and the USCOE will sponsor a joint public hearing at which interested parties may comment on both DEIS and Section 404 issues

Unlike other public notices, which are published in local newspapers, the joint NEPA/404 notice is sent to the EPA, other cooperating, participating, and commenting agencies, property owners adjacent to the proposed right-of-way, and others on the Interested Parties List.

NOTE: This is a good time to prepare a newsletter and/or update the project website to report on the following progress of the project:

- Remind residents that the DEIS is available for review
- Describe the alternatives evaluated in detail in the DEIS
- Announce that a public hearing will be held to give concerned citizens an opportunity to express their opinions for the official record

2. Conduct Public Hearing. The Department holds a public hearing to formally gather public and agency testimony before a specific alternative is selected for implementation. If agreed upon during project scoping, the Department and the USCOE may conduct a joint public hearing to satisfy both NEPA and Section 404 requirements.

PennDOT's Public Involvement/Public Hearing Procedures can be found in Publication 295, *Project Level Public Involvement Handbook.*

In accordance with the Americans with Disabilities Act of 1990, assistance must be provided to people with speech and hearing disabilities who wish to testify, and meeting facilities must be made accessible to the physically disabled.

Public hearings provide the public with opportunities to comment on the DEIS. These comments are addressed in the FEIS. In the traditional format, a plans display precedes formal proceedings, so that the public has a final opportunity to review the alternatives under consideration.

The District Executive or one of his/her staff should open the hearing with an overview of information presented in the DEIS, in particular:

- The project's purpose, need, and consistency with local planning goals and objectives
- Alternatives studied in the DEIS and their major design features
- The preferred alternative, if one has been designated in the DEIS
- Impacts on socioeconomic, natural, and cultural resources in the study area

This introduction must include an explanation of the Department's relocation assistance program and the right-of-way acquisition process.

Additionally, Pennsylvania Act 120, Section 2002 requires a presentation of the specific effects of transportation improvements on:

- Residential and neighborhood character and location
- Conservation, including air, erosion, sedimentation, wildlife, and general ecology of the area
- Noise, air, and water pollution
- Multiple uses of space
- Displacement of families and businesses
- Replacement housing
- Recreation and parks
- Aesthetics
- Public health and safety
- Fast, safe, and efficient transportation
- Civil defense
- Economic activity
- Employment
- Fire protection
- Public utilities
- Religious institutions
- Conduct and financing of government, including the effect on the local tax base and social service costs
- Natural and historical landmarks
- Property values
- Education, including the disruption of school district operations
- Engineering, right-of-way, and construction costs of the project and related facilities

- Operation and use of transportation routes and facilities

When a joint NEPA/404 Public Hearing is held, a representative from the USCOE will make a brief statement regarding Section 404 issues following the District Executive's presentation on the DEIS and Act 120, Section 2002 impacts.

Before opening the floor to the audience, the presenter will also describe the procedures that will be used during the hearing for submitting oral statements. It should be explained that written statements may also be provided as testimony at the public hearing.

Hearing participants may submit oral comments, which are recorded by a stenographer. Members of the public who wish to speak must sign in as they enter the hearing facility. Comments are usually limited to five minutes per person, and public officials have the opportunity to speak first. A separate room can be provided to enable individuals to make comments in private. These comments are also transcribed for the public record.

The public hearing is not an opportunity for dialogue regarding the concerns of residents, public officials, or agency representatives. A question and answer session will not be held as part of the comment period. Individuals may offer straightforward statements of their concerns or opinions for the public record; all of these comments will be addressed in the FEIS. Members of the audience also may not question those who are offering comments. Based on review of the verbatim transcript prepared by the stenographer, answers are provided in the FEIS.

At the conclusion of the testimony, the presenter should mention that the Department will accept additional written statements from the public until the closing date of the DEIS comment period. Any correspondence will receive the same consideration as comments offered at the public hearing and will be addressed in the FEIS.

K. Analysis and Coordination of DEIS Comments. After the comment period for the DEIS has concluded, all written comments on the DEIS and testimony from the public hearing will be evaluated. These comments and testimony will become part of the official record for the project. All substantive issues raised are to be addressed in the FEIS. After addressing all significant concerns about the project, PennDOT will recommend a preferred alternative to the FHWA for approval.

1. Compile Agency and Public Comments. Comments received during the DEIS comment period will be compiled, numbered, and indexed. These will include all written and oral testimony from the public hearing as well as all other written correspondence received from agencies and the public commenting on the DEIS. The originals of all documentation should be collected into a project file. The Originating Office will keep copies of the public hearing transcript and attachments in the Technical Support Data file.

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NOTE: Section 309 of the Federal Clean Air Act Amendments (CAAA) of 1970 authorizes the EPA to review proposed actions of other federal agencies in accordance with NEPA and make those reviews public. The EPA has established policy and procedures for rating EISs and conducting follow-up action. Their review rating is published in the Federal Register. The EPA generally rates both the environmental impact of the action and the adequacy of the DEIS.

Rating environmental impacts (rating may be applied to the "worst" alternative if a recommended preferred alternative is not identified in the DEIS):

LO - lack of objections
EC - environmental concerns
EO - environmental objections
EU - environmental unsatisfactory

Rating adequacy of the EIS:

1 - adequate
2 - insufficient information
3 - inadequate

If there is not sufficient revisions to the DEIS and the FEIS remains environmentally unsatisfactory, the EPA may refer the matter to the CEQ for mediation, potentially adding significant time to the decision-making process.

