CHAPTER 2 – Project Development and Environmental Project (PD&E) Management

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Introduction

The term Project Manager (PM) is a general term used throughout this chapter for the Florida Department of Transportation (FDOT) employee responsible for managing the Project Development and Environment (PD&E) phase of a project. Unless specifically indicated otherwise, PM refers to the FDOT PD&E PM.

The PD&E process is described in FDOT ***Procedure 650-000-001***, ***Project Development and Environment Manual (PD&E Manual)***. This process has been authorized by Florida Statute to comply with the requirements of the National Environmental Policy Act (NEPA) and other related federal and state laws, rules and regulations. There are also environmental reporting requirements for non-federally funded projects. The PD&E Manual should be used as a reference for these projects as well.

The objective of this chapter is to assist the PM in navigating through the PD&E study process from initiation through completion of a study. The intent is not to replicate the detailed information provided within the PD&E Manual but to direct the PM to the applicable sections in a logical, efficient manner. Flow charts in Figures 1 through 4 at the end of this chapter depict the PD&E process.

PD&E Projects

Throughout this chapter reference is made to “Lead Federal Agency”. The lead federal agency on the majority of FDOT projects is the Federal Highway Administration (FHWA), but others may be lead agencies. These include, but are not limited to Federal Aviation Administration, Federal Railroad Administration, and Federal Transit Administration.

PD&E studies can be long and complex undertakings. They are to be a continuation of the analyses from the earlier Planning and Programming stages of the project in the Efficient Transportation Decision Making (ETDM) process. The Planning and Programming stages include an analysis by environmental resource agency staff known as the Environmental Technical Advisory Team (ETAT). The ETAT reviews various databases using an interactive Geographic Information System (GIS) platform and other departmental reference material.

The objectives of a PD&E study are to perform necessary social, environmental and engineering studies of a proposed transportation improvement, to support decisions concerning if and where a project should be built and to decide what the basic design concepts will be. The social, environmental and engineering studies to be conducted are in response to comments received from the ETAT reviews of the project during the Planning and Programming screens. The ETAT will also provide additional information needed. Throughout this process, it is essential that the public have effective input into these decisions. The public includes individual citizens as well as state and federal agencies, permitting agencies, local governments, neighborhood associations, businesses, and

environmental and other interest groups. The products of a PD&E study are the reports of findings and recommendations, appropriate environmental documents and preliminary engineering concepts. The engineering included in a PD&E study varies depending on schedule, funding and required study. This engineering component might result in a level of detail necessary to obtain the project's environmental permits. The ETDM process is further discussed in the ***ETDM Manual***.

Typical tasks accomplished in a PD&E study include agency coordination, data collection, development of alternatives, environmental analysis and report preparation/review, public involvement, evaluation and selection of alternatives, Value Engineering (VE), and documentation.

Data Collection

The data-collection phase is not a well-defined activity. On most studies this activity will actually start well before the execution of the consultant contract during the ETDM Planning and Programming screens and the development of the study scope of work. This activity will often continue until after the public hearing when comments from the public are addressed. However, for the purpose of this chapter, the discussion will primarily address the data-collection activities that are required to evaluate the study need and the development of alternatives.

Engineering data that may be collected include existing roadway plans, straight-line diagrams, right of way maps, crash data, functional classification and posted speed limit, pedestrian or bicycle facilities, lighting and traffic signalization, utility locations (existing and planned), transit and rail operations (existing and planned), soils and geotechnical data, existing pavement condition, traffic volumes (existing and projected), drainage maps and features, access management and median openings, and current aerial photography.

If the study involves an existing bridge, information that might also be collected include type of structure and existing structure plans, structural condition and rating, horizontal and vertical clearance, span arrangement (number and length), and historical significance.

If a bridge on the project crosses a waterway, information that may also be collected include channel data (alignment, width, depth and required clearance), boat traffic survey (size and type of watercraft), number of openings for movable structures, ship impact data, and scour data.

