100.0 Introduction

The following chapter explains the purpose of this document, outlines the essential elements involved in the Project Development Process, describes the differences in the three main project classifications, and provides the necessary background information to understand the approach to project management.

101.0 Overview

The Indiana Department of Transportation (INDOT) has developed and implemented a process called the Project Development Process (PDP) that includes regular communication among technical disciplines, results in quality plans, and minimizes cost overruns during right-of-way acquisition and project construction. Depending on project size, complexity, and/or potential impact to the environment, INDOT transportation projects are categorized as Maintenance, Minor, or Major (see Table 1-1). The assigned Program Funds Managers and Project Managers will select one of the three template PDPs based on the project complexity. See Section 106.0 for more information on how to classify a project. The PDP consists of a certain number of steps depending on the project classification.

Table 1-1: Project Classifications, Numbers of Steps, and Responsibilities

Project Classification	Number of Steps	Example Project	Typical Project Management Responsibility
Maintenance	4	Crack Sealing	Districts
Minor	11	Repave / Spot Improvement	Districts or Central Office
Major	12	New Interstate	IPOC and Central Office

Selection of the appropriate project classification is based on the anticipated level of project development complexity. The project classification identifies the recommended level of analysis, amount of stakeholder involvement and activities performed during each step. The PDP is designed to provide the necessary information to equitably and systematically advance the project in a logical sequence from the end of planning to the beginning of construction. See Section 105.0 for information on how to determine if a project should be classified as Maintenance, Minor, or Major.

The PDP transportation decision-making approach provides a seamless process from planning through construction and encourages open communication for making informed decisions during all stages of project development. By involving all disciplines at the earliest stages of the process, issues affecting project type, scope, preliminary development, and cost are identified early.

The PDP has streamlined and changed the sequencing and product order in the process by:

- Encouraging communication among disciplines,
- Requiring documentation of the reasoning behind project related decisions,
- Eliminating duplicated effort among disciplines,
- Providing for early identification of potential Red Flag issues, and
- Insuring that work products are completed as early in the process as possible.

As a project moves through the PDP, it is the intent that the PM stays with the project to provide consistent direction as the project owner; the project knowledge that the PM gains during the development may then prove invaluable during construction. This manual identifies the lead and supporting disciplines for each step.

This manual contains detailed sections on Major, Minor, and Maintenance Projects, several appendices, a glossary, and a list of acronyms. The manual provides guidelines to identify activities required during each step of project development. The project scope determines the amount of work performed within the steps. Although the manual identifies work tasks and potential stakeholders for each step in the

process, the process requires coordination of people and tasks between steps to ensure continued review and study of the best possible options.

The PDP is a project management and decision-making process for transportation projects. The process is a guide that defines project development phases from project concept through completion. The PDP encourages a seamless transition between project development phases while providing effective and efficient project management.

Communication and transition among disciplines are critical to a project's success. By establishing communication opportunities and responsibilities throughout the PDP, the Project Manager ensures that those involved in the project fulfill their project commitments. The discipline lead for each step is responsible for ensuring appropriate coordination and involvement of other disciplines.

102.0 Project Manager

To facilitate an integrated approach, the project sponsor selects and assigns the Project Manager. The Project Manager uses a number of project management tools to move the project through the PDP. Such tools include meetings, Gantt charts, and a Project Commitments Summary. These tools and their usage will be discussed throughout the course of this document.

All projects should have a dedicated Project Manager. INDOT will assign a staff member to this leadership role. For Major Projects, INDOT will assign the role of Project Manager to a member of the Production Management Division's Office of Project Management. For Minor and Maintenance Projects, the Project Manager will depend on the type of project and the location of the project. In most cases, the Project Manager will reside at the District Office for these projects. When feasible, for project continuity, the Project Manager should continue through the remaining PDP steps.

The Planning Division's Office of Urban and Corridor Planning and the Production Management Division's Office of Environmental Services will assign a staff liaison to every Major planning study. Because Major Projects must deal with varying issues and stakeholders during the planning process steps, the Project Manager should work closely with the central office staff liaisons to insure that the activities and products fulfill the intent of the planning PDP step.

Some of the main responsibilities of the Project Manager include:

- To verify that the project has been entered into INDOT's Scheduling/Project Management System (SPMS) and an associated Designation Number (Des Number) has been established.
- To verify that the project's development funding is approved in the Transportation Improvement Plan (TIP) and the Indiana State Transportation Improvement Plan (INSTIP).
- To develop the business case for the project if contracted consultants are anticipated for the development.
- To work with the project sponsor to identify a Project Design Team who will be responsible to complete the work required by the PDP.
- To begin and maintain a project file in which to document all project activities and products, and to continue to communicate and coordinate with the designated INDOT staff throughout the project. This project file may be supplemented by the corresponding files from other offices as needed.
- To identify the degree of involvement with the Federal Highway Administration (FHWA). In other words, determine whether the project has FHWA-Oversight or INDOT-Oversight.

The INDOT Project Manager should initially hold a "kick-off" meeting involving Project Design Team members and all appropriate stakeholders (see Section 107.0). Stakeholders may include a variety of INDOT district and central office disciplines, FHWA, representative(s) of affected local government(s) such as a city or county engineer, the local transit agency, a Metropolitan Planning Organization (MPO)

representative, and other local groups (representatives from minority or low income populations as well as civic or business groups that may be uniquely affected by the project). Attendees should discuss the project from their perspective so that all begin the Project Development Process with a common understanding of project issues and transportation needs and goals. This may not be necessary for most Maintenance Projects.

Recognizing that this level of understanding may change as more information becomes available, the meeting attendees determine the level and intensity of public involvement needed, define the general work requirements, develop an initial scope of work for the planning study (if applicable) and schedule or may even develop the Request For Proposal (RFP) needed to hire a study consultant. The goal for the "kick-off" meeting is to make sure all stakeholders are identified and in general agree on how to progress through the PDP.

103.0 Initial Identification of Projects

Indiana's transportation system needs are assessed and prioritized to determine which projects will be funded. There are numerous documents that address and prioritize transportation problems or needs. These documents include, but are not limited to:

- Annual Program Development Process (APDP)
- Long-Range Transportation Plans of INDOT and the various Metropolitan Planning Organizations (MPOs)
- INDOT Planning Oversight Committee (IPOC)
- District Work Plans
- Corridor Studies
- Legislative Mandates
- Pavement Management System
- Bridge Management System
- Maintenance Quality Survey
- Safety/Congestion Program

Transportation projects originate from a wide variety of sources and studies, such as those listed above, before Step 1. The Funds Management Committee reviews the State of the Transportation System Report to identify priorities and determine how to allocate the available budget to different INDOT programs. If funds are available, projects are included on the Indiana Statewide Transportation Improvement Program (INSTIP) and/or the MPO Transportation Improvement Program (TIP) and advance through the PDP.

Beginning the PDP assumes the need for a transportation improvement but does NOT assume the specific facility or project to be constructed. The PDP begins with a project level planning analysis completed by the Planning Division's Feasibility Engineering Section and presented in the Initial Project Assessment to determine a potential solution(s) in order to determine the right size of the scope, schedule, and budget to solve the identified transportation problem. This determination is to be completed before time and money is expended to advance extensive environmental analysis, design, or to construct a specific facility.

Funding budget allocations for the entire project's funding phases includes Preliminary Engineering (PE), Right-of-Way (RW), and Construction (CN). PE budget allocations should include design engineering, geotechnical engineering, as well as right-of-way engineering and services. RW allocation budgets are only those moneys needed for purchasing right-of-way. CN budgets should include all construction items, utility costs, any mitigation measures, inspection, as well as railroad expenditures. The initial costs should be determined by the Planning Division's Feasibility Engineering Section and documented in the Initial Project Assessment.

For most projects at the beginning of the planning process, the Program Funds Manager should enter as much information as possible into SPMS in order to generate a Des Number for study, research activities, and the potential project. While still in the conceptual state, a project is entered into SPMS in "Proposed" status. A proposed project can be used as a placeholder for up to 6 months and contain committed funding estimates and even a committed award date. However, the proposed project does not yet have a completed scope of work. Once the proposed project is approved by the appropriate office, development can begin.

Once a project is approved to begin development, the project status in SPMS will be changed to "Active". The minimum information required for active status is a committed award date and project budget allocation. Milestone dates and cost estimates will be added and updated as a project becomes active and proceeds through the PDP. The SPMS Training Manual provides additional details about tracking projects.

104.0 Federal Oversight Determination

All Major Projects (and some Minor and Maintenance Projects) will likely require oversight by the Federal Highway Administration (FHWA). The PDP requires this determination during Step 1.

In general, FHWA is to be given the option to have project oversight on any Interstate reconstruction project that is estimated to cost more than $1 million on 4R projects or $5 million on 3R projects. Also, FHWA is to be given the option to have project oversight on any project that costs over $100 million. The responsibility for determination and documentation of the need for federal oversight, with the assistance from the Project Manager, rests with the Production Management Director for Major Projects and the District Production Director for Minor and Maintenance Projects, after consultation with FHWA.

Details of this determination and involvement can be found in the Indiana Design Manual, Section 40-7.0. It is also documented in the Stewardship and Oversight Agreement between INDOT and FHWA.

105.0 Project Classifications

The Project Development Process categorizes transportation projects into Maintenance, Minor, or Major. Table 1-2 at the end of Section 106.0 presents the process steps by project classification. The graphical figures in Appendix A show additional information on the PDP steps and activities. Selection of the appropriate project classification is based on the anticipated level of project development complexity. The project classification identifies the recommended level of analysis, amount of stakeholder involvement and activities performed during each step. The PDP is designed to provide the necessary information to equitably and systematically advance the project in a logical sequence from the end of planning to the beginning of construction.

106.0 Project Definitions

An INDOT project is categorized into one of three classifications: Maintenance, Minor, or Major. Each of these classifications is defined in the following sections.

106.1 Major Projects

A Major Project is defined as a transportation improvement where the anticipated result of the improvement is expected to involve one or more of these instances:

- Has a substantial impact to public access, level of service, traffic flow, or mobility patterns.
- Require substantial right-of-way acquisition.

- Has substantial public controversy.
- Has significant environmental impacts.

Additionally, this classification applies to each roadway transportation improvement that will require a substantial financial investment to complete all aspects of project development. This type of project typically involves one or more of these situations:

- Making substantial alterations to the existing roadway (e.g., lane addition).
- Relocating a major portion of a roadway (e.g., major change to horizontal and/or vertical alignment).
- Developing a new roadway alignment (e.g., bypass).
- Constructing a new or major modification to an existing interchange.

INDOT's definition of a Major Project should not be confused with FHWA's definition of a Major Project. FHWA defines a Major Project as being over $100 million and requires the development of a detailed Financial Plan and, when the project exceeds $500 million, a detailed Project Management Plan.

From the planning perspective, a Major Project will typically include (but not be limited to) a project that involves MIS (Major Investment Study) type issues, a project that requires intensive environmental studies, or a project in which costs exceed $10 million or the project length exceeds one mile. This does not apply to a resurfacing project or other maintenance type project that exceeds one mile that would otherwise fit into the Maintenance Project classification. It is possible for a Major Project to require little to no new right-of-way (e.g., Interstate route widening within existing right-of-way).

From the National Environmental Policy Act (NEPA) and environmental perspective, a Major Project involves the potential for substantial environmental impacts. This type of project is typically located on a new alignment but could include any project type that might impact a high-quality environmental resource, require agency coordination at several decision points in the PDP, or have substantial public controversy. Context and intensity of impacts should be considered when addressing an impact on a resource. A Major Project for NEPA typically requires an Environmental Impact Statement (EIS) or Environmental Assessment (EA) but also can include that which requires a Categorical Exclusion (CE). However, if a project will require an EIS or EA, it will be classified as a Major Project.

From a design perspective, a Major Project is one in which new roadway alignments or substantial alterations to existing roadway alignments will result in the examination of multiple alternatives as a necessary and systematic progression to selecting the preferred alternative.

Sometimes a project (with only a few viable alternative solutions to be studied) can appear to be Minor based on environmental impacts. A project can be Minor in scope but it still can be controversial. In such a situation, it may be advantageous to follow the Major PDP relative to the preliminary engineering components. This will allow for a graduated progression of plan development activities through several steps of the PDP rather than covering all preliminary engineering work in a single step under the Minor PDP. This will help to avoid unnecessary plan rework. It is possible for a project to transition from one classification to another. This is discussed further in the latter sections of this chapter.