2. Analyze Comments and Prepare Draft Responses. The Originating Office should organize a group of Project Team members, comprised of staff from the Originating Office and the consultant, which will have the responsibility of reviewing and preparing draft responses to all comments received.
This group will:

- Hold a meeting(s) to analyze the comment letters and the Hearing transcripts
- Identify the substantive comments and issues
- Develop the written responses and proposed actions to resolve issues

All comments received through correspondence must be analyzed. For each correspondent, substantive comments should be numbered and a similarly numbered response should be prepared. A direct, concise response is appropriate. This answer can refer back to an appropriate section of the DEIS, but not to any technical documentation or other documents that have not been made available to the public. The Public Hearing transcript also must be evaluated in this manner.

3. Hold Comment/Response Review Meeting with Central Office, FHWA, and Cooperating Agencies. The Originating Office should request that BOPD set up a meeting to review comments received on the DEIS and to discuss preparation of the FEIS. BOPD shall include EPDS and invite FHWA and the cooperating agencies to participate. In preparation for the meeting, forward copies of the public hearing transcript, comments and correspondence received, as well as the draft responses to participants in advance.

The following topics should be addressed at the meeting:

- Verification of the preferred alternative
- Format and content for the FEIS
- The need for additional engineering and/or environmental studies
- The need for further public and/or agency involvement
- Commitments to minimize or avoid the environmental effects of the recommended preferred alternative

- NEPA/404 issues that need to be addressed

- The need for an ACM presentation and any other follow-up actions required of the Project Team

4. Document All Comments and Coordination Received. Finalize all responses to DEIS comments and include them in the FEIS in the Comments and Responses section, as well as the Technical Support Data files. Ensure that no issues remain outstanding and that responses and commitments are consistent with state and federal policies and procedures.

5. BOPD Submits Public Hearing Transcript, Comments, and Draft Responses to FHWA and Cooperating Agencies. BOPD will submit copies of the Public Hearing transcript, comments received on the DEIS, and responses to those comments to FHWA and the cooperating agencies. This submission is intended to serve as basic support data for the selection of an alternative and for the writing of the FEIS. Send a copy of this same information to USCOE to satisfy the integrated NEPA/404 process.

NOTE: This is a good time to prepare a newsletter and/or update the project website to report on the following progress of the project:

- Preliminarily announce the preferred alternative
- Highlight issues raised at the Public Hearing
- Mention upcoming project activities

Briefly describe the alternative selection process. If applicable, describe how this alternative was modified to minimize impacts on the environment, cultural resources, and so on. It is important to note that the preferred alternative will not be finalized until the Department has thoroughly reviewed all project data and considered all agency and public comments.

5.5 PREFERRED ALTERNATIVE

After reviewing all project data, including the results of the comments/response review meeting, the Project Team will choose the preferred alternative in consultation with Central Office and FHWA. When identifying a preferred alternative, consider:

- Project needs, measures of effectiveness, study objectives, and the major differences between the alternatives

- The probable consequences of the alternatives

The decision should be made on behalf of the public point-of-view within the following parameters:

- Because no set procedures or established guidelines exist, the selection of an alternative is not a process of applying a formula

- Consider relevant engineering, economic, environmental, and social factors

- Consider local opinions, policies, and master plans for development

- Strive to benefit the majority of people at the lowest possible cost, while causing the fewest possible adverse effects to the environment

- Draw upon the best judgment of Project Team professionals

It is essential that cooperating agencies (especially the USCOE as Section 404 permitting authority) approve the preferred alternative. Discussions with the PA DEP are also important because Chapter 105 also has an alternatives analysis, and 401 WQC is needed to obtain a Section 404 permit.

The lead agencies will decide whether to develop the preferred alternative, after it has been officially identified, to a higher level of detail than the other alternatives. The lead agencies must determine whether or not developing the preferred alternative to a higher level of detail would: (1) prevent the lead agencies from making an impartial decision on the appropriate course of action; and (2) is necessary to facilitate the development of mitigation measures or concurrent compliance with other environmental laws. The lead agencies must agree that a particular alternative is the preferred alternative and that the relevant conditions stated herein are met, before developing that alternative in greater detail. If the lead agencies do not agree, work on developing an alternative in greater detail cannot proceed at that time.

5.6 FEIS PREPARATION AND CIRCULATION

The Final Environmental Impact Statement (FEIS) presents the same information as the DEIS, but names a preferred alternative based in part on public and agency input. Revisions to the FEIS reflect all the comments received during the DEIS review period. In addition, the FEIS includes:

- The preferred alternative and basis for preference
- Alternatives not preferred and reason(s) why
- Mitigation and enhancement measures
- List of any unresolved issues
- Summary of coordination, comments, and responses
- Final Section 4(f) Evaluation (if applicable) and other findings (wetland, floodplain, etc.)

Along with the FEIS, the Originating Office or consultant should revise any technical documentation as required and begin to prepare a Mitigation Report.

NOTE: As the FEIS is being prepared, the Environmental Commitments and Mitigation Tracking System (ECMTS) Report's Mitigation Tracking System Matrix should be completed in tandem. After the draft report is completed, the District Project Manager and Environmental Unit should submit the ECMTS Report for review to HDTS for larger projects requiring Central Office approvals and to FHWA for those projects requiring federal oversight. For more information regarding ECMTS, see Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix T.

A. Determine Appropriate FEIS Format. The Project Manager should select one of the following suitable formats for the FEIS in consultation with EPDS, HDTS, and FHWA:

- Traditional FEIS Format
- Condensed FEIS Format
- Abbreviated FEIS Format

1. Traditional FEIS Format. With the Traditional Format, the FEIS incorporates the DEIS (essentially in its entirety) with changes made as appropriate throughout the document to reflect the selection of an alternative, modifications to the project, updated information on the affected environment, changes in the assessment of impacts, the selection of mitigation measures, wetland and floodplain findings, the results of coordination, comments received on the DEIS and responses to these comments, etc. Because so much information is carried over from the DEIS to the FEIS, important changes are sometimes difficult for the reader to identify. An erratum of document changes can aid the review of a reader.