Environmental data that may be collected in response to comments and questions received during the Planning and Programming screens include land uses (existing and proposed), cultural features and community services, archaeological and historic features, natural and biological features, known contamination sites, existing noise studies, socio/economic information, and community values, views and opinions regarding the project and area.

The information listed above is not meant to be all-inclusive. Some projects may require more or less information depending on the project and the results of the ETDM Screenings. The PM must determine what information or data must be collected. This determination should be conducted with the project team to ensure that all areas of concern are addressed. For a more detailed discussion of data collection and needed information, see the specific chapter for each technical topic in the PD&E Manual.

Identification of Project Needs

The needs for the project are identified during the ETDM Planning and Programming phases. These identified needs are further evaluated during the PD&E phase by evaluating existing data and through the public involvement process. These needs will directly affect what alternatives will be evaluated and serve as justification for the project. Because there are often multiple deficiencies or desires, there are often multiple needs. These needs can be separated into two categories: area-wide needs and project corridor needs. Area-wide needs relate to system deficiencies and local government or community desires. Project corridor needs relate to route deficiencies and specific community desires within a corridor. These needs are explained in more detail in subsequent sections of this chapter.

Project needs should be identified in the Planning and Programming phases and come from the Long Range Transportation Plan (LRTP) and, ideally, the Transportation Improvement Program (TIP). Projects should be consistent with local comprehensive plans. Meetings with local government officials, business communities and the public are valuable in verifying needs.

For project corridor-specific needs, a review of FDOT databases and/or specialized analyses may be required to determine deficiencies. Corridor-specific needs may include deficiencies of the existing facility, the need for additional capacity and the safety of the existing facility. Project needs are discussed in detail in the ETDM Manual and the PD&E Manual.

If a new or revised interchange is required, an Interchange Justification Report (IJR) or Interchange Modification Report (IMR) may be required. These are normally produced in the planning phase of a project, but they may be a PD&E requirement. Technical and administrative procedures for interchange justification/modification are found in **Procedure No. 525-030-160**, ***Interchange Justification***, and described in the ***Interchange Handbook*** and associated training materials.

Non-Federally Funded Projects

A State Environmental Impact Report (SEIR) may be required for certain non-federally funded projects. The PD&E Manual explains procedures to be followed with non-federally funded projects. A SEIR is required if the project is a major transportation project using non-federal funds and one of the following conditions is met:

- The project is part of the State Highway System (SHS).
- The project is a toll project.
- The project is privately funded or connected to the SHS.

Projects that do not meet one of these criteria, even though major, will not be required to process a SEIR.

Major projects are generally defined as having one or more of the following characteristics:

- A new freeway or expressway.
- A highway providing new access to an area that could substantially change land use or development patterns.
- A new or reconstructed arterial highway that could substantially increase capacity or change land-use or development patterns.
- A new circumferential or belt highway that bypasses a community.
- Added interchanges to a completed freeway or expressway.
- A new bridge that provides new access to an area.
- Major Public Transit Projects such as an intermodal center, passenger rail, etc.

When it is determined that a project is not major, a designation of Non-Major State Action (NMSA) is assigned. The NMSA does not require a public hearing but may require public involvement activities. Projects meeting the NMSA criteria are excluded from the SEIR process.

Class of Action Determination

When the project has completed the Programming screen, the Department's ETDM Coordinator will work with the lead federal agency, in making an environmental Class of Action Determination. This determination is made part of the final Programming Summary Report (PSR) which is completed prior to the project being programmed in the FDOT's five-year work program. It is these project concepts (types of facilities, number of lanes, interchanges and intersections, structures, and so forth) identified in the PSR that will become the basis for alternatives that will be further studied.

Federally funded projects are classified as one of the following:

- **Categorical Exclusion (CE).** This classification is for projects that do not individually or cumulatively have a significant impact on the social, physical or natural environment. These projects are exempt from the NEPA requirements. However, they still must meet all other federal

and state requirements and executive orders. CEs are processed as one of three types: Type 1, Programmatic, and Type 2. Type 1 and Programmatic CEs are typically identified as minor projects. The PD&E Manual has a list of typical minor projects. A major project that is determined not to have any significant impacts is a Type 2 CE. Any Type 2 CE requires appropriate environmental analysis in order to address the concerns and questions identified by the ETAT during the Planning and Programming screens. This analysis supports the determination that there is no significant impact.