106.2 Minor Projects

A Minor Project is defined as a transportation improvement that generally is located on an existing alignment. Small adjustments to the existing alignment to improve geometric conditions may be involved. Minor alterations of a non-Interstate roadway that does not result in significant environmental impacts also can qualify as a Minor Project. A Minor Project may have environmental impacts. These impacts can be analyzed and approved through the EA or Categorical Exclusion process. Refer to the Procedural Manual for Preparing Environmental Studies prepared by the Production Management Division's Office of Environmental Services for more details.

Examples and thresholds for environmental impacts are included in the Procedural Manual for Preparing Environmental Studies. A Minor Project can involve right-of-way acquisitions, utility relocations, altering the roadway's cross section, and raising or lowering the roadway profile.

Examples include:

- Bridge replacement rehabilitation including deck overlays
- Culvert replacement
- Pavement Replacement
- Added travel lanes with minor environmental impacts
- Pavement widening
- Pavement rehabilitation
- Geometric realignment
- Intersection upgrades including the addition of turn lanes
- All other spot improvements

106.3 Maintenance Projects

A Maintenance Project is defined as a transportation improvement generated by the traditional maintenance and preventive maintenance program as they relate to the development of the District Work Plan. This type of project:

- Does not alter the basic roadway cross section or geometry.
- Requires no additional right-of-way.
- Has minimal or no impacts on existing utilities.
- Has minimal or no impacts to environmental resources.
- Requires minimal or no environmental agency coordination.
- Is likely to require only minor public involvement.

Examples include:

- Guardrail replacement where roadway ditches and backslopes will not be relocated.
- The replacement of traffic signals, provided that no work occurs within any historic district (or adjacent to a historic property), and there is no likelihood of encountering contaminated materials.
- Traffic signal maintenance.
- Pavement drop-off repair.
- Mowing, trimming, or brush removal.
- Herbicidal spraying.
- Installation or maintenance of signs, pavement markings/raised pavement markers/sensors, or replacement fencing.
- Bridge superstructure repair and other maintenance activities including bridge painting projects, provided the project does not involve work within streams, rivers, scenic river corridors, historic properties, or involve a bridge listed or eligible for inclusion of the National Register of Historic Places.
- General roadway maintenance, including filling pot holes, crack sealing, mill and resurfacing, joint repair, shoulder reconstruction, and minimal bank stabilization.

Table 1-2: Project Classifications and Corresponding Processing

Project Classification		
Maintenance	**Minor**	**Major**
Step 1: Project Compilation (Data Management and Inspections)	*Step 1:* Professional Services (Contracts and Agreements)	*Step 1:* Professional Services (Contracts and Agreements)
Step 2: Project Identification (Cost Benefit Analysis)	*Step 2:* Conduct Research and Technical Studies	*Step 2:* Conduct Research and Technical Studies
	Step 3: Identify and Evaluate Conceptual Solutions	*Step 3:* Identify and Evaluate Conceptual Solutions
Step 3: Prioritization of Selected Projects	*Step 4:* Develop Reasonable Alternatives	*Step 4:* Develop Reasonable Alternatives
	Step 5: Identify Preferred Alternatives	*Step 5:* Identify Preferred Alternatives
	Step 6: Stage 1 – Develop Preferred Alternative	*Step 6:* Stage 1 – Develop Preferred Alternative
Step 4: Separate Projects into Project Categories for Submittal	*Step 7:* Stage 2 – Advance Preferred Alternative	*Step 7:* Stage 2 – Advance Preferred Alternative
	Step 8: Environmental Approval	*Step 8:* Environmental Approval
	Step 9: Prepare Final Right-of-Way Plans	*Step 9:* Prepare Final Right-of-Way Plans
	Step 10: Begin Land Acquisition	*Step 10:* Begin Land Acquisition
	Step 11: Stage 3 – Complete Preferred Alternative	*Step 11:* Stage 3 – Complete Preferred Alternative
	Step 12: Prepare Final Tracings Package	*Step 12:* Prepare Final Tracings Package

107.0 Stakeholder / Public Involvement

Stakeholder involvement is essential for every step in the PDP, especially for Major Projects. Stakeholders provide information and offer a unique perspective in identifying the problem and what changes or improvements are needed to have a successful project. Stakeholder involvement is also required by FHWA during the planning and environmental processes. See the following for details on how to identify and involve stakeholders and how to conduct successful public involvement.

- Public Involvement Procedures Manual
- Procedural Manual for Preparing Environmental Studies
- 23 CFR 200.9

Stakeholders are individuals and groups who are or may be impacted by or have an interest in the project. In some cases, federal regulations define who stakeholders are. Typically stakeholders include professional and technical staff from INDOT and affected local governments and agencies, elected and appointed officials, the general public, as well as people, businesses, and environmental justice populations in the project area. Stakeholders for environmental justice include low-income and minority populations within the study area. Demographic analysis conducted in Step 2 should be used to identify environmental justice populations. The text box on this page highlights typical stakeholders.

108.0 Public Involvement Plan

Examples of Stakeholders:

- INDOT
- District Offices
- Federal Highway Administration
- Federal Transit Agency
- Local Transit Agency
- Metropolitan Planning Organization
- Local Public Agency
- Civic and Community Associations
- General Public
- Environmental Justice Populations
- Resource Agencies
- Special Interest Groups

Every project must have a documented Public Involvement Plan (PIP). The Project Manager is responsible for developing and implementing the PIP. Often, on Major Projects, a separate INDOT staff person or consulting firm may be designated and responsible for developing, managing, and implementing the PDP related communication and PIP activities. It should be noted that if the environmental review is in the form of an EIS, then the PIP will be a component of the Coordination Plan as required by SAFETEA-LU.

The PIP outlines the strategy and responsibilities for informing and involving stakeholders during the planning phase and all the steps of the PDP. Detailed discussion of how to develop and implement a PIP is presented in INDOT's Public Involvement Procedures Manual.

PIP development should begin during the "kick-off" meeting and should evolve as the stakeholders have an opportunity to comment and contribute ideas to it. Technically, the PIP continues through construction and may need to be revised periodically to address changing public and stakeholder concerns and needs.

The PIP can include a mix of informational meetings, newsletters, web pages, special events, educational handouts and booths at a local event, or more formal meetings. The magnitude of the project should be the guide to the extensiveness of the PIP. In general, the PIP should:

- Define and describe public involvement actions, activities, and publications to be conducted in each step in the PDP.
- Define the strategy to engage and solicit information, ideas, and opinions from stakeholders (for example, the stakeholders' definition of the problem and idea of an acceptable solution).
- Explain how stakeholders' ideas and opinions will be incorporated into the PDP decision-making process.
- Identify the actions and approaches to inform stakeholders about the problem being studied, potential project alternatives under evaluation, and rationale for eliminating alternatives.
- Identify responsibilities for managing and implementing the actions requested and the responses given by the stakeholders, and identify the timing and funding mechanisms for the public involvement activities.
- Clarify how, where, and who will implement and document the activities, actions, and materials used during the process.

The PIP should be flexible. It should be dynamic enough to adjust to concerns and interests of stakeholders, yet detailed enough to provide stakeholders with communication details such as how, when, and where to expect to hear project status reports and be involved. The PIP likely will be made up of a variety of public involvement approaches, activities, and forms. No single approach or activity will work to involve all stakeholders, nor will any single action neutralize all sources of opposition. Mixing and matching approaches is recommended. For more information on developing a PIP, see INDOT's Public Involvement Procedures Manual. The Planning Division's Office of Urban and Corridor Planning and the Production Management Division's Office of Environmental Services have, prior to publication and distribution, review and approval authority for the Public Involvement Plan for Major Projects.

109.0 Project Meetings

Project meetings should occur at critical times throughout a project's development. Each project should have an initial "kick-off" meeting.

- For Maintenance Projects, the District Work Plan can serve as the project "kick-off".
- For Minor Projects, the initial meeting might include a discussion of several projects in one setting for ease of gathering key players.
- Major Projects usually require project specific meetings.

The "kick-off" meeting would define key personnel and the lead person responsible for each discipline at each step of the PDP. Additionally, this would be the time to identify other specific items such as the preliminary project schedule, budget, and a draft PIP. In addition, a transition meeting is required at the end of some steps to facilitate a smooth transfer of responsibility as a new discipline takes over project responsibility.

110.0 Objectivity

Federal law (23 USC 112g) requires the state to assess the objectivity of the environmental process in instances where a consultant has been selected to provide both environmental evaluations and design services. INDOT commonly follows this practice based on the integrated process of the PDP.

INDOT has integrated this objectivity assessment into the PDP. Every step of the PDP and concurrence point is thoroughly reviewed by INDOT and resource agencies as appropriate, and subjected to public scrutiny. INDOT's PDP carries this point a step farther by ensuring that decisions are not made "in a vacuum" or without taking into consideration other viewpoints. With PDP, INDOT looks at discipline specifics prior to decisions being recommended. This is done regardless of whether INDOT staff or consultants perform the work.

Even though consultants are performing preliminary engineering work and environmental assessment activities, consultants are working under the close direction of an INDOT Project Manager. Work progress and products come under INDOT scrutiny and approval regularly.

INDOT's review on any environmental/design product is interdisciplinary. In fact, many of INDOT's products in the PDP are jointly reviewed by all disciplines. This process carries on to the agencies with which INDOT coordinates, since many of INDOT's reviews are completed jointly with resource/regulatory agencies.

For these reasons, INDOT and the FHWA Indiana Division Office have determined that when a project follows the Project Development Process, an individual objectivity review is not required.

111.0 Gantt Charts

INDOT has developed a schedule for each classification of project (Major, Minor, and Maintenance). Each schedule is in the form of a Gantt chart. Sample charts are located in Appendix E. Gantt charts when used in conjunction with SPMS enable Project Managers to monitor project development, allowing early identification of potential problems and facilitating the timely delivery of the project. Every project will have a chart and the Project Manager will use the template chart to create a project-specific chart. Each chart has built-in activities at specific points in the Project Development Process. Monitoring these specific activities will help the Project Manager update the schedule as needed. Gantt charts identify:

- Each step and its associated tasks
- Duration of the time necessary to accomplish each task
- Predecessor and successor tasks

A Gantt chart is a critical communication and coordination tool that keeps each discipline abreast of the project status and the input requirements. Likewise the Gantt Charts can be used in the Coordination Plan required by SAFETEA-LU 6002 requirements as the project timeframes.

112.0 Project Commitments Summary

The Project Manager is responsible for establishing a Project Commitments Summary. This document identifies commitments to be made during the PDP. The Project Commitments Summary serves as a road map for information located in the project file and documents responsibilities for carrying out any commitments made during the process. If the Project Manager changes during the life of the project, the Project Commitments Summary is transferred to the new Project Manager as documentation of the project's history.

113.0 Related Manuals

In addition to the PDP Manual, INDOT has related guidelines and manuals to provide technical detail on specific processes and the expectations for particular studies, analyses, and efforts. These technical manuals provide detailed guidance on specific project-related issues. A listing of INDOT manuals may be found in Appendix D, or on the INDOT website at **http://www.state.in.us/dot/business/index.html**.

114.0 Roles and Responsibilities

For district developed projects, the District Planning and Programming Director, in collaboration with the District Production Director, are responsible for classifying transportation projects as Major, Minor, or Maintenance. For central office developed projects, the Project Manager will work in collaboration with the Production Management Director and the Planning Director to classify transportation projects as Major, Minor, or Maintenance. Prior to selecting the project classification, the Project Manager should broadly define general project conditions, possible impacts, limiting constraints, and possible solutions in an effort to assist in making the appropriate initial project classification selection. It is important to remember that project-specific conditions and circumstances often dictate the approach taken when making the selection for each individual project.

115.0 Flexibility

Several factors need to be considered when determining whether a project is classified as Major, Minor, or Maintenance at the beginning of project development. There is an important concept to understand:

> **After the initial classification is selected, it can be changed in subsequent steps if the information gathered up to that point identifies the need for a classification adjustment in order to reflect the necessary level of intensity to satisfy project development requirements.**

It is crucial that when a project classification adjustment is identified, it should be conducted as early in the process as possible and effectively communicated to allow all subsequent PDP activities to properly react to the adjustment. There may be situations where additional planning studies must be performed even though the recommended conceptual alternatives lack anticipated environmental impacts that require a Major environmental study.