2. Condensed FEIS Format. The Condensed Format avoids repetition of material from the DEIS by incorporating, by reference, the DEIS. The FEIS is, thus, a much shorter document than under the traditional approach; however, it should afford the reader a complete overview of the project and its impacts on the human environment.

The basis of this approach is to briefly reference and summarize information from the DEIS which has not changed and to focus the FEIS discussion on changes in the project, its setting, impacts, technical analysis, and mitigation that have occurred since the DEIS was circulated. In addition, the condensed FEIS must identify the preferred alternative, explain the basis for the preference, describe coordination efforts, and include agency and

public comments, responses to these comments, and any required findings or determinations (40 CFR §1502.14(e) and 23 CFR §771.125(a)). The format of the FEIS should parallel the DEIS. Each major section of the FEIS should briefly summarize the important information contained in the corresponding section of the draft, reference the section of the draft that provides more detailed information, and discuss any noteworthy changes that have occurred since the draft was circulated.

If, due to the passage of time or other reasons, it is likely that they will have disposed of their original copy of the DEIS, then a copy of the DEIS should be provided with the final. In any case, sufficient copies of the DEIS should be on hand to satisfy requests for additional copies. Both the DEIS and the condensed FEIS should be filed with EPA under a single FEIS cover sheet.

3. Abbreviated FEIS Format. The CEQ regulation (40 CFR §1503.4(c)) provides the opportunity to expedite the FEIS preparation where the only changes needed in the document are minor and consist of factual corrections and/or an explanation of why the comments received on the DEIS do not warrant further response. In using this approach, care should be exercised to assure that the DEIS contains sufficient information to make the findings below and that the number of errata sheets used to make required changes is small and that these errata sheets together with the DEIS constitute a readable, understandable, full disclosure document. The FEIS should consist of the DEIS and an attachment containing the following:

- Errata sheets making any necessary corrections to the draft EIS
- A section identifying the preferred alternative and a discussion of the reasons it was identified as preferred. The following should also be included in this section where applicable:
    - Final Section 4(f) evaluations
    - Wetland finding(s)
    - Floodplain finding(s)
    - Commitments for mitigation measures for the preferred alternative
- Copies (or summaries) of comments received from circulation of the DEIS and public hearing and their responses

Only the attachment needs to be provided to parties who received a copy of the DEIS, unless it is likely that they will have disposed of their original copy, in which case both the DEIS and the attachment should be provided (40 CFR §1503.4(c)). Both the DEIS and the attachment must be filed with EPA under a single FEIS cover sheet (40 CFR §1503.4(c)).

4. Concurrent Issuance of the FEIS and the Record of Decision (ROD). Section 1319(b) of MAP-21 directs the lead agency, to the maximum extent practicable, to combine the FEIS and ROD into a single document unless:

1) The FEIS makes substantial changes to the proposed action that are relevant to environmental or safety concerns; or

2) There are significant new circumstances or information relevant to environmental concerns and that bear on the proposed action or the impacts of the proposed action.

Whether combining the FEIS and ROD is practicable is a determination made on a project-by-project basis dependent on circumstances. FHWA will consider whether a combined FEIS/ROD process is appropriate through consideration of the following:

- Are there any coordination activities that are more effectively completed after the FEIS is available?
- Are there any unresolved interagency disagreements over issues that need identification in the FEIS?
- Is there a substantial degree of controversy where allowing for an opportunity for review of DEIS comments and responses is appropriate?

- Does the DEIS identify the recommended preferred alternative?

- Are there compliance issues with substantive requirements that must be resolved before issuance of the ROD or that FHWA wants to resolved prior to the ROD that do not merit deference of the FEIS?

If this option is being considered, agencies should be notified as early as possible and weigh in if there are any anticipated issues with combining the FEIS and ROD. For more detail on what should be contained in the ROD, see Section 5.8 below.

Legal sufficiency is required on the combined FEIS/ROD document.

B. Prepare Pre-FEIS. The Pre-FEIS (essentially the draft FEIS) must pass through an interdisciplinary review, and revisions or modifications must be made before it can be deemed the FEIS.

1. Submit Pre-FEIS to BOPD for an Interdisciplinary Review. When the technical and editorial problems identified during internal review have been corrected, submit 12 hard copies of the Pre-FEIS and the Draft Mitigation Report to BOPD or submit electronically. The accompanying cover letters should include the comments that the Originating Office made in its review of the Pre-FEIS; also, clearly identify the preferred alternative.

The HDTS Engineer will arrange for the interdisciplinary review team, which will include the Central Office entities and cooperating agencies that participated in review of the DEIS.

Once BOPD receives the document, it will notify EPDS, which will notify the cooperating agencies. BOPD, along with the Office of Chief Counsel and EPDS, will coordinate the interdisciplinary review. The Central Office entities and cooperating agencies that reviewed the DEIS will participate in this session. BOPD may also request a concurrent review of the document with FHWA. The purpose of the review will be:

- To determine that all comments and issues raised during the DEIS have been satisfactorily resolved

- To assure that the information presented in the FEIS is technically accurate

- To confirm that the preferred alternative and mitigation commitments are acceptable to PennDOT and FHWA

Expeditious review and revision of the document is the primary objective at this point. Therefore, the interdisciplinary review will normally be arranged and conducted within ten days after BOPD receives the document.

2. BOPD Forwards Pre-FEIS to FHWA. After Central Office reviews and approves the Pre-FEIS, BOPD will typically send three hard copies and an electronic copy to the FHWA Division office. Verify these numbers with FHWA. The cover letter will summarize the interdisciplinary review. FHWA will evaluate the Pre-FEIS using the same criteria considered above (including legal sufficiency). Once the FHWA Division Office approves the document, they will notify BOPD to prepare review copies for FHWA.