- **Environmental Assessment (EA).** This document may be required when the significance of any environmental impact has not been clearly established.
- **Environmental Impact Statement (EIS).** The EIS classification applies to projects that will have a significant impact on the social, physical or natural environment as defined by NEPA and Part 40, Section 1502, Code of Federal Regulations (C.F.R.).

The PD&E Process Flowchart at the end of this chapter illustrates that the Class of Action Determination and scope of work are completed during the Programming phase and documented in the PSR. The PSR is the basis for the type of study that is programmed in the five-year work program

For projects determined to be Type 2 CEs, the Project Development Summary Report (PDSR), discussed later in this chapter, will serve as the decision-making document. At the completion of the PD&E study, the PDSR and the Public Hearing transcript are submitted to the FHWA, in order to receive Location and Design Concept Acceptance (LDCA).

Development of Alternatives

While there is no set number of required alternatives for a PD&E study, Council on Environmental Quality (CEQ) regulations require the PM to “rigorously explore and objectively evaluate all reasonable alternatives.” Generally, a PD&E study will include the following alternatives:

- **No-Build Alternative (mandatory).** This alternative is the existing system with any improvements already programmed that are not specifically tied to the new project. The no-build alternative is considered a viable alternative through the public hearing.
- **Transportation System Management (TSM) Alternative.** This alternative consists of those minor improvements that would maximize the efficiency of the existing facility. This alternative may include safety improvements, access management and signalization.

- **Transit Alternative.** This alternative, in most cases, is incorporated with other alternatives such as the TSM or a construction alternative. It addresses the potential to reduce traffic by increasing use of an alternate mode of transportation.

Construction Alternatives require reconstruction or widening of the existing facility or building a new facility on a new location and are consistent with the project concept identified in the PSR. More than one construction alternative is usually developed. In the development of the construction alternatives, the PM should consider the issues and surroundings associated with the project. Project alternatives need to improve transportation; but they should also, if applicable, enhance the community by maintaining its scenic or historic values or fit within the vision of the community. Deviations from the FDOT standards might be appropriate in order to design an alternative that meets the community values or to avoid or minimize social or environmental impacts. These deviations may require design variances or exceptions that must be discussed with and approved by the District Design Engineer (DDE).

The PM must develop each alternative until an objective evaluation of its cost and impact are addressed. The level of development depends on the alternatives under consideration. In some cases, a simple concept may be all that is necessary to compare the alternatives. Some cases, on the other hand, may require a high level of detail. In all cases, the analysis of each alternative must address the following:

- Cost, which includes engineering, right of way, relocation, environmental mitigation, utility relocation, construction, and construction engineering and inspection costs.
- Right of way involvement, which includes drainage requirements and easements.
- Number of relocations, both residential and business.
- Impact to any special, unique, natural, historic or otherwise significant feature.
- Potential for Section 4(f) involvement (see discussion below).
- Assessment of community impacts.
- Summary of environmental impacts.

The PM is responsible for ensuring all reasonable alternatives have been studied and dismissal of other alternatives has been justified, based on reasonableness and feasibility. In order to eliminate a viable alternative the PM should coordinate with the lead agency and the reason must be well documented. The PM must ensure that the development of alternatives is consistent with PD&E Manual.

Section 4(f)

The U. S. Department of Transportation Act (DOT Act) of 1966, included a special provision which (Section 4(f)) stipulated that the FHWA and other DOT Agencies (including FTA and FRA) cannot approve the use of land from publicly owned parks, recreational areas, wildlife and waterfowl refuges, or public and private historical sites unless the following conditions apply: (1) there is no feasible and prudent alternative, and (2) the action includes all possible planning to minimize harm. This policy does not prohibit the taking of public lands, but it must be demonstrated that there is no feasible alternative. The ***Section 4(f)*** website contains useful information on federal requirements and documentation required concerning this topic.