For these reasons, it is important to understand that the PDP allows for flexibility in the level of work performed in order to satisfy the respective PDP requirements during each phase of the process. It is recommended that the project classification be revisited after the conceptual solutions have been identified to determine if it is appropriate to continue using the original classification for the next phase

(environmental and design) or to reclassify the project to fit anticipated development requirements. Remember that the initial project classification is based upon limited information and relies largely on previous project experience. However, the flexibility for this form of reclassification is desirable provided the selection of the initial project classification is based on the best available information at the time and its quality improves as the project advances.

116.0 Transitioning Between a Major and Minor Classification

An example of a project transitioning from a Major to a Minor Project classification is a complex interchange reconstruction or modification in an urban area. For planning, this type of project could require substantial time and costs to conduct traffic studies and engage in public involvement. Yet, the recommended conceptual alternatives could result in a project that involves only reconstruction and widening of the existing facility. In this example, the project is classified as a Major Project (Steps 1 through 2 of the Major PDP) during the planning process. When it proceeds into the environmental phase, it meets the Minor Project definition and subsequently follows Steps 3 and 4 of the Minor PDP.

Transitioning from the Major or Minor process to the other should happen rarely, but may be most evident during the review of the Assessment of Reasonable Alternatives. This document brings conceptual alternatives to a level of design and environmental analysis to identify critical issues that may require a shift from one process to another more practical approach.

If the project is not an INDOT-oversight project or does not qualify for a Categorical Exclusion Level 1, a necessary NEPA document will be a higher-level CE, an Environmental Assessment (EA), or an Environmental Impact Statement (EIS). The decision on which of these environmental documents apply should occur upon completion of Minor Project Step 2. If the appropriate NEPA document is an EIS, the project is no longer considered Minor. The Major Project process must then be followed for the remaining PDP steps.

117.0 Projects that Could Fit More than One Classification

A project could fit more than one classification, for example, either as a Major or a Minor Project, or as a Minor or a Maintenance Project. If this occurs, it is recommended that the higher classification be selected. Experience has shown that it is more effective to reduce the level of detail necessary to complete the assignment if the project is moved from a higher to a lower classification, than it is to add detail if it is moved from a lower to a higher classification. However, it should be noted that the activities performed during the detailed design and construction steps of the PDP — while they might range from simple to complex in the technical expertise required — typically are not the controlling factors considered when determining a project's classification.

118.0 Steps and Activities for the PDP

The following three chapters describe the Project Development Process for Major, Minor, and Maintenance Projects, respectively. Key steps are outlined, and individual activities and sub-activities are explained. Specifically, each activity will state:

- What is the work to be done?
- Who performs the work?
- What is needed to complete the work?
- What must occur before work can begin?
- What is the product or deliverable that comes from the work?

The stakeholders involved in each activity are identified, areas of public involvement are indicated, and instances of IPOC Concurrence are detailed. Please refer to the PDP Gantt Charts in Appendix E.

200.0 Major Projects

The following chapter describes the Project Development Process for Major Projects. Key steps are outlined, and individual activities and sub-activities are explained. Specifically, each activity will state:

- What is the work to be done?
- Who performs the work?
- What is needed to complete the work?
- What must occur before work can begin?
- What is the product or deliverable that comes from the work?

The stakeholders involved in each activity are identified, areas of public involvement are indicated, and instances of IPOC Concurrence are detailed. Please refer to the Major PDP Gantt Chart in Appendix E.

Step 0 System-Wide Analysis / Project Identification / Draft Purpose and Need

Project candidates can be identified through statewide system analysis completed by the Office of Urban & Corridor Planning, District Planning Offices or by local government or constituent requests. The Office of Urban & Corridor Planning is responsible for analyzing current and future transportation mobility needs and scoring/prioritizing projects in the "Major New" project program. Some proposed project candidates are discarded after various levels of analysis if no need is found. However, if a project is determined to have sufficient statewide system need, the office prioritizes it and presents it annually to the INDOT Planning Oversight Committee (IPOC) for approval of the initial schedule delivery and budget of each fiscal year's new projects.

Alternatively, another source of new candidate projects, the Office of Urban & Corridor Planning develops a Long Range Plan that looks at a minimum of 20 years into the future according to US DOT Statewide Planning Regulations. INDOT's Long Range Plan focuses on identifying capacity-adding projects. As the projects are identified by the Long Range Planning section within the Office of Urban & Corridor Planning, the Office of Budget and Finance develops the fiscal forecast for the specified 20-25 year period.

Fiscal constraint is then applied to develop a project specific statewide Long Range plan which is approved by the Commissioner. The Long Range plan is used to not only fulfill the CFR and state requirements listed above but also for:

a. Air Quality modeling in non-attainment and maintenance areas throughout the state.
b. Provide information to INDOT customers and legislature about major transportation investments statewide.
c. Provide candidate projects for the Major New – CO program
d. Identify future funding needs of the agency
e. Allows coordination with pavement preservation programs and other infrastructure investments.

Step 1 Professional Services

Task 1.01: IPOC Concurrence – Authorization of Project Identification and Schedule

Most projects will be added to INDOT's 10 year list at the approval of the IPOC committee. The IPOC committee will approve a schedule and budget. At this time, this major project will be transferred to the Division of Production Management (Central Office) and a Project Manager will be assigned a project and associated Des Number.

Note: Some projects with IPOC committee approval will be approved over a shorter planning horizon and not be in the initial 10 year plan.

Task 1.02: Project Manager Assigned

The Office Manager of the Production Management Division's Office of Project Management will assign a member of their staff as Project Manager for an IPOC project. At this time, the Project Manager will accept ownership of the project.

Task 1.03: Prepare Business Case

The Project Manager will develop a business case for an IPOC project. The business case will include the following items:

1) Project Transfer: The Project Manager will work with the Office of Urban and Corridor Planning to transfer or copy all relevant information on this project.

2) Confirm Project Limits: The Project Manager with the Office of Urban and Corridor Planning will confirm the study area and project terminus.

   Defining an adequate study area is critical to project success. The study area size determines the general area for which data is to be collected and from which the stakeholders are to be identified and engaged. The initial study area limits should have been identified from INDOT's Long Range Plan or systems analysis that identified the problem. The study area must be big enough to include all areas that contribute to the transportation problem and encompass the range of alternative solutions appropriate to solving the problem.

3) Draft Purpose and Need Statement: At this time, the Project Manager will confirm the initial purpose and need developed by the Office of Urban and Corridor Planning.

4) Milestone Dates: The Project Manager shall develop the project's milestone dates and review the preliminary cost estimate as prepared by the Office of Urban and Corridor Planning. While there is still no determination of reasonable alternatives or project solutions, there should be enough information to update the magnitude of the construction right-of-way acquisition to develop a cost estimate and provide a milestone of major events.

5) Confirm that the project PE phase is in the TIP and INSTIP.

Task 1.04: Conduct Red Flag Summary

The Project Manager will request that a representative of the Office of Environmental Services and other Production Management Division staff as appropriate conduct a Red Flag summary for this project. Red

Flags, including environmental, right-of-way, utility, and engineering issues, are locations of concern within the study area. Red Flags do not necessarily identify locations that must be avoided, but rather identify locations that may entail additional study coordination, creative management or design approaches, or increased right-of-way or construction costs. Locations that must be avoided are considered and referred to as "fatal flaws". A "fatal flaw" could involve significant, negative economic, environmental or historical impact in an area. The Project Manager should ensure consultation with the appropriate specialists to determine the level of concern for each Red Flag item.

There are several ways to identify Red Flag locations. It is recommended that the first data source consulted be secondary sources. A site visit is the next level or source for Red Flag analysis conducted during planning. More in depth analysis, requiring additional work such as borings or "digs" are typically conducted during later steps of the PDP. Areas of potential concern are utility locations, existing structures, drainage problems, waterways, geotechnical issues, topography and existing right-of-way and/or land use issues.

The appendix contains a sample of the Red Flag summary that can be used to identify potential Red Flags. It is intended as a guide to what items and issues should be considered and addressed in the required "Red Flag Summary Report". For major projects, "Red Flags" must be identified on one of the study area base maps. It is understood that not all information may be applicable to mapping.

Task 1.05: Develop Public Involvement Plan

Stakeholder involvement is essential for every step in the major PDP. Stakeholders provide information and offer a unique perspective in identifying the problem and what changes or improvements are needed to have a successful project. Stakeholder involvement is also required by the FHWA during the planning and environmental processes.

Stakeholders are individuals and groups who are or may be impacted by or have an interest in the project. In some cases, federal regulations define who stakeholders are. Typically stakeholders include professional and technical staff from INDOT and affected local governments and agencies, elected and appointed officials, the general public, people and businesses. Stakeholders for environmental justice include low-income and minority populations within the study area. The following is a list of potential initial stakeholders:

- INDOT
- District Offices
- Federal Highway Administration
- Federal Transit Agency
- Local Transit Agency
- Metropolitan Planning Organization
- Local Public Agency
- Civic and Community Associations
- General Public
- Environmental Justice Population
- Resource Agencies
- Special Interest Groups
- Major Commercial Facilities
- Schools and Educational Institutions

Every major project must have a documented public involvement plan (PIP). The Project Manager is responsible for the development and coordination of the PIP with the Public Hearings Office and the Office of Environmental Services. The PIP outlines the strategy and responsibilities for informing and involving stakeholders during the planning phase and all the steps of the PDP.

For projects being developed as Environmental Assessments (EAs), the INDOT Environmental Policy Administrator will consult with the FHWA Environmental Program Manager to determine which EAs will require a Community Advisory Committee (CAC) and public/agency meeting(s) during the development of purpose and need and alternatives screening. The Office of Environmental Services will assure that these PIP activities are included in the associated project PIPs.

PIP development should be during the "kick off" meeting and should evolve as the stakeholders have an opportunity to comment and contribute ideas to it. Technically, the PIP continues through construction and may need to be revised to address changing public and stakeholder concerns and needs throughout the project.

The PIP can include a mix of informational meetings, newsletters, web pages, special events, educational handouts and booths at a local event, or more formal meetings. The magnitude of the project should be the guide to the extensiveness of the PIP. In general, the PIP should:

- Define and describe public involvement actions, activities and publications to be conducted in each step in the PDP.
- Define the strategy to engage and solicit information, ideas and opinions from stakeholders (for example, the stakeholders' definition of the problem and idea of an acceptable solution).
- Explain how stakeholders' ideas and opinions will be incorporated into the PDP decision-making process.
- Identify the actions and approaches to inform stakeholders about the problem being studied, planning process, potential project alternatives under evaluation, justification for eliminating alternatives, and recommendations.
- Identify responsibilities for managing and implementing the actions, responses, the timing and funding for the public involvement activities.
- Clarify how, where and who will implement and document the activities, actions and materials used during the process.

Task 1.06: Prepare Scope of Services

At the appropriate time (with respect to projects on the long range planning list and schedule), the Project Manager will develop and submit the following to the Division of Contract Administration (CO/CA):

- Request For Proposal Form (RFP) - see Appendix C for form and submittal information.
- Contract Information Form (CIF) - see Appendix C for form.

This request should be placed on the proposed 18 month RFP list and later updated (2 months) before advertisement. Advertisement of RFPs will be monthly. The Scope of Services is written which outlines the intent of the contract. The scope of services will become Appendix A of the Consultant's contract. A brief description of the services and required prequalification for the related work types are included in the advertisement for RFP. These work types cover the work to be performed by the prime consultant and sub consultants.

Engineering Assessment Studies

Develop purpose and need, proposed design guidelines, preliminary alternatives, necessary coordination with public agencies and stakeholders, development of preliminary project costs, etc.

Environmental and Engineering Assessment studies proceed together. Engineering recommendations consider the associated social, economic, and environmental impacts.

Environmental Studies

These studies use the engineering assessment studies. On major projects, the document can be Environmental Impact Statement (EIS) and Record of Decision (ROD) or Environmental Assessment (EA) and Finding of No Significant Impact (FONSI). Public involvement is required with these studies. In-house or consultant staff handles the public involvement phase.

Plan Development

This phase may include the following:

- Topographic Survey Data Collection
- Geotechnical Engineering
- Roadway Design
- Bridge Design
- Traffic Analysis
- Traffic Signal Design
- Sign Design
- Lighting Design
- Utility Relocation and Coordination
- Subsurface Utility Engineering (SUE)
- Right-of-Way Plan Development
- Environmental Mitigation Design
- Title VI Demographic Collection

Real Estate Phase

This phase may include the following:

- Project Management for Acquisition Services
- Title Search
- Value Analysis
- Appraisal
- Appraisal Review
- Negotiations
- Closing (INDOT function)
- Buying
- Relocation
- Relocation Review (INDOT function)

Construction Phase

Construction inspection is normally included in open-ended construction inspection contracts.