Because certain NEPA actions could rise to the level of national policy or significant controversy, certain projects may warrant **prior concurrence** from FHWA Headquarters (23 CFR §771.125(c)). Projects receive prior concurrence review at the discretion of the FHWA Division office. Prior concurrence is a finding by the Planning, Environment & Real Estate Services Core Business Unit that the project and document in question are acceptable from a policy/program perspective.

A **legal sufficiency review** is completed for all FEISs and Final Section 4(f) Evaluations by FHWA legal services to ensure that all legal requirements have been met and that the FEIS and Section 4(f) Evaluation are legally defensible. Unofficial legal sufficiency reviews are done for DEISs. Under the Every Day Counts FHWA Initiative, this will shorten the final legal sufficiency review and is generally preferred.

3. FHWA Approval to Distribute FEIS. When the FHWA Division Office approves the Pre-FEIS, the FHWA Division Office will notify BOPD of its approval to distribute the FEIS. FHWA will also send a signed cover sheet which has been coded with an assigned FEIS number. BOPD will then notify the Originating Office that the FEIS may be printed and distributed.

4. Print Copies and FTP/Burn CDs of FEIS. The Originating Office handles the printing and distribution of the approved FEIS. Because no standard policies govern printing, the Originating Office has the freedom to choose the appropriate paper finish and binding, as well as to decide whether photos and figures should be printed in color. Use recycled paper for printing whenever it is practical to do so.

The Originating office should coordinate with BOPD on the number of hard copies of the approved FEIS that should be forwarded to BOPD for official review and processing.

Additionally, the FEIS can be burned to CDs and/or uploaded to an FTP site to be distributed in an electronic format. Although the electronic format is more cost-effective to produce than printing hard copies of the document, CDs/FTP site cannot be the lone format for FEIS circulation. CDs and/or the FTP link can be provided to those who prefer to review the document electronically.

To satisfy demand for the FEIS, print and burn (and/or FTP) enough copies for:

- Any persons, organization, or agencies that made substantive comments on the DEIS and/or requested a copy of the FEIS.
- The Originating Office.
- FHWA Division Office.
- Public institutions in the project area (local government offices, libraries, schools, etc.).

After the initial supply of the hard copy document is exhausted, those requesting additional copies should be offered the document electronically on CD/FTP and/or be directed to the nearest public institution that has a copy on file for public review.

5. Establish the Review Period and Publish Availability Notices. The FHWA Division Office will request that the EPA publish a notice in the *Federal Register* announcing the availability of the FEIS for review, and establishing a 30-day review period. (The review period can be extended beyond 30 days, but only in very special cases.) The FHWA will then inform BOPD of the publication date.

Copies of the FEIS must be available for local review on the first day of the review period, which begins on the day the *Federal Register* availability notice is published. Publish a public availability notice in local newspapers and inform BOPD of the date on which it will appear. Availability should also be mentioned at public presentations.

6. Distribute FEIS to Agencies and Make Available to the Public. The Originating Office shall forward the FEIS to any persons, organizations, or agencies that made substantive comments on the DEIS or parties who have specifically requested a copy of the FEIS. Distribute copies to local libraries (or other appropriate locations) to be filed with the public records and made available for public review.

Inform BOPD of the date when the document is forwarded to the commenting agencies. The cover letter accompanying the agencies' copies of the FEIS must remind reviewers that the 30 day review period begins on the day the *Federal Register* availability notice is published.

BOPD will coordinate with the FHWA Division Office on the number of hard copies they wish to receive. Copies will also go to the same PennDOT offices that had previously received the DEIS.

NOTE: Fill in the milestone date for the project's FEIS Circulation in the EIS Package Document in the CE Expert System.

7. Evaluate Any Comments Received on the FEIS. At the conclusion of the review period, the Originating Office will evaluate comments received on the FEIS. The Originating Office will then summarize all comments for FHWA, highlighting any significant issues that require follow-up action. A comment-response document should be produced to address substantive comments that will be attached to the ROD. It may be appropriate to meet with Central Office if issues involving policy, public involvement, design development, or mitigation considerations remain unresolved.

NOTE: This is a good time to prepare a newsletter and/or update the project website to report on the following progress of the project:

- Summarize the environmental findings presented in the FEIS
- Identify and explain the preferred alternative
- Report on issues raised at the public hearing or through comments on the DEIS and discuss how they were addressed in the FEIS
- Highlight any other significant revisions made between the DEIS and the FEIS
- Discuss tasks that remain to be completed before the Final Design Phase begins

5.7 PREPARE PROJECT MANAGEMENT PLAN (MAJOR PROJECTS ONLY)

"Major Projects", those projects receiving Federal financial assistance and have an estimated total cost of $500,000,000 or more, must prepare a Project Management Plan (PMP). A PMP shall document the following:

- The procedures and processes that are in effect to provide timely information to the project decision makers to effectively manage the scope, costs, schedules, and quality of, and the Federal requirements applicable to, the project
- The role of the agency leadership and management team in the delivery of the project.

PMPs must be submitted to FHWA for review and approval prior to FHWA issuing a Record of Decision. Refer to FHWA's *Project Management Plan Guidance* (January 2009) for more information on PMPs.

For Major Projects, FHWA requires cost estimate validations and financial plans in addition to the Project Management Plan. See FHWA's website on Major Projects for more information and guidance (http://www.fhwa.dot.gov/programadmin/mega/).

5.8 RECORD OF DECISION

NOTE: As discussed earlier in Section 5.6, FHWA can concurrently issue a joint FEIS/ROD. Work with the FHWA to determine the timing of ROD issuance.

The ROD, issued by the FHWA Division office, explains the basis for choosing the selected alternative to fulfill the needs of the proposed transportation improvement project. The ROD describes the alternatives considered and identifies the selected alternative. Mitigation measures and monitoring programs designed to enforce their implementation are also outlined in the ROD. While cross-referencing and incorporation by reference of the FEIS and other documents are appropriate, the ROD must explain the basis for the project decision as completely as possible.