Environmental Analysis

Environmental analysis for the study will start during the Programming screening analysis. The ETDM process initiates NEPA with the notification to the ETAT that the project is ready for review in the Programming screen. The ETAT will determine the magnitude of effect the project has on its respective resources. The ETAT will also comment as to the sufficiency of the existing databases and the need for additional information to verify the degree of effect. This request for additional information forms the scope of work for the study and the need for the required environmental analysis.

Once alternatives have been developed, the requested environmental analysis of each alternative should be performed. The analysis differs by type of impact. Some environmental analyses may only require simple consultation with the appropriate ETAT member, while other impact analyses will use measures such as field-testing and computer simulations.

Although an analysis may be of a quantitative or qualitative nature, the environmental impacts are evaluated for level of significance. For a more detailed discussion of the level of significance for environmental impacts, see the PD&E Manual.

The PM is responsible for coordinating with the Environmental Administrator and environmental specialists throughout the environmental analysis process. While the PM may not be the one responsible for the actual analysis or documentation, the PM is responsible for ensuring that these analyses are conducted and documented according to the procedures outlined in the PD&E Manual.

Public Involvement

Public involvement is an essential and critical element of project development. The NEPA process requires extensive involvement, coordination and communication with all relevant and affected parties: the general public, community groups, environmental organizations, and local, state and federal agencies. The ***Public Involvement Handbook*** is available to the PM for developing and conducting an appropriate Public Involvement Plan for transportation projects. The PM should also refer to the Chapter 11 of the PD&E Manual.

Coordination

Project development demands a multi-disciplined approach in developing and analyzing alternatives for transportation projects. No one person has the knowledge to develop or the authority to approve a solution to the complex issues associated with these projects. Throughout the study, the PM must coordinate not only with other federal, state, and local agencies but also with other sections within the Department.

Governmental Coordination. The ETDM process lays the ground work for intergovernmental coordination. The ETAT members all represent various governmental resource agencies. The Planning and Programming screens are the beginning points for coordination. Some agencies may not desire or need further involvement. Additional agencies may be identified after the PD&E study has been initiated. It is critical to the success of the project to continue the coordination begun during the Planning and Programming stages throughout the life of the project. The development and review of environmental technical studies and public participation efforts are examples of situations requiring governmental coordination.

Public Coordination. The public involvement process requires extensive coordination. For instance, coordination with homeowners' associations and special interest groups may help identify all stakeholders along the corridor. This type of coordination is part of the public involvement process.

Interoffice Coordination. Because no one person has the knowledge to develop all elements of a project alternative, the PM must interact and work with various FDOT offices. Examples of such coordination with other offices and key personnel include the District ETDM Coordinator for updates on the project; Planning, for traffic projections; Structures, for bridges; Drainage, for drainage design; District Permit Coordinator for permitting; and Right of Way, for right of way estimates. The PM must understand that the alternatives developed must represent a consensus of the FDOT, not just the views of one office.

Evaluation and Selection of Alternatives

Once the alternatives public meeting(s) have been conducted and the environmental analysis is complete, the project team is in a position to evaluate the alternatives. Evaluation criteria will include, but not be limited to, the following:

- Project Costs (engineering, right of way, construction, construction engineering and inspection, mitigation)
- Maintenance of Traffic
- Environmental Impact (noise, air, wetlands, contamination, wildlife, and so forth)
- Socioeconomic Impact (relocations, aesthetics, cultural resources, and so forth)
- Public Sentiment
- Fulfillment of Project Needs and acceptable Level of Service (LOS)

If the criteria information is presented in a matrix format, persons reviewing it will more easily understand how the project team reached its conclusions. For more information on developing an evaluation matrix, see the PD&E Manual.

The PM must lead the project team through the evaluation process. In some cases a consensus among the project team is not achieved. Then, the PM must determine which alternative to recommend or propose for construction and to fully justify that recommendation. This decision is based on the project team's recommendations together with a subjective and objective review of the evaluation criteria.