The description of the required work will be expanded to provide details, requirements and guidance to the Consultant. The details may provide:

- Project length
- Number of bridges to be replaced/rehabilitated
- Number of small structures
- Number of traffic signals to be designed/modernized
- If some type of geotechnical services are required
- If additional right-of-way/relocations are required

- Construction of mitigation sites
- Any other items

Task 1.07: Advertise RFP

The CO/CA will advertise the RFP for 21 calendar days. During that period of time, they will receive Letters of Interest (LOI) from a list of pre-qualified consultants. The CO/CA will prepare and request scoring or rating of the interested consulting firms.

Task 1.08: Review and Evaluate RFP Responses

The Project Selection Team Leader of the managing office (depending on the project classification) will prepare a team of 3 to 5 members to score the LOI for each item submitted by the interested consulting firms. For Major Projects, the Project Selection Team Leader is typically the Office Manager of the Production Management Division's Office of Project Management.

The scoring team should complete the scoring, signed tabulation form and selection score agreement then submit results to the Project Selection Team Leader, who will tabulate the scoring and rankings and return the results to the CO/CA.

Task 1.09: Recommend and Approve RFP Selection

The CO/CA will submit the scoring to the Consultant Selection Review Committee who will review scoring tabulations, capacity and DBE/MBE/WBE compliance statement and forward recommendations to the Commissioner. The CO/CA will then publish a list of selected firms on the INDOT website.

Task 1.10: Scope Meeting and Fee Preparation

The Project Manager and the CO/CA Consultant Service Section will send notification letters and schedule scope of work meeting with selected consultants. The consultant notification letter will include:

- Meeting date
- Known scope of work
- Appendices A to D for open ended contracts
- Ask for overhead rates, Federal Contract Compliance Manual (FCCM), and audit data
- Certified payroll, billing rates
- Prime and sub-consultants prequalification
- Direct and non-salary costs

At the meetings the Project Manager will provide the following information as available:

- Mini-Scope or Engineer's Report (if available)
- Draft Purpose and Need Statement
- Red Flag Summary
- Other relevant materials or studies

The selected consultant will then prepare and submit a fee proposal to the CO/CA Consultant Services Section. The Project Manager and the CO/CA representative will analyze and comment on the fee proposal.

Task 1.11: Contract Negotiations

The CO/CA Consultant Service Section will negotiate fees with the Consultants. If unable to reach an agreement on the negotiated fees, the CO/CA will contact the next ranked Consultant and will start the scope of work process anew.

Task 1.12: Agreement Preparations

Once the fees are negotiated and agreed upon with CO/CA, the CO/CA Consultant Services Section will fill out the work order request and FMIS form for the FHWA approval for federally funded contracts. After FHWA's approval, the funds will be posted to the proper account.

After funds have been posted, a draft contract will be prepared by the CO/CA Consultant Service Section. It will include predefined appendices that serve specific purposes. This document will be submitted to the CO/CA Document Control Section.

Task 1.13 Agreement Approval and Signatures

The CO/CA Document Control Section will transmit an agreement to Consultants for signatures. The Document Control Section will email the Department of Workforce Development and the Department of Revenue to verify status.

The Document Control Section obtains INDOT signatures on the contract and forwards to the Department of Administration, State Budget Agency and the Attorney General's Office for approval.

Task 1.14: Signed PO Number Assigned / Issue Notice to Proceed

After the signature process, the CO/CA Consultant Service Section will issue a notice to proceed. The Project Manager will update the schedule and verify the TIP and INSTIP status.

Step 2 Conduct Research and Technical Studies

Task 2.01: Initial Technical Analysis

In deciding what data is needed and what should be collected, the Project Manager should consider how stakeholders define the problems or issues and what data is needed to confirm their issues and what data is needed to confirm or quantify the problem from their perspective. The Project Manager should determine the type and level of analyses necessary to clarify the draft purpose and need statement. Typical analysis could include:

- GIS Research
- Utilities
- Traffic modeling and diversion analysis
- Capacity analysis
- Crash data
- Right-of-way impacts
- Geological and environmental
- Geometric analysis

To avoid unnecessary study costs and save time, prior to collecting new data, existing data sources should be collected and reviewed. This may include prior studies, secondary sources and previous reports. This review should include a thorough evaluation of existing aerial photography, geotechnical analysis, travel patterns, system performance, crash data and transportation solutions that have been analyzed and proposed for the area in the past. This review should also identify key areas where available data is insufficient to define or analyze the problem. Only then should new data be collected. Some existing resources for use in technical analysis include:

- Existing INDOT and MPO planning studies
- Transportation and land use plans
- Population figures and projections
- Economic indicators
- Traffic counts and planning level traffic projections
- Origin and destination surveys
- Speed and delay studies
- Geographic Information Systems (GIS) analyses including databases form other state agencies such as DNR, IDEM, geological and cultural resource maps.
- Early Environmental Justice and Title VI/Demographic Evaluation

Task 2.02: Initiate NEPA with FHWA

As required by SAFETEA-LU, INDOT is required to initiate NEPA with the Federal Highway Administration. If the project requires an Environmental Impact Statement (EIS), the Manager of the Office of Environmental Services will draft a letter for the Commissioner of INDOT to send to the Federal Highway Administration Division Administrator, in accordance with the Procedural Manual for Preparing Environmental Studies. This Letter of Project Initiation (LOPI) should include:

- Type of work, termini, length, and general location of the proposed project.
- A list of any other Federal approvals (e.g. Section 404 permits) anticipated to be necessary for the proposed project, to the extent such approvals are known at the outset.
- The timeframe within which the environmental review process should be started.
- The LOPI should be signed by the official authorized to sign EISs for the sponsoring agency or that official's authorized delegate.

LOPIs do not need to be sent for Categorical Exclusions (CE) or Environmental Assessments (EA). The decision whether or not to follow the SAFETEA-LU 6002 requirements for an EA/Corridor Study will be made on a case-by-case basis in consultation with FHWA.

Coordination Plan

SAFETEA-LU requires a plan for coordinating public and agency participation and comment during the environmental review process. The coordination plan should include a schedule for the completion of the environmental review process. Consultation with the participating agencies on the project schedule is required. See Procedural Manual for Preparing Environmental Studies for more information concerning the Coordination Plan. The coordination plan should be fully integrated into the Project Management Plan, if applicable.

Publish NOI

A draft Notice of Intent (NOI) must be sent to the FHWA. This NOI may serve as the LOPI under Section 6002 as long as the information required by Section 6002 is contained in the Draft Notice of Intent. If the LOPI is sent separately from the NOI, the LOPI should be sent to FHWA prior to the NOI. The FHWA will sign the NOI and forward it to the Federal Register for publication.

Task 2.03: Confirm Study Area and Project Termini

The Project Manager with the Office of Urban and Corridor Planning and the Office of Environmental Services will confirm the study area and project termini as a result of the technical analysis.

Task 2.04: Refine Draft Purpose and Need

As per SAFETEA-LU, Section 6002, for projects requiring an EIS, the lead agencies are responsible for the development of the project's purpose and need. In developing the purpose and need, the lead agencies (see SAFETEA-LU Section 6002 for a definition of lead and participating agencies) must provide opportunities for the involvement of participating agencies and the public and must consider the input provided by these groups. The opportunity for involvement must be provided prior to the lead agencies' decision regarding the purpose and need that will be incorporated into the NEPA document. The lead agencies' decision on purpose and need 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. See the Procedural Manual for Preparing Environmental Studies for further guidance.

The Planning Division's Office of Urban and Corridor Planning is responsible for refining the draft purpose and need. The Manager of the Office of Urban and Corridor Planning will assign this task to a member of the Feasibility Engineering Section who will work with the Project Manager to further develop the draft statement. This new draft should be based on initial technical studies, comments from stakeholders, and after the study area and project termini are determined.

During Step 2, the draft purpose and need is a stand alone document. It should be detailed enough to qualitatively and quantitatively define the transportation problems and establish the need for the potential project. The final purpose and need statement will be refined throughout the PDP and become part of the final environmental document for the project.

The draft purpose and need statement is the catalyst for identifying and analyzing reasonable alternative solutions and strategies. It is used to establish evaluation criteria to evaluate alternatives and select the preferred alternative. The draft purpose and need statement should be comprehensive, specific and concise so that decision makers and the public can use it to compare project alternatives against associated impacts. A clear, well-defined statement is also an essential element for successful interagency coordination and communication during the environmental and permitting processes.

Ultimately, the draft purpose and need:

- Defines the transportation problems and needs to the level that independent utility and independent significance can be established (that is, is a usable and reasonable expenditure even if no additional transportation improvements in the area are made);
- Establishes the logical termini and any intermediate control points to address environmental matters on a broad scope;
- Is adequate to evaluate, eliminate, or advance planning level conceptual alternatives; and,
- Does not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.

Task 2.05: Contact Resources Agencies (Initial Early Coordination)

The process of initiating coordination with the resource agencies depends on the level of environmental documentation that is likely required.

Inviting Participating/Cooperating Agencies for Projects Likely to Require an EIS

As per SAFETEA-LU, the lead agencies should send invitations to potential participating and cooperating agencies to become participating or cooperating agencies. The invitation letter to potential participating agencies should include the following information:

- Basic project description and map of the project location.
- A request for the involvement of the agency as a participating agency stating the reasons why the project is expected to interest the invited agency.
- Identify the lead agencies.
- Describe the roles and responsibilities of a participating agency.
- Specify a deadline for responding to the invitation.
- Request a response either accepting or declining the role of participating agency.
- 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 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 fails to respond by the stated deadline or declines the invitation, regardless of the reasons for declining, the agency should not be considered a participating agency.

Invitations need to be sent to the following agencies at a minimum (others may be invited as appropriate):

- DNR..... Indiana Department of Natural Resources
- SHPO ..... State Historic Preservation Officer
- IDEM ..... Indiana Department of Environmental Management
- ISDA..... Indiana Department of Agriculture
- USFWS ..... U.S. Fish and Wildlife Service
- USACE..... U.S. Army Corps of Engineers
- USCG..... U.S. Coast Guard
- USCB ..... U.S. Census Bureau
- EPA ..... Environmental Protection Agency
- FTA..... Federal Transit Administration
- NPS..... National Park Service
- NRCS ..... Natural Resources Conservation Service
- MPO ..... Metropolitan Planning Organization (when applicable)

The invitation to be a participating/cooperating agency will also serve as the Early Coordination Letter. The 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 **SAFETEA-LU Environmental Review Process Final Guidance** for further information concerning this process.

The Project Manager may wish to schedule a site visit to help other agencies to better understand the project. This may also be the best time to initiate any Context Sensitive Solution (CSS) discussion with the appropriate local agencies.

Early Coordination for Projects Likely to Require an EA or a CE

The lead agencies should issue an Early Coordination Letter to solicit input from participating/cooperating agencies. The Early Coordination Letter will include a map of the study area and a description of the proposed action. This request may be included in the Invitation to Participating/Cooperating Agencies. For more information, please refer to the Early Coordination section of the Procedural Manual for Environmental Studies.

Information in the Early Coordination Letter should include:

- Mini-scope
- Draft purpose and need
- Study area and project termini
- Preliminary schedule

Agencies that need to be contacted include at a minimum (others may be invited as appropriate):

- DNR..... Indiana Department of Natural Resources
- SHPO ..... State Historic Preservation Officer
- IDEM ..... Indiana Department of Environmental Management
- ISDA..... Indiana Department of Agriculture
- USFWS ..... U.S. Fish and Wildlife Service
- USACE..... U.S. Army Corps of Engineers
- USCG..... U.S. Coast Guard
- USCB ..... U.S. Census Bureau
- EPA ..... Environmental Protection Agency
- FTA..... Federal Transit Administration
- NPS ..... National Park Service
- NRCS ..... Natural Resources Conservation Service
- MPO ..... Metropolitan Planning Organization (when applicable)

These agencies may have already been contacted or have prior knowledge of this project. The Project Manager may wish to schedule a site visit to help other agencies to better understand the project, especially if the project likely involves an EA. This may also be the best time to initiate any Context Sensitive Solution (CSS) discussion with the appropriate local agencies.