A. Preparation of ROD. After advising FHWA of all comments received on the FEIS and the evaluation thereof, BOPD prepares a draft ROD and requests that FHWA issue the ROD.

The following key items need to be addressed in the ROD:

- Decision of the selected alternative
- Alternatives considered
- The issues/impacts that were important factors in the decision-making process
- Section 4(f) approvals, when applicable
- Mitigation measures
- Monitoring or enforcement programs for specific mitigation measures
- Commitments (including NEPA/404 issues)
- Responses to substantive comments on the FEIS

If cases when the FEIS and ROD are not concurrently issued, the FHWA Division Office, in consultation with BOPD, cannot issue the ROD sooner than 30 days after publication of the FEIS notice in the *Federal Register* and no sooner than 90 days after publication of a notice for the DEIS.

NOTE: For Major Projects, a draft PMP should be submitted to FHWA by PennDOT prior to the ROD determination. A final PMP should be submitted to FHWA within 90 days after the ROD. The FHWA Division Office approves the PMP in consultation with the FHWA Headquarters Major Projects Team. Once the ROD determination has been made for a project, FHWA may withhold any further project approvals until the PMP is approved.

NOTE: Fill in the milestone date for the project's ROD issuance in the EIS Package Document in the CE Expert System.

B. FHWA Forwards Signed Copies of the ROD to BOPD. FHWA reviews the draft ROD and ensures all items required in the ROD are included. FHWA then prepares and issues the official ROD. One copy of the ROD is returned with a cover letter to BOPD.

The signed ROD constitutes NEPA approval, meaning that BOPD may grant Act 120 approval. The Originating Office is notified, and the project can then proceed into the Final Design Phase.

C. BOPD Submits Act 120/Section 2002 Finding to the PennDOT Secretary for Approval. Under Pennsylvania Act 120, a State Environmental Finding is required to secure environmental clearances necessary before Location/Design can be approved. For projects that require the acquisition of publicly owned public parks, recreation sites, or refuges, and historic sites, a Section 4(f) approval must be included in the ROD issued by FHWA. Act 120 also requires that the Originating Office prepare an Act 120/Section 2002 Finding to justify the effects of transportation improvements on:

- Residential and neighborhood character and location
- Conservation, including air, erosion, sedimentation, wildlife, and general ecology of the area
- Noise, air, and water pollution
- Multiple uses of space
- Displacement of families and businesses
- Replacement housing
- Recreation and parks
- Aesthetics
- Public health and safety
- Fast, safe, and efficient transportation
- Civil defense
- Economic activity
- Employment
- Fire protection
- Public utilities

- Religious institutions
- Conduct and financing of government, including the effect on the local tax base and social service costs
- Natural and historical landmarks
- Property values
- Education, including the disruption of school district operations
- Engineering, right-of-way, and construction costs of the project and related facilities
- Operation and use of transportation routes and facilities

An Act 120/Section 2002 Finding documents that there is no "prudent and feasible" alternative to the use of such areas and describes measures to minimize harm to these resources. The Originating Office will forward the draft Act 120/Section 2002 Finding to BOPD, which in turn will submit it to the PennDOT Secretary for approval.

BOPD will prepare and submit the environmental finding to be signed by the PennDOT Secretary, who indicates either:

- No adverse environmental effect is likely to result from the proposed transportation improvement or

- No "prudent and feasible" alternative to the selected action exists, and all reasonable steps have been taken to minimize the effects of the proposed action.

This is the main finding required by Pennsylvania Act 120.

D. Originating Office Publishes Notice of ROD Approvals in Local Newspapers. The Originating Office will place the legal notices and/or block advertisements in the local newspapers within 30 days of NEPA approval. Copies of the notices should be sent to BOPD or FHWA for federal oversight projects.

E. BOPD Announces Environmental Finding in Pennsylvania Bulletin. Within 30 days of NEPA approval, BOPD should publish the Pennsylvania Act 120/Section 2002 Environmental Findings in the *Pennsylvania Bulletin* in order to officially record the determination.

F. Notify the Public of the ROD. The EIS process can be lengthy. Once a ROD is issued, it is a good idea to inform the public and resource agencies. This can be done in a variety of ways. One way would be to prepare and distribute a newsletter describing the selected alternative, officially announcing that the project will proceed to the Final Design/Construction Phase, and setting out a tentative schedule for design and construction. Conclude by thanking citizens for becoming involved in the study through their correspondence and attendance at the public meetings and the public hearing.

The website should be updated to announce FHWA issuance of the ROD, as well as provide a tentative schedule for final design, right-of-way acquisition and construction.

G. FHWA Publishes Federal Register Statute of Limitations Notice (optional). Codified at 23 USC §139(l), a 150-day statute of limitations (SOL) on claims against USDOT and other Federal agencies for certain environmental and other approval actions can be established. The SOL applies to a permit, license, or approval action (such as a ROD) by a Federal agency if:

- The action relates to a transportation project; and

- A SOL notification is published in the *Federal Register* announcing that a Federal agency has taken an action on a transportation project that is final under the Federal law pursuant to which the action was taken.

The SOL provision is intended to expedite the resolution of issues affecting transportation projects. Whether a SOL notice is needed or is the best way to achieve such resolution on a project is a risk management decision. A determination should include consideration of the nature of the Federal laws under which decisions were made for the project, the actual risk of litigation, and the potential effects if litigation were to occur several years after the FHWA NEPA decision or other Federal agency decisions.

If a determination is made by FHWA with BOPD that an SOL notice should be published, FHWA will prepare a notice stating that the ROD has been issued for the project identifying an alternative as the selected alternative and that they are invoking the 150-day SOL on that decision. This will start the 150-day time clock for claims against the project. An example SOL *Federal Register* notice can be found in Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix M. (Note that the example was prepared with the previous 180-day time clock, not the current 150-day SOL.)