The final recommended alternative will be the result of a consensus of the project team, FDOT, lead federal agency, local officials, the metropolitan planning organization and other appropriate stakeholders.

Permits

Prior to initiating the Project Development Study, the PM, working with the District Permit Coordinator, will determine if the environmental permits will be obtained during Project Development or throughout the project. This determination will be based on several factors. The first is whether or not the time duration of the permit would be sufficient to complete construction of the entire project. It is estimated a minimum permit duration of ten years would be necessary. Available funding for the additional surveying and engineering work should also be considered when determining if the environmental permits are to be acquired during the project development phase. Another factor is the production schedule of the project and its various segments. For long projects where only a shorter segment is planned for immediate completion, permits should be acquired for that section only.

The activities associated with acquiring permits for a project are discussed in the permitting section of Part 2, Chapter 3, Design Project Management, of this handbook.

Documentation

Draft Documents. When the evaluation of alternatives is completed, the PM is ready to prepare the first draft of the preliminary PDSR or Preliminary Engineering Report This first draft of the report is sent to the District Value Engineer. Then a VE Study may be conducted for the project.

At this point, the FDOT may have a locally preferred alternative identified. This alternative, however, should not be considered the recommended alternative until after the public hearing and lead federal agency approval. For a Type 2 CE project the FDOT may wish to carry one or more construction alternatives to the public hearing. In these cases, the draft reports should indicate which alternatives are being carried forward. For EA's or EIS's all alternatives are taken to the Public Hearing. A preferred alternative is not identified until after the Public Hearing.

Depending on the Class of Action Determination, the PM may have to prepare an Environmental Assessment (EA) or a Draft Environmental Impact Statement (DEIS). Directions for preparing and processing these documents are given in Part 1 of the PD&E Manual.

For a Type 2 CE, the preliminary PDSR can be submitted to the lead federal agency along with the public hearing transcript following the hearing. For more information on processing a Type 2 CE, see Part 1 Chapter 3 of the PD&E Manual.

If the project is a non-federally funded major transportation project, as defined by PD&E Manual, the PM should proceed with the development of the PDSR for submittal to the district secretary for approval. If the project has been designated an NMSA, the completion of a detailed checklist is typically the only documentation that is required.

The PM must ensure that draft environmental documents have been subjected to a comprehensive quality control review. Both the consultant and the districts have quality control plans; the processing of all documents must follow these plans. Documents containing errors or inaccuracies must not be sent to the lead federal agency or made available to the public.

Project Development Summary Report (PDSR)

After the Public Hearing the recommended alternative will then be developed to a level that allows a clear understanding of impacts and costs. At this point, the preliminary PDSR is completed and submitted to the lead federal agency along with the public hearing transcript and the environmental document if applicable. This report will outline a clear understanding of the recommended alternative including the preferred alignment, typical section, right of way requirements, environmental impact and results of the Public Involvement Plan. The report will also include cost estimates for design, right of way, construction, and construction engineering. Districts require different levels of completeness for the plans development during the PD&E phase. The level of detail will also be determined by whether or not environmental permits will be applied for during the PD&E study. This issue should be addressed in the scope of services.

The final PDSR will be prepared once the environmental permits have been obtained if applicable, or after the lead federal agency has granted the project LDCA (where permits are not required). The PDSR includes sections on the preferred alternative, summary of environmental impacts, summary of permits and mitigation, summary of the public involvement, and commitments and recommendations. For more detailed information on the content and format of the PDSR, see the PD&E Manual.

The flow chart following the references at the end of the chapter illustrates where the preliminary and final PDSRs should fall in the PD&E process.

Perimeter Wall Justification Report. The initial assessment for the use of a perimeter wall should typically be performed during the Project Development and Environment (PD&E) process and only when such a wall is requested by a local municipality or a substantial group of affected residents/property owners. The results of the perimeter wall analysis shall be documented in a Perimeter Wall Justification Report. This is a standalone report and is not part of any environmental document. Final decisions made during the Design Phase will be added to the report by addendum. The final decision for the use of a perimeter wall should be made during the Design Phase when the final conditions and cost are available for consideration.