Task 2.06: Collect Traffic Data and Analyze

Current Counts and Traffic Statistics: The Project Design Team will contact the Planning Division's Traffic Monitoring Section to get current counts and traffic statistics.

Forecasting

The Project Design Team shall contact the Senior Traffic Forecasting Technician of the Modeling and Forecasting Section at the Corridor and Urban Planning to request forecasting numbers. The Project Design Team will submit the traffic projection request form to the Modeling and Forecasting Section. It is important to include a marked location map of the study area. The traffic projection request form can be found online at **http://www.state.in.us/dot/div/contracts/design/dmforms/App05-2B.pdf**.

Crash Data

The Project Design Team shall contact the Safety Management Engineer of System Assessment and Planning Section of the Division of Planning to get a password and ID number. Crash Data is available on the State Police website: **http://www.crashreports.in.gov/Public/Home.aspx**.

Task 2.07: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step3 Identify and Evaluate Conceptual Solutions

This is the time in the development of the project where the Project Design Team can evaluate all concepts even though some of the concepts can be quickly eliminated. The available information is limited at this stage of the project and may consist of very little more than the draft purpose and need statement, current traffic counts and aerial photography. The traffic data will be provided by the roadway statistics unit. This data may be somewhat dated and will only include the basic traffic data. The aerial photography or GIS maps are available from the Feasibility Engineering Section.

Task 3.01: Develop Conceptual Solutions

Identification of conceptual solutions should begin with specifying needs to be addressed as identified in the purpose and need statement. The number and range of solutions considered should be appropriate to the identified needs. It is important to continue working with stakeholders during this phase to seek and address their ideas and concerns.

The initial set of solutions should be:

- Broad
- Relate to the purpose and need statement
- Include modal options, transportation demand, management, and mobility options
- Include ideas from stakeholders, resource agencies, INDOT staff, and any current or past consultant studies
- Define and include the no-build option, which is to say that no action is taken to correct identified deficiencies

Task 3.02: Analyze Conceptual Solutions

Using parametric pricing, the cost and practicality of the various conceptual solutions will be determined. All planning studies must include a cost analysis for each reasonable solution considered. This is needed both to compare the solutions and to identify solutions to be eliminated because they are cost prohibitive based on a realistic understanding of what funding may be available. A planning level cost analysis may range from simple comparisons of capital costs to detailed life cycle cost analyses. Capital costs are usually developed from a build cost comprised of estimating typical segments, atypical segments, system-wide elements, and other needs such as real estate costs. Cost estimates should be adjusted appropriately for inflation using a construction cost index. A consistent base year should be used in comparing dollar amounts between solutions.

Task 3.03: Perform Screening of Conceptual Solutions

Establishing evaluation criteria and evaluating the solutions is a multi-phased step that includes:

- Identifying evaluation criteria,
- Developing an evaluation methodology or approach,
- Applying the approach, and
- Presenting the comparison in an easy to understand format.

In identifying evaluation criteria it is strongly recommended that the criteria be defined in quantitative rather than in qualitative terms. This allows data to be generated through analytical techniques that can be duplicated and defended. While quantitative measures are preferable they may not always be practical. When criteria do not lend themselves to quantification, results should be presented in a manner that allows for easy discernment between solutions.

Evaluation criteria must also be directly tied to study transportation goals and objectives, including but not limited to the measures of success identified by the stakeholders, and to the draft purpose and need statement. Some criteria, such as environmental considerations, should only be used as an evaluation type measure on conceptual alternatives that meet the transportation purpose and need. The text box suggests some commonly used evaluation criteria.

Numerous evaluation methodologies exist. They range from simple qualitative approaches to detailed mathematical approaches using data-intensive quantitative analysis. Where an adopted regional, state, or local transportation plan exists, evaluation criteria should be consistent with the goals or objectives of that plan; and if possible, the same measures should be used to make decisions. Stakeholders should be involved in developing the evaluation framework and criteria.

Evaluation Criteria:

- Mobility Improvements
- Operational Efficiency (changes in Volume to Capacity Ratio or Level of Service)
- Safety Improvements (crash rate)
- Access or Accessibility (changes in number)
- Environmental or Engineering Design Issues (Red Flags, Environmental Justice, fatal flaws, extent or number of impacts)
- Economic Development Impacts
- Land Use Impacts
- Residential or Business Displacements (number of each)

INDOT strongly encourages presenting the comparison of solutions in a matrix format. This format has been demonstrated to be easy to understand by most stakeholders. A matrix format includes presenting the solutions on one axis and the evaluation criteria on the other axis. The cells either contain numerical or color-coded comparisons indicating relative differences for each criterion.

Documentation during the solution identification activities identifies all the considered solutions, describes the no-build solution, explains why solutions were eliminated from further consideration, presents estimated costs of the considered solutions, and recommends the conceptual alternative solution(s) to be considered for further evaluation. The solutions documentation should:

- Identify all solutions considered.
- Describe the no-build solution.
- Present very general estimated costs of solutions considered.
- Explain why solutions were eliminated.
- Recommend the conceptual alternative solution or the narrowed list of conceptual alternative solutions to be considered for further evaluation.

The length of the documentation will depend on the project and number of solutions under consideration. For future evaluation, it is helpful to include sections titled “Solutions Considered and Dismissed” and “Preliminary Solutions Carried Forward for Further Study.”

Task 3.04: Develop Feasible Conceptual Solutions

The conceptual solutions that made it past the initial screening are to be developed into presentable concept solutions. The solution may be placed on aerial photographs for presentation. The conceptual solutions should not be actual alignments so these concepts solutions need to be shown as area corridors and should not include any alignment data.

Task 3.05: Prepare Purpose and Need / Conceptual Solution Screening Package Report

The various solutions can now be put into a report form. The report which will start with the purpose and need statement will outline the pros and cons of the various concept solutions; any solution deleted from consideration will require reasons for elimination. The report will need to be approved by the Project Management Team (which should include FHWA, the Production Management Division, the Planning Division’s Office of Urban and Corridor Planning, District Planning and Production, and the local MPO)

prior to presentation to the public and the CAC. This review will involve a formal electronic submission and Project Management Team meeting (for EISs)/conference call (for EAs) to discuss comments. The Project Manager will schedule the public meeting with Public Hearings Office upon approval of the report.

Task 3.06 Hold Public Information Meetings (Purpose and Need / Conceptual Solutions)

The report with the purpose and need of the project and the conceptual solutions are now to be presented to the public and the CAC. The public and the CAC will be provided an opportunity to become involved in the development of the purpose and need and in defining the range of conceptual solutions as well as requesting input on methodologies used to analyze alternatives. The CAC and the public should be encouraged to suggest CSS strategies that should be considered during project development. The public information meeting should be an informal presentation of the various concept solutions seeking the response of the public. The Public Hearings Office will schedule and advertise the meeting. The Designer will write the public meeting minutes and will document the comments of the meeting.

During development of the PIP, FHWA and INDOT will consult to determine if an EA will need a CAC and/or public/agency involvement in development of purpose and need and alternatives screening prior to FHWA approval of the EA for public review and comment. The PIP will also indicate if it is acceptable to combine the public information meetings called for in Activities 31 and 55 into one public information meeting.

This is also an opportunity for the Production Management Division's Office of Public Hearings to distribute Title VI demographic gathering survey as required by 23 CFR 200.9(b)(4).

Task 3.07: Resource Agency Consultation

The various regulatory agencies will be consulted at this point of the project. This review will involve an electronic submission and interagency review meeting/conference call to provide agencies an opportunity to become involved in the development of the purpose and need and in defining the range of conceptual solutions. The appropriate methodologies to be used and the level of detail required to analyze alternatives will be collaborated upon with the agencies. The Purpose and Need/Conceptual Solution Screening Package Report and the public meeting minutes will be provided to the resource agencies. The approved Purpose and Need/Conceptual Solution Screening Package Report will be submitted to the involved regulatory agencies by the Office of Environmental Services, in accordance with the Procedural Manual for Preparing Environmental Studies. The Designer will write the agency meeting minutes and distribute them electronically to the agencies within 5 work days of the meeting.

During development of the PIP, FHWA and INDOT will consult to determine if an EA will need a CAC and/or public/agency involvement in development of purpose and need and alternatives screening prior to FHWA approval of the EA for public review and comment. The PIP will also indicate if it is acceptable to combine the resource agency meetings called for in Activities 32 and 56 into one resource agency consultation meeting.

Task 3.08: Revise Purpose and Need Statement and Screening of Conceptual Solutions

The input from the public involvement and resource agency consultation may alter the purpose and need, result in the elimination of some conceptual solutions, or trigger the development of new ones. This activity and the next three activities can be completed concurrently. The Designer will incorporate input from the public meeting and resource agencies into the report in consultation with the Project Manager.

Task 3.09: Confirm Recommended Design Concept and Scope

This is the point of confirmation. The Project Design Team needs to be sure that all of the proposed concepts will satisfy the purpose and need statement as revised with the input from the public meeting and resource agencies.

Task 3.10: Confirm with FHWA – Type of Environmental Document

The early coordination was completed in Activity 2.05. With the concepts defined, the type of environmental document required should be easily determined. This step can be completed by the formal electronic submittal of the final concept solution report. The final report will be forwarded to Federal Highway for confirmation of type of environmental document.

Task 3.11: Develop Recommended Delivery Strategy

This is the appropriate time to determine if the project should be built under conventional design-bid-build, design-build, or other methods. With consultation of the Project Manager, the delivery strategy will be determined. This will be the final item placed in the concept solution report. The concept solution report is complete.

Task 3.12: Evaluate Consultant

The Consultant will be formally evaluated by the Project Manager. This evaluation will be based on the overall effectiveness of the Consultant in these first activities of the Project Development Process.

Task 3.13: Prepare Scope of Services

If required, the Scope of Services is rewritten which outlines the intent of the contract. The scope of services will become Appendix A of the Consultant's contract. A brief description of the services and required prequalification for the related work types are included in the advertisement for RFP. These work types cover the work to be performed by the prime consultant and sub consultants.

Task 3.14: Contract Modification (Steps 4 and 5)

This step is only required if the scope of work has significantly changed or if the Consultant is not going to remain on the project.

Task 3.15: Update Estimated Project Cost

The project estimate should be updated by the Project Manager with current costs. This project estimate will be calculated using parametric prices. The project estimate should be based on the mean project cost of the viable alternatives. This project estimate should be compared to the previous estimate in preparation of reporting to IPOC.

Task 3.16: IPOC Concurrence – Authorize Funds for Design

The project will be presented to the committee for concurrence. This will be a formal electronic submission which will include the final concept solution screening report and the scope of services.

Task 3.17: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any

update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 4 Develop Reasonable Alternatives

Task 4.01: Develop Preliminary Alternatives

The solutions in Step 3 were just conceptual. In Step 4 the alternatives will be further developed by the Project Management Team. The resources are still limited to existing plans, aerial photography or GIS maps. In this step, the Project Design Team will determine actual alignments or modal concepts and place them on aerial photographs or GIS maps.

Under SAFETEA-LU, 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. After considering this input, the lead agencies will decide the range of alternatives for analysis.

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 opportunity for involvement must be publicized and may occur in the form of public workshops or meetings, solicitations of verbal or written input, conference calls, postings on web sites, 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 required involvement opportunities for purpose and need and range of alternatives may be concurrent or sequential. If the opportunities are concurrent, and if the purpose and need is substantially altered as a result of the public and participating agency involvement, then the lead agencies must consider whether an opportunity for involvement in the range of alternatives that derive from the new purpose and need is warranted. 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 identified as early as possible.

Under SAFETEA-LU, the lead agencies must determine, in collaboration with the participating agencies, the appropriate methodologies to be used and the level of detail required in the analysis of alternatives. Accordingly, the lead agencies must work cooperatively and interactively with the relevant participating agencies on the methodology and level of detail to be used in a particular analysis. Consensus is not required, but the lead agencies must consider the 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.

After the lead agencies have collaborated with the participating agency on the methodologies and level of detail, the lead agencies will make the decision on the methodology and level of detail to be used. As part of the scoping process, the lead agencies should communicate decisions on methodology to the participating agencies with relevant interests or expertise soon after they are made. The lead agencies may define a comment period on the methodology. The results of the collaboration on methodologies and level of detail should be communicated to participating agencies in written form so that any objections can be surfaced as early as possible. See Procedural Manual for Preparing Environmental Studies for further detail.

Task 4.02: Perform Engineering Studies

The Designer will most likely want to field check the area of interest. The Project Design Team will be working from aerial photographs, topographic maps and existing road plans. Crash data and history should be available; the traffic data will likely be just coverage counts.