If no SOL notice is published, the period for filing claims is not shortened from what is provided by other parts of Federal law. If other Federal laws do not specify a statute of limitations, then a 6-year claims period applies (28 USC §2401). As there is no specified SOL for NEPA decisions, the SOL for a ROD would be six years if no SOL is published in the *Federal Register*.

NOTE: Nothing prohibits the consolidation of notices for multiple projects into a single *Federal Register* notice. This may be a cost effective approach if the FHWA Division Office is publishing several notices in the same timeframe.

5.9 MITIGATION REPORT AND ECMTS

Prepare a Mitigation Report - a summary document that informs design consultants, value engineering teams, project engineers, and construction contractors of all committed mitigation measures that must be incorporated into the project design. Also include in the Mitigation Report operational and construction measures to minimize or avoid the environmental consequences of the project.

The report should cover the following topics at a minimum:

- Introduction: Purpose of the Report
- Brief Project Description (including mapping and plans)
- Environmental Consequences Requiring Mitigation
- Committed Measures to Minimize or Avoid Environmental Consequences
- Public and Agency Involvement
- Schedules and Time Frames for Fulfilling the Commitments

The draft Mitigation Report summarizes the mitigation commitments for the project. Typically, all commitments are outlined in the FEIS. The draft Mitigation Report is reviewed by PennDOT Central Office and FHWA. Any modifications in mitigation commitments made after the review period for the FEIS should be incorporated into the mitigation summary in the ROD and in the final Mitigation Report. The Originating Office is responsible for preparing the final Mitigation Report. PennDOT Central Office and FHWA will review and comment on the final Mitigation Report after it has been submitted to BOPD.

The ECMTS Report's Mitigation Tracking System Matrix, which was filled out during FEIS preparation, should be updated, as necessary, and finalized as part of the ECMTS Report. For more information on ECMTS, refer to Publication 10X, Design Manual Part 1X, *Appendices to Design Manuals 1, 1A, 1B, and 1C*, Appendix T.

Once the reports are finalized, the Originating Office should provide the Mitigation Report and ECMTS Report to final design consultants, resource and permitting agencies, contractors, environmental monitors, project managers, and individuals tracking mitigation commitments. The Final ECMTS Report should also be forward to the District Environmental Unit, Contract Management Engineer, and other interested parties that received copies of the EIS documents. The Mitigation Report and ECMTS assist PennDOT, FHWA, and contractors in ensuring that mitigation commitments are carried out.

5.10 RE-EVALUATE EIS, IF NECESSARY

After issuance of the ROD, the Originating Office will consult with the FHWA Division Office prior to requesting any major authorization or approval from FHWA. The purpose of the consultation is to establish whether the ROD remains valid. Major authorizations include such things as Final Design Approval, Right-of-Way Acquisition Approval, Utility Relocations and Construction Authorization. For an EIS project, the Originating Office must re-evaluate the project when:

- Submitting the Form D-4232 for a major authorization for the project. (This can be as simple as including the date of the ROD on the Form D-4232; see criteria below on number of years elapsed and significance of changes.)

- Changes to the proposed project would result in potentially significant changes in the proposed action, affected environment, anticipated impacts or proposed mitigation measures. (Re-evaluation document likely to be necessary.)

- New information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts would result in potentially significant environmental impacts. (Re-evaluation document likely to be necessary.)

As a project proceeds through Final Design, it is normal for the Selected Alternative to undergo design refinements. These refinements are made as the more detailed engineering plans are developed and may result from new information from detailed geotechnical analyses, value engineering efforts, new information learned during right-of-way negotiations, etc. The refinements may result in changes in specific environmental impacts and could require modification or addition of mitigation commitments.

During Final Design, a project area does not remain stagnant; land use changes are likely to occur. In some project areas, changes may be slow while in others dramatic changes could occur between the ROD and completion of Final Design. These changes have the potential to affect the Final Design, the impacts, and/or the mitigation commitments of a project and need to be evaluated as Final Design progresses.

At any point in Final Design when a substantial change is identified either in the design or in the project area, determine whether design changes result in changes to impacts, mitigation commitments, and whether those changes could affect the NEPA decision (ROD). In this sense, "re-evaluation" is a continuing effort throughout Final Design.

Officially, re-evaluation occurs each time FHWA is asked to provide an authorization or approval for the project. The format of each re-evaluation varies based on the time that has elapsed since the last major authorization and the magnitude of the changes that have occurred.

- If **three years or less** have elapsed since the last major authorization and **no significant changes** have occurred then the re-evaluation can be done through simple consultation with FHWA. The date of the ROD issuance must be placed on the new Form D-4232.

- If **over three years** have elapsed since the last major authorization, then a written re-evaluation is necessary. If the Environmental Manager determines that **no significant changes** have occurred, the following re-evaluation statement must be placed in the Form D-4232 to document the re-evaluation: "Based on the re-evaluation of the proposed project there have been no significant changes in the proposed action, the affected environment, the anticipated impacts or the proposed mitigation measures since original NEPA clearance was given."

- If **over three years has elapsed** and it is perceived that **potentially significant changes have occurred, as per the determination of the Environmental Manager, a re-evaluation document** addressing the significance of changes in the proposed action or environmental conditions as presented in each major section of the EIS must be prepared.

Where the re-evaluation determines that the changes are not significant, this is documented and the project can continue forward. Where it is determined that there are significant new impacts not previously evaluated, consider a supplemental EIS and/or revised ROD.

NOTE: It is recommended that, prior to preparing an EIS Re-evaluation document, coordination occur between FHWA and PennDOT to review the project, determine the documentation necessary, and discuss the best format for that documentation.