To assure that the use and costs of perimeter walls are consistent across the state, guidelines containing the process and design methodologies to be used when considering the use of perimeter walls can be found in Chapter 32 of the ***Plans Preparation Manual, Volume 1***.

Final Environmental Document. After the comment period that follows the public hearing ends and comments have been addressed, the final environmental documents are prepared for the selected alternative. Depending on the type of environmental documentation required, Finding of No Significant Impact (FONSI) or Final Environmental Impact Statement (FEIS), the final draft is prepared. Requirements for and processing of these documents are discussed in **Part 1** of the PD&E Manual.

When the final documents are completed, reviewed by Central Office, and have gone through the appropriate quality control process, the PM will submit these reports to the lead federal agency. After the lead federal agency comments and/or concurs with the findings, it will approve the environmental document and grant the LDCA.

Reevaluation

When project changes occur after approval of the original environmental document, a Reevaluation is used to document compliance with federal laws. A reevaluation is required for:

- Design, Right of Way, or Construction Advertisement
- RFP Package for Design Build Projects
- Design Concept Change
- Prior to FEIS if more than 3 years since DEIS

These situations and the format for the Reevaluation package are thoroughly discussed in the PD&E Manual.

Generally, the reevaluation process is approval by exception. Issues that remain unchanged from the original study are stated and documented. Any significant change in the social, economic or environmental impacts associated with the project are noted and expanded upon. This report is typically done in memorandum format. Evaluation of major design changes and revised design criteria are summarized, and the previously prepared engineering document is referenced for all original information that is unchanged.

The Mitigation Status and Commitment Compliance section serves to document commitments made or mitigating factors that were established through the Reevaluation process and serves as a basis for the scope on subsequent phases of the project. It is critical that this section is clear and thoroughly documented to highlight these commitments for the design Project Manager, who will advance the project through the design phase.

The Permits Status section lists previously obtained permits, if they exist. Any conditions of the permits should be included in the project documentation and summarized under this section. A thorough discussion of the Reevaluation process is included in the PD&E Manual. Format guides, sample letters, and a flowchart defining the process are presented.