Task 4.03: Perform Environmental Field Studies

The Designer will be providing the six reports as outlined below. The affected parcel owners within the study area shall be notified prior to carrying out these activities by the party developing the NEPA documentation. The Designer, with assistance from the Office of Environmental Services, will be responsible for mailing out Notices to affected property owners if borings are required.

Sub-Task 4.03.01: Complete Phase 1 Archaeological and History/Architecture Surveys

The Archaeological Survey and History/Architecture Survey are detailed field inspections that seek to locate, identify, and evaluate the cultural resources within a project area. In both cases, the cultural resources that are identified (above or below ground) are evaluated to determine their potential eligibility for listing on the National Register of Historic Places. Archaeological and Historic/Architecture Surveys may include records research, site walkthroughs (with photo documentation), or exploratory subsurface investigations. Varying levels of reports and coordination with resource agencies may be needed depending on the level of investigation conducted.

These reports will be submitted electronically. The survey will be forwarded to the Cultural Resources Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Sub-Task 4.03.02: Complete Phase 1 Level Ecological Surveys

Ecological Surveys must be conducted by qualified personnel and should be commensurate with the scope of the project and as directed by resource agencies. They may include database searches as well as field studies and reports.

These reports will be submitted electronically and forwarded to the Ecology/Permits Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Sub-Task 4.03.03: Complete Environmental Site Assessment Screening

Environmental Site Assessment Screening must be done by qualified personnel. It can include reviews of historical databases to ascertain historical property uses or contamination histories as well as site visits and property owner interviews. A report will be prepared that summarizes findings and recommends further (subsurface) investigation if necessary.

These reports will be submitted electronically and forwarded to the Environmental Policy Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Sub-Task 4.03.04: Complete Relocation Assistance Program Conceptual Survey

The Relocation Survey provides a report of the potential impacts to residences and businesses, the availability of comparable properties, an analysis of the financial impact to the project cost, and other variables that will be taken into consideration for each potential alignment.

The Conceptual Stage Report will be used to develop the preliminary plan that should be forwarded to the Project Manager.

The conceptual Survey and Reports are discussed fully in the Relocation Manual in the Production Management Division's Office of Real Estate.

Sub-Task 4.03.05 Preliminary Air Quality Hot Spot Analysis

Project-level air quality analyses may be necessary for projects that are anticipated to add a large amount of traffic capacity to the system, especially when high volumes of truck traffic are expected (more than 10,000 trucks). As part of the NEPA process, the Environmental Policy Administrator, in coordination with FHWA, will determine whether an analysis is necessary. If any studies are necessary, they will be initiated by and reviewed by the Office of Environmental Services. The results of any studies will be incorporated into the NEPA document.

Sub-Task 4.03.06: Complete Social and Economic Resource Reports

These reports will address possible social and economic impacts of proposed projects, and may include Environmental Justice Assessments, Business Needs Surveys, and other related studies as outlined in INDOT's Environmental Procedural Manual. Studies may be conducted as stand-alone documents or may be incorporated into the overall environmental document. This would be an appropriate time to discuss Title VI requirements under 23 CFR 200.9(b)(4) – demographic data collection – as appropriate.

These reports will be submitted electronically and forwarded to the Environmental Policy Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Task 4.04: Analyze and Screen Preliminary Alternatives

This is the second phase of analysis. The cost analysis will still be parametric as it was in the first analysis. The practicality of the various conceptual solutions due to cost and overall effectiveness will be determined. All planning studies must include a cost analysis for each reasonable alternative considered. This is needed both to compare the alternatives and to identify the ranking of the alternatives. A planning level cost analysis may range from simple comparisons of capital costs to detailed life cycle cost analyses. Capital costs are usually developed from a build cost comprised of estimating typical segments, atypical segments, system-wide elements, and other needs such as real estate costs. Cost estimates should be adjusted appropriately for inflation using a construction cost index. A consistent base year should be used in comparing dollar amounts between alternatives.

Task 4.05: Prepare Preliminary Alternative Screening Package

The screening of the alternatives will now be put into a report form. The report may contain one or more matrix solutions based on the number of criteria. The cost of the project is of course important but other matrix combinations may show a more effective solution to the particular purpose and need of the project. The report will need to be approved by the Project Management Team (which should include FHWA, the Production Management Division, the Planning Division's Office of Urban and Corridor Planning, District Planning and Production, and the local MPO) prior to presentation to the public. This review will involve a formal electronic submission and Project Management Team meeting (for EISs)/conference call (for EAs) to discuss comments. The Project Manager will schedule the public meeting with Public Hearings Office upon approval of the report.

Task 4.06: Hold Public Information Meeting

The report with the preliminary alternatives is now to be presented to the public and the CAC for input concerning defining the range of alternatives as well as requesting input on methodologies used to analyze alternatives. The CAC and the public should be encouraged to suggest CSS strategies that should be considered during project development. This public information meeting should be an informal presentation of the various alternatives seeking the response of the public. The Public Hearings Office will

schedule and advertise the meeting. The Designer will write the public meeting minutes, will document the comments of the meeting, and provide the distribution of Title VI demographic surveys to the public.

Task 4.07: Resource Agency Consultation

The various regulatory agencies will be consulted at this point of the project concerning defining the range of alternatives. The appropriate methodologies to be used and the level of detail required to analyze alternatives will be collaborated upon with the agencies. The review will involve an electronic submission and interagency review meeting/conference call to discuss comments on the preliminary alternative screening package and the public meeting minutes. The preliminary alternative screening package will be submitted to the involved regulatory agencies for review by the Office of Environmental Services, in accordance with the Procedural Manual for Preparing Environmental Studies. The Designer will write the agency meeting minutes and distribute them electronically to the agencies within 5 work days of the meeting.

Task 4.08: Select Reasonable Alternatives with FHWA Concurrence

The reasonable alternatives are identified. The reasonable alternatives are recommended by the Designer with the concurrence of the Project Manager. The selection is submitted electronically for distribution to the Project Management Team for concurrence.

Task 4.09: Environmental Review

The Designer will be responsible for preparing the Environmental Review. All of the following topics are described in the Procedural Manual for Preparing Environmental Studies.

The following information is required for each alternative to start the environmental review:

- Alignments and project termini
- Estimate of corridor widths for each alternative alignment
- Names and addresses of affected property owners (from the Office of Environmental Services or from the County Court House, or from the information already obtained in Activity 46 and/or 64)

The following studies must be completed and submitted to the Environmental Policy Administrator. That person then will distribute the studies to the proper reviewer for review and comment. Refer to the Procedural Manual for Preparing Environmental Studies for more details.

Sub-Task 4.09.01: Complete Phase 1 Environmental Site Assessment

This will be reviewed by the Hazardous Materials Unit Supervisor.

Sub-Task 4.09.02: Complete Preliminary Noise Analysis

This will be reviewed by the Environmental Policy Administrator.

Sub-Task 4.09.03: Complete Farmland Coordination

This will be reviewed by the Environmental Policy Administrator.

Sub-Task 4.09.04: Complete Determination of Effects for Historic Properties

This will be reviewed by the Cultural Resources Administrator.

Sub-Task 4.09.05: Complete Preliminary Air Hot Spot Analysis

This will be reviewed by the Environmental Policy Administrator.

Task 4.10: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step5 Identify Preferred Alternative

Task 5.01: Develop Design Elements for Assessment of Reasonable Alternatives

The Designer will develop the design for the reasonable alternatives. That design will include and not be limited to Horizontal/Vertical Alignment, Typical Section, Intersection Design, Interchange Design and preliminary drainage (open ditch or curb and gutter). The curb and gutter and open ditch design do not need to be elaborate, just enough to establish the approximate construction limits. The Office of Environmental Services may request additional design for roadways near or in environmentally sensitive areas. These design elements should follow all INDOT Standards and Specifications as well as the Indiana Design Manual, in particular, Part V.

This design of the alternatives will assist in selecting the Preferred Alternative.

Task 5.02: Soil Borings at Critical Locations

The Designer will submit the following plan sheets to the Manager of Office of Geotechnical Engineering to request soil borings at critical locations:

- Title Sheet
- Typical Section Sheet(s)
- Plan and Profile Sheet(s) with all bridge and culvert locations marked

Soil borings will be done if the Office of Geotechnical Engineering suspects peat, marshy areas, or karst (sinkholes), and where there will be rock cuts. Also, soil borings are required in urban areas, where some utilities may have large pipelines or cross county towers, and on historical or recreational properties. Soil Borings would be required to insure that the aforementioned facilities do not become unstable when piles are driven or large amounts of cut are required.

Any poor soils discovered from this review should be considered when selecting a preferred alternative.

The Office of Geotechnical Engineering will be responsible for mailing out Notices to affected property owners if borings are required.

This activity is comprised of the following sub-activities:

Sub-Task 5.02.01: ***Field Investigation***

Sub-Task 5.02.02: ***Laboratory***

Sub-Task 5.02.03: ***Engineering***

Task 5.03: Prepare Draft Environmental Document

The Designer will take the findings from the Environmental Review and create the draft environmental document. Details of what is required for a draft environmental document can be found in the Procedural Manual for Preparing Environmental Studies, provided by the Office of Environmental Services.

The draft environmental document will be submitted to the Environmental Policy Administrator, who will then distribute the studies to FHWA and others who may need to review and comment.

This document will give the Designer and INDOT an idea of problem areas or "Fatal Flaws" for the proposed alternatives, if any (e.g. 4(f) Historic Properties or Endangered Species).

Task 5.04: Complete Step 5 Engineering Activities

As the Designer collects Environmental Review information, any known environmentally sensitive areas should be identified so the design of the reasonable alternatives can be updated. Any modifications made due to environmentally sensitive areas should be documented in each environmental review step so that the Office of Environmental Services can give review and comment.

Task 5.05: Hold First Constructability / Risk Analysis and Operations Review

The Designer will prepare the Design Elements for the Reasonable Alternatives and send these plans to the District Construction Engineer, Central Office Construction Field Engineer and Project Manager for review and comment. Construction can identify existence of parallel railroads, high tension lines, major utility conflicts and offer comments on how the project will be built, for example, multiple contracts and/or phasing of the project. This information will be returned to the Designer and forwarded to the INDOT Project Manager.

Task 5.06: Reasonable Alternatives Value Engineering Study (> $25 Million)

A Value Engineering Study is typically performed after completion of the Assessment of Reasonable Alternatives. Value Engineering is a systematic analysis by a multi-discipline team which identifies the functions of a project, establishes the worth of that function, generates alternatives through the use of creative thinking, and identifies ways to provide the needed functions at the lowest overall cost. Value Engineering studies must be performed on all projects having a total cost (including design, right-of-way, and construction) in excess of $25 million. These studies may also be performed on projects involving complex items or whose costs have increased substantially since initial estimates were developed. CSS strategies can also be discussed at this time to determine if they are practicable.

A Constructability Review will be conducted as part of the Value Engineering Study. This review is intended to cover the following areas: right-of-way, environmental, geotechnical, utilities, site plan and profile, drainage, structures, maintenance of traffic, construction completion date, construction project phasing and access, and overall bid-ability and build-ability of the project

Task 5.07: Analyze and Screen Reasonable Alternatives

The Designer will submit the Reasonable Design Alternatives after all environmental and construction comments have been addressed to the Feasibility Section Manager. That person will then evaluate the alternatives with FHWA. It is important to remember to seek input from the Community Advisory Committees (CACs) and other local officials and/or stakeholders during this process, especially regarding possible CSS strategies.

Task 5.08: Identify Preferred Alternative

After the reasonable alternatives have been analyzed and screened, the Feasibility Section Manager will identify the Preferred Alternative with the help of but not limited to the INDOT Project Manger, FHWA, the Designer, the Environmental Policy Administrator, the Manager of the Office of Urban and Corridor Planning, the District Planning Administrator, and any required help from the Office of Production. The selection of the preferred alternative will be made by holding a meeting with the previously identified individuals.

Once the preferred alternative is chosen a short report, including a new cost estimate per contract or phase, will be produced by the Feasibility Section Manager and presented to the IPOC committee for approval (refer to Activity 79).

Once the preferred alternative is selected, the Designer will complete the draft environmental document and submit it to the Manager of the Office of Environmental Services who will review the document and distribute it to others for review.