EXAMPLE: Examples of potentially significant changes could include changes in the project scope, changes in the surrounding environment, or other new information or circumstances that would result in significant environmental impacts that were not evaluated in the EIS.

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CHAPTER 6

DOCUMENTATION FOR 100% STATE-FUNDED PROJECTS WITH NO FEDERAL INVOLVEMENT

6.0 APPLICABILITY OF ENVIRONMENTAL DOCUMENTATION (ED) AND ENVIRONMENTAL EVALUATION REPORTS (EERS)

This chapter provides guidelines for preparing documentation for projects that do not involve any major Federal actions, including Federal-aid funding. Projects that are 100% State-funded (in both design and construction) and do not require any other major Federal action fall into this category. (In the remaining text of this chapter, applicable projects are referenced as "100% State-funded projects"; it will be understood that these projects are 100% State-funded in both design and construction and also do not require any other major Federal action.)

If a project is 100% State-funded, one of the following two types of environmental documentation may be necessary: Environmental Documentation (ED) or an Environmental Evaluation Report (EER). Generally, ED is prepared for projects that otherwise would qualify as a CEE, while EERs are prepared for projects that otherwise would qualify as an EA or EIS.

An EER is required by PA Act 120 if **both** of the following conditions exist:

- The project is a transportation route or program; and
- The project requires new or additional right-of-way.

If **none or only one** of the two aforementioned conditions applies to the project, an EER is not required by PA Act 120; however, it may be appropriate to prepare ED.

Regarding the first condition, a **transportation route or program** does not include any action that would be classified as a CEE by FHWA. The converse statement is also true: an action that would be classified as a CEE by FHWA is not a transportation route or program. Translating these statements to a 100% State-funded situation, a CE-type project (one that would be classified as a CEE by FHWA if a Federal action were involved in the project) would not require an EER because it is not considered a transportation route or program. No additional right-of-way is required for a transportation route or program.

If an EER is not required by PA Act 120, it may still be appropriate to prepare Environmental Documentation (ED). The District should coordinate with HDTS to determine if the project warrants preparation of ED. ED may be requested for projects that include right-of-way acquisition and other special circumstances determined by HDTS.

NOTE: In general, ED is appropriate for projects that would be categorized as CEEs if a Federal action were involved in the project. Consult with HDTS to determine if ED is necessary. Although not legally required by Act 120, using the CEE format as the method of documenting a 100% State-funded CE-type project will ensure that all environmental impacts are considered. This may be particularly advantageous in the event that Federally-aided funding becomes available, and a CEE is required.

6.1 ENVIRONMENTAL DOCUMENTATION (ED)

ED is to be prepared using the CE Expert System and guidance provided in Chapter 3. Information supplied in the Package Document regarding Federal funding and Federal oversight will be used by the CE Expert System in identifying whether the document should be ED or a CEE.

A. Content of ED. The information contained in ED is generally the same as that required for Federally regulated CEEs. The CEE actions and level criteria presented in Tables 3.1, 3.2, 3.3, and 3.4 should be applied to determine the level of documentation appropriate for the ED (i.e., Level 1a, Level 1b, or Level 2). In assembling ED, the preparer should follow the steps provided in Chapter 3 for CEEs.

Exceptions to the Chapter 3 guidelines that are to be applied only to 100% State-funded projects are presented in the following subsections. The primary exception is that FHWA is not in any way involved in the Process for 100% State-funded projects.

Cultural Resources

For 100% State-funded projects that may affect historic or archaeological resources listed or eligible for listing in the NRHP, consult with PennDOT's EPDS or CRP and follow these guidelines and regulations:

- Act No. 1988-72, Title 37, the State History Code (37 Pa. C.S. 101-906)
- *Cultural Resource Management in Pennsylvania: Guidelines for Archaeological Investigations*, Bureau for Historic Preservation, Pennsylvania Historical and Museum Commission, July 1991
- Publication 689, *Cultural Resources Handbook*

The lack of Federal funding does not necessarily remove Section 106 requirements, especially when an individual USACE permit might be required. Section 106 covers federally funded or permitted actions.

Section 2002 Resources

If a Section 2002 Resource is used on a 100% State-funded project, a Section 2002 Evaluation is required. Guidance for completing and circulating a Section 2002 Evaluation is contained in Publication 349, *Section 4(f) Handbook.*

NOTE: Section 4(f) does not apply to 100% State-funded projects that require no USDOT action (e.g., FHWA Point of Access approval).

B. Approval of ED. All ED is approved by the Department. The District Environmental Manager or the District Executive can approve some ED, while others require approval by the Director of BOPD.

ED that would be classified as a Level 1a CEE under the Federal process is approved by the District Environmental Manager, while ED similar to a Level 1b CEE is approved by the District Executive. Refer to Section 3.3 for guidelines.

ED that would be classified as a Level 2 CEE under the Federal process is approved by HDTS. Refer to Section 3.3. In this instance, however, BOD will not forward the ED to FHWA for approval.

6.2 ENVIRONMENTAL EVALUATION REPORT (EER)

An EER is prepared to satisfy the requirements of PA Act 120, for those transportation projects which do not require any major Federal action. In accordance with PA Act 120, an EER is required if both of the following conditions exist:

- The project is a transportation route or program; and
- The project requires new or additional right-of-way.

A. Content of EERs. The information that needs to be gathered and assessed to meet all appropriate regulatory requirements and complete an EER is very similar to the information needed to complete an EA or an EIS. Therefore, Chapter 4, discussing EAs, can be used as a guide for gathering information, developing alternatives, assessing impacts and identifying appropriate mitigation measures in preparation for writing an EER. The decision as to which chapter to use can be made by the Department based on whether the project would have been classified as an EIS or an EA under the Federal regulations. Assuming the project would have been classified as an EA under the federal regulations, the process described in Chapter 4 should be followed. Section 4.8 discusses the information to be included in the EER (the EA).