Figure 1
PD&E Process Flow Chart

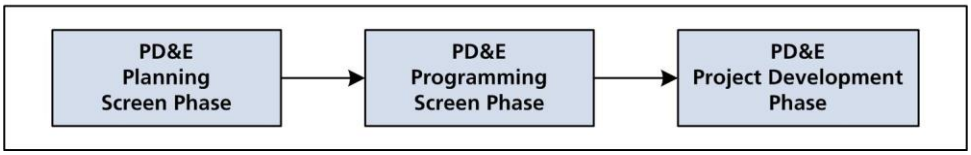


Figure 2
PD&E Process Flow Chart: Planning Screen Phase

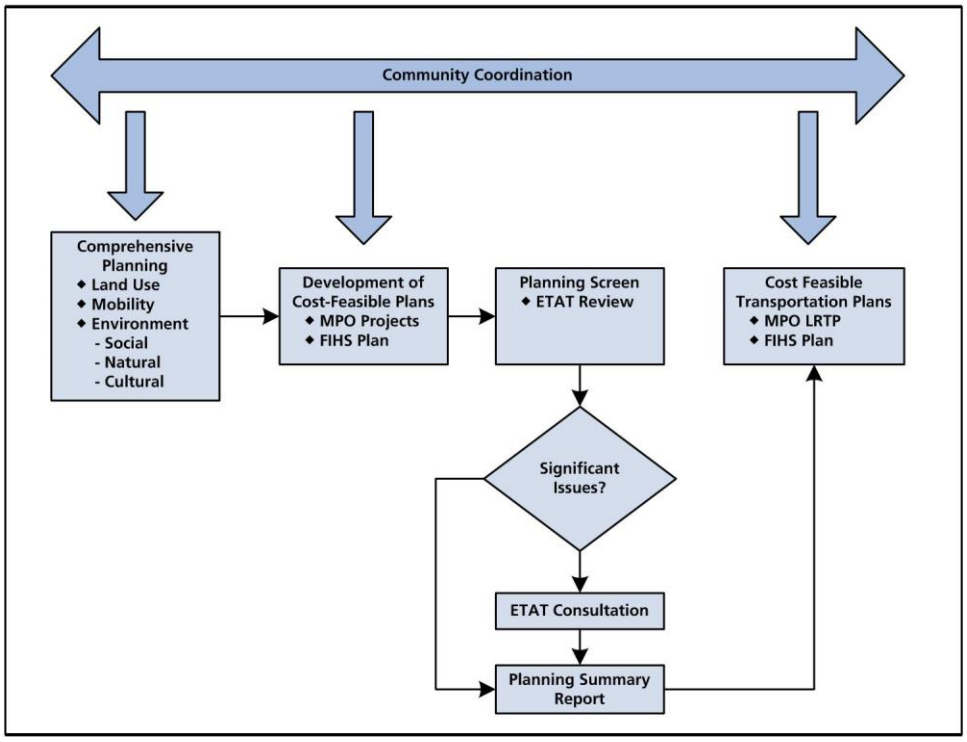


Figure 3

PD&E Process Flow Chart: Programming Screen Phase

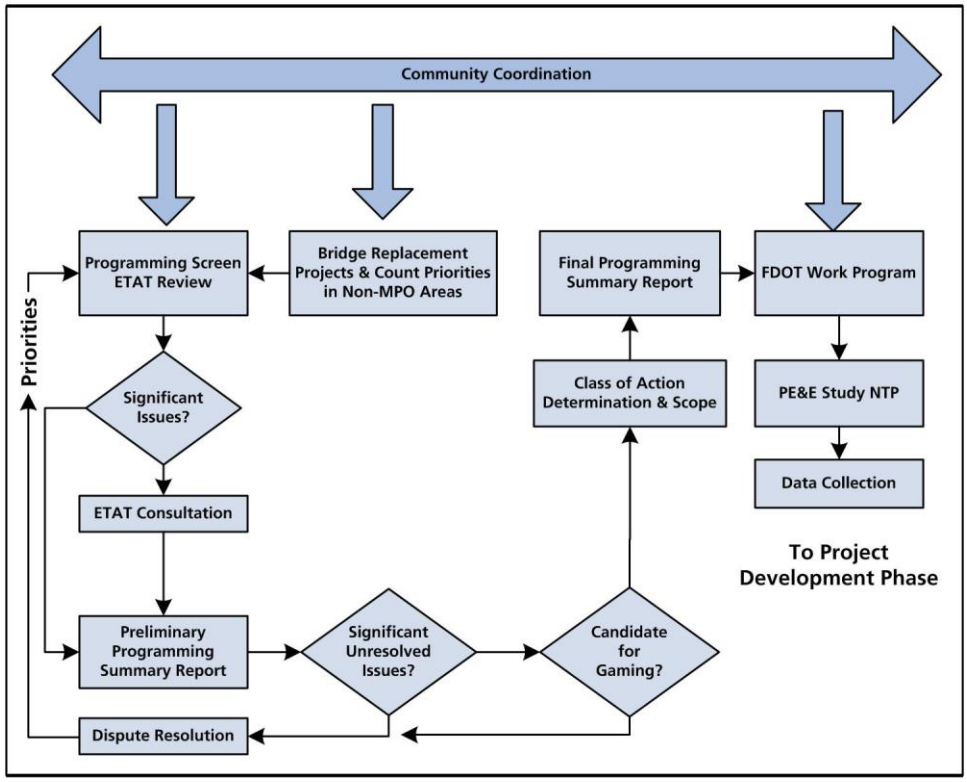
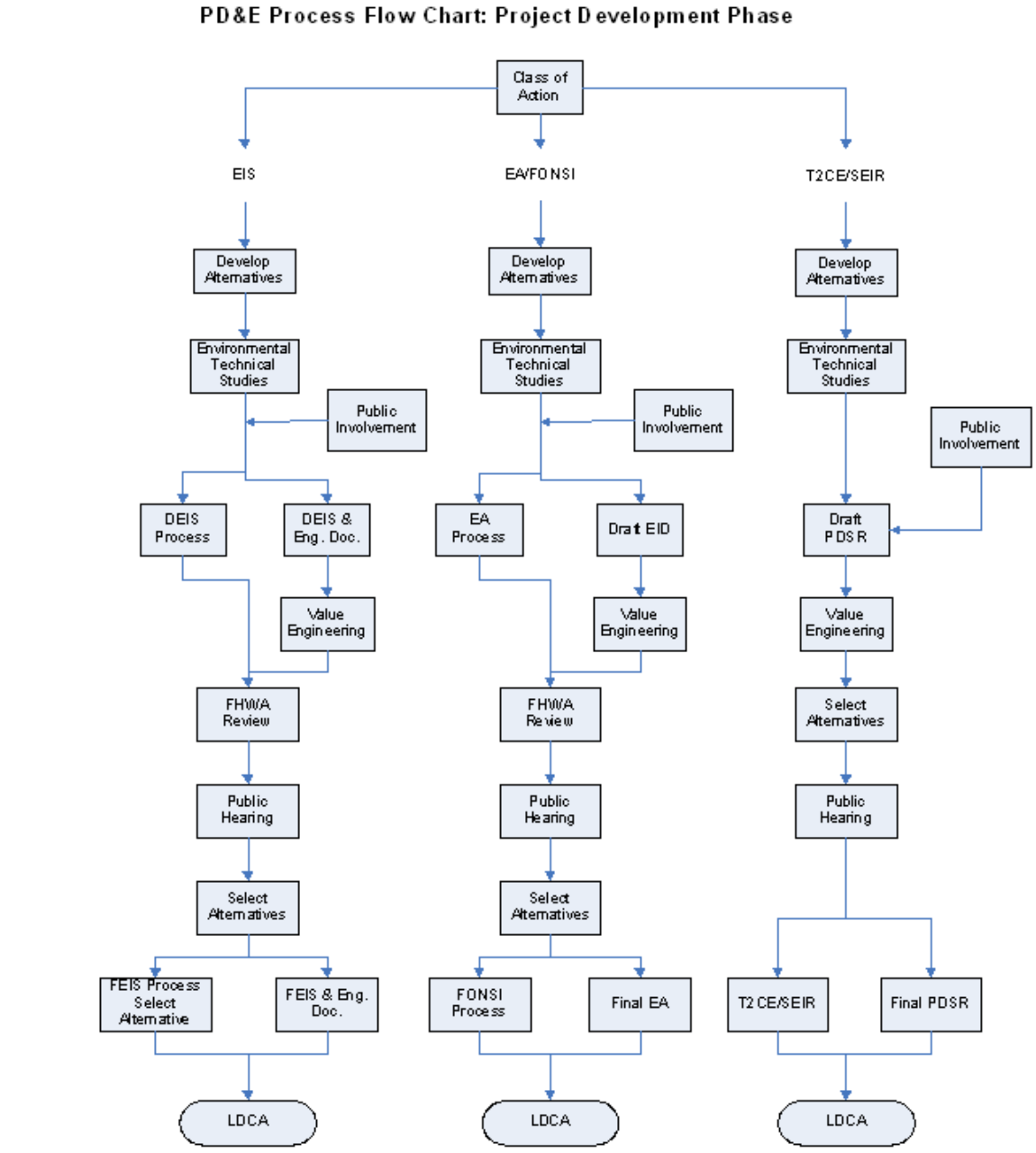


Figure 4



DEIS: Draft Environmental Impact Statement
EA: Environmental Assessment
EID: Environmental and Engineering Document
EIS: Environmental Impact Statement
FEIS: Final Environmental Impact Statement

FONSI: Finding Of No significant Impact
LDCA: Location & Design Concept Acceptance
PDSR: Project Development Summary Report
SEIR: State Environmental Impact Report
T2CE: Type 2 Categorical Exclusion