Task 5.09: Initiate Biological Assessment (BA)

Once the preferred alternative is chosen, the Designer should initiate the biological assessment (BA) for the preferred alternative corridor. When the BA is complete, the Designer should submit the BA for review and comment to the Ecology and Waterways Permit Administrator.

The BA identifies endangered species within the proposed corridor. The BA is forwarded to the United States Fish and Wildlife Service for its review. If the United States Fish and Wildlife Service determines that a project will jeopardize the continued existence of a federally listed endangered or threatened species or adversely modify its critical habitat, then the project cannot be permitted.

Task 5.10: Update Estimated Project Cost

The project estimate should be updated by the Project Manager with current costs. This project estimate will be calculated using parametric prices. The project estimate should be the project costs for the selected preferred alternative. This project estimate should be compared to the previous estimate in preparation of reporting to IPOC.

Task 5.11: IPOC Concurrence

Once the preferred alternative is chosen, the Office of Program Management will present the preferred alternative to the IPOC committee for approval. The information that the IPOC Committee will require is the preferred alternative that has been selected, justifications for any cost increases above 10% of the original approved cost or exceeding $5 million of the original approved cost, and justification for any proposed schedule changes. Once the document (Draft EIS) is approved it will be signed by the Division Administrator of FHWA and the Commissioner of INDOT. EAs can be signed by the appropriate FHWA Planning/Environmental Specialist and the Environmental Policy Administrator of INDOT.

Task 5.12: Local Permitting and Zoning Coordination

The Project Manager shall contact the MPO and/or other local zoning officials to make them aware of the proposed roadway corridor. Local officials may create a local zoning board or make their existing local zoning board aware of the proposed roadway corridor to help prevent permit and zoning changes, mainly the rezoning of agricultural land to commercial. This may help protect the integrity of the preferred alternative alignment.

Task 5.13: Abstract Preferred Alternative

After the preferred alternative is selected the affected properties are identified and given to the abstractor. The Designer will prepare 20 year Title and Encumbrance Reports for each property identified. The T&E report information is gathered from the county records and must include all ownership records for the past 20 years including liens, judgments, and a copy of the last deed of record. At this time a parcel number will be ascribed to each property owner and an abstract collected for each parcel number.

The Designer will submit the abstracts to the Central Office Real Estate Regional Manager to be input into the LRS system. They will also send copies to the surveyor responsible for the ground or aerial

survey in Step 6 to help send out notice of survey and create the route survey plat sheet. The reports are also essential for the development of Preliminary Right-of-Way Plans in Step 7.

Task 5.14: Publish and Distribute Draft Environmental Document

After the preferred alternative has been approved by IPOC, the Designer will publish and distribute the draft environmental document to the Project Manager, the Office of Environmental Services, FHWA, and the MPO. The availability of the DEIS is published in the Federal Register. The draft environmental document will be made available to the public and other stakeholders no later than the time the DEIS is filed with the EPA for publication in the Federal Register and in accordance with INDOT's Public Involvement Procedures Manual.

Task 5.15: Hold Public Hearing

Once the preferred alternative is approved by IPOC, FHWA and the draft environmental document has been published and released for public involvement, the Public Hearing can be held. The following should be submitted to the Public Hearings Program Coordinator to start the public hearing process:

- Three sets of design plans (10% to 15% complete)
- Three copies of the draft environmental document
- Names and addresses of effected property owners

The Public Hearings Program Coordinator will distribute the plans: one set of plans is for the Public Hearings Program Coordinator, one set of plans will be sent to the District Office, and one set is sent to a local location for public viewing (i.e. library, Mayor's Office, County Auditor, etc.).

The Public Hearings Program Coordinator will also set the meeting date, reserve the meeting venue, publish legal advertisements, and send out meeting invitations to project stakeholders.

Note this submittal can run concurrent with the publication and distribution of the draft environmental document. The public hearing should not be held any sooner than 15 days from publication of the EA legal notice of availability in the local newspaper or the DEIS notice of availability in the Federal Register.

For the NEPA hearing, a 45 day comment period is required for EIS projects and a 30 day comment period is required for EA projects. SAFETEA-LU mandates that the DEIS comment period not exceed 60 days unless a different comment period is agreed upon by the lead agencies, the project sponsor, and all participating agencies.

The INDOT Hearings Examiner will set up recording equipment and record the proceedings via micro-cassette. The tape will then be given to INDOT clerical staff for transcription. The transcript is then sent to the Designer and the INDOT Project Manager within 21 days after the public hearing is held. This time allows for written comments to be received within the above mentioned comment period of 30 or 45 days.

Speakers at the public hearing should include at least one member of a community advisory committee (CAC) and/or local official. This will help show local support for the project and the preferred alternative. The Designer should also provide a distribution of Title VI demographic surveys to the public.

Task 5.16: Address Comments

The Designer will need to summarize all of the primary or major concerns recorded at the public hearing and provide responses. These issues/responses will be given to the INDOT Project Manager, and reviewed by FHWA and the appropriate INDOT managers so the issues are responded to correctly and with consistency. Once the list is complete, it will be posted to the INDOT website by the Public Hearings Office. After the responses have been posted to the INDOT website, the INDOT Commissioner shall

send a letter to the FHWA Division Administrator requesting approval to perform detailed design on the preferred alternative described in the draft environmental document.

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 that this would not prevent the lead agencies from making an impartial decision on the appropriate course of action and 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 are met, before developing that alternative in greater detail.

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.

Normally, the non-Federal lead agency sponsoring the project will initiate the request to develop the preferred alternative to a higher level of detail. The request should be made by letter from the official authorized by the requesting agency to sign the EIS, or that official's authorized delegate, to the FHWA Division Office and to the appropriate offices of other lead agencies, if any. The request may be included in a letter requesting acceptance of the identification of a preferred alternative, if appropriate. The letter should request the concurrence of the other lead agencies in developing the preferred alternative to a higher level of detail. The request should provide the following information:

- Reasons why the agency wants to develop the preferred alternative to a higher level of detail before completion of NEPA review, including the specific Federal laws, impacts, resources, and mitigation measures whose processing would be facilitated by the proposed differential treatment of the alternatives;
- The general nature and extent of the work the agency would perform on the preferred alternative if the request is approved; and
- The reasons why greater design detail will not prejudice the lead agencies' consideration of other alternatives.

FHWA should document its determination that the relevant conditions described in Section 6002 are met before any work is done to develop a preferred alternative in greater detail. This documentation may be in the form of a response letter to the non-Federal lead agency's request. See Procedural Manual for Preparing Environmental Studies for further guidance.

In accordance with SAFETEA-LU, the additional development of the preferred alternative may not proceed beyond that level necessary to identify ways to avoid or further minimize impacts, to develop mitigation, or to comply with other applicable environmental laws, such as the **Clean Water Act, Section 404**; the **Endangered Species Act, Section 7**; the **National Historic Preservation Act, Section 106**; or the **Transportation Act, Section 4(f)** The degree of additional development needed and allowable will depend on the specific nature of the impact being mitigated or resource being protected, or the level of information required to comply with other applicable laws.

Task 5.17: Evaluate Consultant

Once the Preferred Alternative is selected, all the public hearing issues are addressed, and the draft environmental document is completed, the Project Manager, with input from other INDOT employees that have been involved with the development of the project, will evaluate the Consultant.

If the Consultant has been rated well, the Project Management Team will modify their contract to finish the project.

If the Consultant has been rated poorly, the Project Manager will need to consider creating an RFP to hire a new Consultant to finish the project. The Project Manager will need to realize that this process will take approximately 12 months, so the RFP should be submitted after the completion of Step 5. The original Consultant will complete Step 6 and the final environmental document.

Task 5.18: Contract Method Review

The INDOT Project Manager will be responsible for setting a meeting with select individuals that have been working with the Consultant completing the project thru Step 5 of the PDP process. The result of the meeting will be to determine if the current Consultant will complete the project through the final step in the PDP progress.

Task 5.19: Prepare Scope of Services (All Remaining Steps)

The INDOT Project Manager will be responsible for submitting the required paperwork to the CO/CA if a new consultant is to be selected to complete the project.

The following forms are located in Appendix C:

- Contract Information Form
- RFP Item Description Form

Task 5.20: Contract Modification (All Remaining Steps)

If a new consultant is to be selected to complete the remaining steps of the project, INDOT will post the RFP for the remaining steps and a new consultant will be selected through the INDOT scoring system.

Task 5.21: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 6 Stage 1 – Develop Preferred Alternative

Task 6.01: Ground or Aerial Survey

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. 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.

Once the preferred alternative is approved by IPOC and the lead agencies concurred in the decision to develop it to a higher level of detail, the Designer will be responsible for completing the electronic survey and Survey Location Route Plat.

The project location, survey termini and survey width required will need to be provided by the Designer.

To assist in the location of existing utilities, a company who is qualified to perform Subsurface Utility Engineering may be requested to work along side the surveyor.

This activity is comprised of the following sub-activities:

Sub-Task 6.01.01: ***Office Research***

Sub-Task 6.01.02: ***Utility Research***

Sub-Task 6.01.03: ***Initial Notice to Utilities***

Sub-Task 6.01.04: ***Utility Marks Location (30 Calendar Days)***

Sub-Task6.01.05: ***Monument Reconnaissance***

Sub-Task 6.01.06: ***Centerline Review***

Sub-Task 6.01.07: ***Centerline Monumentation / Establishing Benchmarks***

Sub-Task 6.01.08: ***Data Collection (Ground) - 2 Crews***

Sub-Task 6.01.09: ***Survey Book Review***

Sub-Task 6.01.10: ***Electronic Data Review***

Sub-Task 6.01.11: ***Develop Route Plat***

Sub-Task 6.01.12: ***Survey Transmittal***

Task 6.02: Perform Subsurface Utility Engineering

If Subsurface Utility Engineering (SUE) is going to be used on a project, the Designer should have the SUE provider and the survey provider coordinate work to locate all the underground utilities horizontally. This will help insure that the utilities are located accurately on the survey.

Once the Designer has completed the Stage 1 detailed design plans they should coordinate with the SUE provider and discuss where vertical exploratory locations should be located to investigate possible points of conflict. If the estimate for SUE investigation is greater than the previously estimated cost, the Designer will be responsible for submitting a supplemental and justifying the extra cost.

The SUE information should be used to help decide what utilities can be avoided and which ones have to be relocated. Any utilities that can be avoided will save money in relocation costs for INDOT or possibly even the utility. Any possible redesign to avoid a utility should be discussed at the field check, the Cost to Benefit ratio checked and then, if found beneficial, incorporated in the development of the stage 2 detail design plans in Step 7.

Task 6.03: Develop Stage 1 Detailed Design Plans

Once the survey is complete and the preferred alternative is approved by IPOC, the Designer can begin the development of the Stage 1 Detailed Design Plans. The Designer should consult the Indiana Design Manual, Chapter 14 as a guide for what is to be included in the plans.

When the Designer prepares the Stage 1 Detailed Design Plans, the draft environmental document should also be incorporated into the plans to minimize or avoid environmentally sensitive areas identified by the Production Management Division's Office of Environmental Services (i.e., 4(f) properties, wetlands, critical habitat, endangered species, hazardous waste sites, cemeteries, etc.). At the end of this step, the Designer should have a complete set of Stage 1 Detailed Design Plans ready for review.

Task 6.04: Hydraulic Design Review

The Designer will submit the hydraulic design for review to the Production Management Division's Hydraulic Section a minimum of sixty days before the review of the Stage 1 Detailed Design Plans.

Task 6.05: Identify Potential Design Exceptions

The Designer shall identify any Potential Design Exceptions and prepare the required documentation for submittal with the Stage 1 Detailed Design Plans.

Task 6.06: Complete Environmental Studies

Once the preferred alternative has been chosen and all of the public hearing comments have been addressed, the Environmental studies will be completed by the Designer. The studies must be completed and submitted to the Environmental Policy Administrator. That person will then distribute the studies to the proper reviewer for review and approval.

All of the following studies are described in the Procedural Manual for Preparing Environmental Studies, provided by the Office of Environmental Services.

Sub-Task 6.06.01: Complete Draft Archaeological Survey and Draft History/Architecture Survey

This will be reviewed by the Cultural Resources Administrator.

Sub-Task 6.06.02: Draft Noise Analysis

This will be reviewed by the Environmental Policy Administrator.

Sub-Task 6.06.03: Complete Draft Final Section 4(f) Determinations

This will be reviewed and approved by the Environmental Policy Administrator and Cultural Resources Administrators.