Resource agency coordination for EERs is generally done as part of the process of gathering and assessing data and information in the process of preparing the EER. Coordination will help identify issues of concern so they can be resolved early in the Process. Additional coordination with resource agencies may be necessary to coordinate mitigation commitments and obtain necessary permits.

If a project involves the use of land from a recreation area, wildlife and/or waterfowl refuge, historic site, State forest land, State game land, wilderness area, or public park, a Section 2002 Evaluation must be prepared to accompany the EER. (Section 2002 of PA Act 120 is very similar to Section 4(f) of the U.S. DOT Act of 1966 which would be followed on Federal-aid projects. Publication 349, *Section 4(f) Handbook* contains information on preparing Section 2002 Evaluations.)

B. Circulation and Public Hearing Requirements for EERs. The primary difference between completing a project as an EER compared with an EA is in the distribution and approval process. This section describes the distribution and approval process for EERs.

The Originating Office prepares the EER following the data collection and evaluation procedures outlined for EAs in Chapter 4 using the EER (the EA). Following an internal review by the District Environmental Manager, the Assistant District Executive, and the District Executive, the Originating Office then submits the EER to HDTS. If a Section 2002 Evaluation is required, the draft should be included as an attachment to the EER. HDTS will coordinate a review of the EER and Section 2002 (if required) with EPDS and Office of Chief Counsel, as appropriate. HDTS will submit any comments to the Originating Office to revise the EER and/or Section 2002 Evaluation. Once comments have been submitted, the original submitter will be notified and will make the necessary revisions. Once the revisions are made, an internal review by the Environmental Manager, ADE, and DE should be performed to approve the revisions. Once approved internally, the Project Manager should notify the HDTS PDE that the revised EER is again available for review. HDTS will coordinate a back check review of the EER and supporting documentation with HDTS, EPDS, and Office of Chief Counsel.

NOTE: When a project involves a Section 2002 Evaluation, the EER/Section 2002 must be reviewed by the Office of Chief Counsel.

The opportunity for a Public Hearing or holding a Public Hearing is required for all EERs. In conducting the Public Hearing, the Department must follow the Public Involvement/Public Hearing Procedures, as outlined in Publication 295, *Project Level Public Involvement Handbook*.

The Public Involvement/Public Hearing Procedures set forth the procedures defining when a Public Hearing is required. If the project would have been classified as an EIS under the Federal regulations, then a Public Hearing must be held. If the project would have been classified as an EA under the Federal regulations, then at a minimum, a Notice of Opportunity for a Public Hearing must be published asking interested citizens to respond.

PA Act 120 requires that the Department of Agriculture, PA DEP, DCNR, the Department of Community and Economic Development, the Department of Health, and the PFBC make a report indicating the environmental effects of the proposed transportation route or program at the Public Hearing. However, the officials from these agencies normally do not attend the Public Hearing. By circulating the EER to these agencies prior to holding a Public Hearing, and by including their substantive comments with the EER, this is the equivalent of their making a report at the Public Hearing, and therefore, complies with PA Act 120.

Each PA Act 120 agency (listed above) should be given one (1) copy of the EER at least 45 to 60 days prior to the first public notice of Public Hearing or the Notice of Opportunity for a Public Hearing with a 30 day comment period. This is done after HDTS has completed its back check of the EER and given approval for availability. The reasoning behind the 45 to 60 day period is that any comment letters received from the PA Act 120 agencies that contain substantive comments should be included in the EER prior to making the EER available to the public.

Once the PA Act 120 agencies have been allowed an opportunity to comment on the EER, the EER should be made available to the public at the Originating Office and at one or more convenient public locations in the project area (e.g., Municipal Building, Public Library). If it is agreed by the Department that a Public Hearing will be held, then in accordance with PennDOT's Public Involvement/Public Hearing Procedures, the EER should be available for a minimum of 30 days. The newspaper ad announcing the Public Hearing should invite the resource agencies and the public to testify at the Hearing and/or submit written comments to the Originating Office within the designated 30-day comment period. The newspaper ad should identify the location(s) where the EER is available for review.

If the Department elects to publish a Notice of Opportunity for a Public Hearing, the Notice of Opportunity will state that written requests for a Public Hearing should be received within a minimum of 15 days after the notice is published. If requests are received, individuals may be contacted to resolve the issues of concern. If all issues can be resolved then it is not necessary to hold the Public Hearing. If two or more issues remain unresolved, the Department will hold a Public Hearing. If no Public Hearing is held the EER should be available for a minimum of 30 days. The newspaper ad announcing the Opportunity for a Public Hearing should indicate the comment period and identify the location(s) where the EER is available for review. If a Public Hearing is requested and issues cannot be resolved, a notice should be issued announcing the date of the Public Hearing and allowing a 30-day comment period starting on the date of the notice.

C. Final Approval of EERs. For EER projects, the final approval by the Deputy Secretary of Transportation on behalf of the Secretary of Transportation is not requested by HDTS until after the 30-day review period has ended and comments have been appropriately addressed. The Originating Office will compile the comments/Public Hearing testimony, address the comments, and if necessary make revisions/additions to the EER. This information will then be submitted to HDTS. Once HDTS, in coordination with EPDS and Office of Chief Counsel, as appropriate, is satisfied that the comments are adequately addressed, the EER will be forwarded to the Director of the Bureau of Project Delivery on behalf of the Secretary of Transportation for PA Act 120 compliance. HDTS will then prepare a notice for publication in the *Pennsylvania Bulletin* and will notify the Originating Office of the Act 120 finding.

NOTE: EERs are approved by the Director of the Bureau of Project Delivery on behalf of the Secretary of Transportation for PA; FHWA is not involved.

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