Sub-Task 6.06.04: Complete Draft Ecological Survey Report

This will be reviewed by the Ecology and Waterways Permit Administrator.

Sub-Task 6.06.05: Complete 404/401 Permit Determination

The Ecology and Waterways Permit Administrator will need to review the completed stage 1 detailed design plans to be able to determine what permits will be required.

Sub-Task 6.06.06: Complete Documentation for Section 106 and Memorandum of Agreement

This will be reviewed by the Cultural Resources Administrator and the Manager of Office of Environmental Services. INDOT will also send a copy to FHWA for its review and approval.

Sub-Task 6.06.07: Complete Final Air Quality Hot Spot Analysis

This will be reviewed by the Environmental Policy Administrator. The Hot Spot Analysis is only required if the AADT is over 125,000 with 8% or more trucks (approximately 10,000 AADT truck traffic).

Sub-Task 6.06.08: Complete Phase 2 Environmental Site Assessment

This will consist of a Phase 2 Hazmat Study, if needed, which will be reviewed by the Environmental Policy Administrator. A Phase 2 Archaeology study, if needed, will be reviewed by the Cultural Resources Administrator.

Once all of the environmental study information is completed, reviewed and approved, the final environmental document assembly will begin.

Task 6.07: Submit Stage 1 Detailed Design Plans

The Stage 1 Detailed Design Plans will be electronically submitted by the Designer and reviewed by the Office of Roadway Services, the Office of Structural Services, or the appropriate District staff as directed. The Reviewer has 30 days to review the plans and return them to the Designer. The Designer should consult the Indiana Design Manual, Chapter 14 as a guide for what is to be included in the submittal.

The Designer should submit the plans electronically into the INDOT Electronic Records Management System (ERMS). Non-IPOC projects are to be submitted to the District Coordinator and IPOC projects are to be submitted to the Central Office Coordinator. The Coordinators are listed as follows:

- Coordinator 1 ..... Crawfordsville District
- Coordinator 2 ..... Fort Wayne District
- Coordinator 3 ..... Greenfield District
- Coordinator 4 ..... LaPorte District
- Coordinator 5 ..... Seymour District
- Coordinator 6 ..... Vincennes District
- Coordinator 7 ..... Central Office

The Designer should notify the Coordinator and the Project Manager that the plans have been submitted into ERMS. The Coordinator then notifies the Project Manager that the submittal is ready for review. The Project Manager will review the submittal documents and determine which reviews need to be completed. After concurring that the submittal is complete, the Project Manager will inform the Coordinator of the required reviews. The Coordinator will then route the plans to the Reviewer. As part of the review, the Reviewer will provide markups and an evaluation. If a resubmittal is needed, the Reviewer should notify the Coordinator and the Project Manager, and the Project Manager must decide whether to adjust the schedule accordingly.

After completing the review and the evaluation, the Reviewer will return the plans, any markups, and the evaluation back to the Coordinator through ERMS. The Coordinator will notify the Project Manager and the Designer of the completed review, and that the review comments and evaluation are available in ERMS for the Project Manager to review. The Project Manager will review the markups and the evaluation for concurrence, noting if there are any further concerns to be addressed. The Project Manager will then notify the Designer and the Coordinator that the review and evaluation are complete. The Coordinator will then process the review and the evaluation for the Designer. At this time, the Designer will be able to view any markups and the evaluation.

A flowchart illustrating this plan submittal and review process is provided in the Appendix.

Task 6.08: Review Stage 1 Detailed Design Plans for Environmental Impacts

Once the detailed design plans are completed, the Designer should submit one set of plans to the Environmental Policy Administrator and one set to the Ecology and Waterways Permit Administrator for their review and comment. If any historic properties are involved, the Office of Environmental Services will forward a set of plans to the Cultural Resources Administrator.

Markups will be returned to the Designer and the appropriate revisions should be made to the plans before the field check.

Task 6.09: Review Air Quality Conformity with MPO / Complete Air Quality Conformity Analysis for Rural Non-Attainment Areas

Once the stage 1 detailed design plans and preliminary phasing of the project are complete, the Designer will request a Conformity Analysis from the local MPO through the Manager of Urban and Corridor Planning. If the project is in Greene or Jackson County, a Conformity Analysis for Rural Non-Attainment Area will need to be requested through the Manager of Urban and Corridor Planning. MPOs normally do Conformity Analysis once a year.

Once the Conformity Analysis is complete a copy should be given to the Environmental Policy Administrator who will distribute the copies to the appropriate individuals.

Task 6.10: Review and Approval of Design Exception(s) by Production Management Division

After the design exception(s) has been identified, the Designer should submit the completed design exception(s) to the Project Manager for routing to either the Manager of the Office of Roadway Services for road elements or the Manager of the Office of Structural Services for bridge elements. The Designer should refer to Sections 40-8.0 through 40-8.05 of the Indiana Design Manual to prepare the appropriate design exception.

If the project is located on Indiana's Non-NHS system, the design exception will be reviewed and approved by the appropriate Office Manager (Roadway Services or Structural Services). If the exception is requested on Indiana's NHS System, the reviewer and appropriate Office Manager will review the design exception for completeness and then submit the design exception for approval to the Director of Production Management. If the design exception is approved, it will be logged and returned to the Project Manager and the Designer for their records.

The signature process for the design exception(s) is as follows for IPOC projects: Designer → Reviewer → Project Manager → Roadway/Structural Services → Production Management Director

The signature process for the design exception(s) is as follows for non-IPOC projects: Designer → Reviewer → Project Manager → District Production Director → Roadway/Structural Services → Production Management Director

The above is a brief description of the routing process for design exceptions. The Designer should refer to the Indiana Design Manual, Section 40-8.04 for the Level One Design Exception Approval Procedure. **(NOTE: Currently, this section is superseded by Indiana Design Memorandum No. 06-05.)**

Task 6:11: Review and Approval of Design Exception(s) by FHWA

If a project requires Federal Oversight, the Office of Roadway Services or the Office of Structural Services, as appropriate, will forward the design exception(s) to the Federal Highway Administration Division Administrator for review and approval. FHWA will only approve after INDOT has approved the design exception(s).

If the design exception is approved by both INDOT and FHWA, it will be logged and returned to the Project Manager and the Designer for their records.

The signature process for the design exception(s) is as follows for IPOC projects: Designer → Reviewer → Project Manager → Roadway/Structural Services → Production Management Director → FHWA Division Administrator

The signature process for the design exception(s) is as follows for non-IPOC projects: Designer → Reviewer → Project Manager → District Production Director → Roadway/Structural Services → Production Management Director → FHWA Division Administrator

The above is a brief description of the routing process for design exceptions. The Designer should refer to the Indiana Design Manual, Section 40-8.04 for the Level One Design Exception Approval Procedure. **(NOTE: Currently, this section is superseded by Indiana Design Memorandum No. 06-05.)**

Task 6.12: Perform Subsurface Investigation

Once the survey and the Stage 1 Detailed Design Plans are complete, bridges, culverts and/or pipes are sized and approximate foundation loads are known, the Designer will submit the following plan sheets and information to the Manager of Office of Geotechnical Engineering to request the Soils Subsurface Investigation:

- Title Sheet
- Typical Section Sheet(s)
- Plan and Profile Sheet(s) with all bridge and culvert locations marked
- Layout Sheets for Bridges and Culverts
- MSE Wall or Retaining Wall Layout Information
- Cross Sections
- Names and addresses of effected property owners
- Requested pile and foundation loads for culverts and bridges

Once the soils investigation is complete and the required laboratory tests are conducted, all related soils recommendations will be collected and organized to create the Soils Investigation Report. This report will give the recommended CBR rating for the pavement design, the recommended foundation information for all the bridges, culverts, MSE walls, retaining walls and pipes and any other soils related information.

The Geotechnical Section should be involved with every project as early as possible, and no later than the preliminary field check. See the Policy for Geotechnical Investigation or Geotechnical Waiver to determine if a geotechnical investigation is required.

This activity is comprised of the following sub-activities:

Sub-Task 6.12.01: ***Field Investigation***

Sub-Task 6.12.02: ***Laboratory***

Sub-Task 6.12.03: ***Engineering***

Task 6.13: Pavement Design Requested and Received

The Pavement Design Request form is transmitted to the Pavement Design Engineer after the geotechnical report is complete and the CBR value is known. The geotechnical report is not required for resurface projects but is required for widening, replacement, crack and seat and rubblization projects.

The pavement design request form can be found in the Indiana Design Manual, Chapter 52, or online at **http://www.in.gov/dot/div/contracts/design/dmforms/App52-14A.pdf**. This request should be sent to the Pavement Design Engineer. The Indiana Design Manual, Section 52-8.02 provides more information about the pavement design request process. The pavement steering committee meets once a month. The pavement design request should be returned within 4 to 6 weeks.

Task 6.14: Hold Design Field Check

Once the stage 1 detailed design plans have been reviewed and approved by the reviewer and environmental avoidance measures have been incorporated into the plans, the Designer will be responsible for scheduling and transmitting invitations and plan sets (if required) for the field check.

Three weeks notice should be given for the field check. The Designer should schedule the field check date with the District Construction Engineer, INDOT Project Manager and the District Highway Operations Director.

The Designer will also be responsible for inviting local Community Advisory Committees (CACs) and other local officials to the field check to receive their comments and concerns and consider possible CSS strategies.

A sample Field Check Notification letter can be found on the INDOT website at **http://www.in.gov/dot/div/contracts/design/dmforms/Cov14-1B.pdf**

At this stage the Designer should submit an updated cost estimate to the INDOT Project Manager.

At the field check, the Designer should be prepared to suggest the following:

- Maintenance of Traffic Scheme: Phasing of the project and how it will work with utility relocations.
- Schedule Timing of Construction: Determination of the best time of year to let the project given, stream work limitation, tree clearing limitation, town festivals, school schedules, etc.
- Suggest Break Locations: Segment the project into different contracts and/or phases (large corridor projects).

After the field check is held, the District Construction Engineer and Construction Management Division's Field Construction Engineer will return marked up plans and suggestions for the previously mentioned topics. Given the complexity of the project, a meeting may need to be held.

The Construction Management Division's Field Construction Engineer should be sent plans and invited to only Major Project field checks.

Task 6.15: Notification to Utilities to Verify Location Information

The Designer will be responsible for transmitting the following information to each utility so the utility locations can be verified:

- Plan and Profile Sheets
- Construction Detail Sheets (if they show the utilities)
- Cross Sections (if they show the utilities)

Task 6.16: Utilities Verify Location Information (30 Calendar Days)

The Utility companies will have 30 calendar days to review and note any location discrepancies. The Designer should receive plans back from every utility whether there are discrepancies or not. If discrepancies are noted, the Designer will be responsible for updating the plans and locating any other possible conflict points due to the corrected discrepancies.

Task 6.17: Notify Railroad to Verify Operation Status

The Designer will be responsible for transmitting the following information to each railroad so the railroad operation status can be verified:

- Plan and Profile Sheets
- Construction Detail Sheets

Task 6.18: Complete Preferred Alternative Verification Review

The Preferred Alternative Verification refines the construction limits on the recommended alternative. Assumptions made during the Assessment of Reasonable Alternatives are further investigated.

Task 6.19: Detailed Design Value Engineering Study (> $ 25 Million)

Upon completion of Stage 1 design, a value engineering study is conducted. Through the use of creative techniques, value engineering looks at alternative ways to accomplish the necessary function and reliability at the lowest overall cost. CSS strategies can be discussed at this time to determine if they are practicable.

Task 6.20: Stage 1 Detailed Design/Constructability/Operational and Risk Review

The Designer will send the Stage 1 detailed design plans to the District Construction Engineer, Construction Management Division's Construction Field Engineer and INDOT Project Manager for review and comment.

Task 6.21: Evaluate Consultant

Once the Stage 1 Detailed Design Plans have been completed, the Field Check has been held, and the preferred alternative verification review has been completed, the Project Manager, with input from other INDOT employees that have been involved with the development of the project, will evaluate the Consultant.

Task 6.22: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where

needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 7 Stage 2 – Advance Preferred Alternative

Task 7.01: Develop Stage 2 Detailed Design Plans

Once the preferred alternative verification review has been completed, the Designer can begin the development of the Stage 2 Detailed Design Plans. The Designer should consult the Indiana Design Manual, Chapter 14 as a guide for what is to be included in the plans.

During this step, the plans will continue to be developed in greater detail. Coordination with the environmental agencies and the public and private utilities to minimize any adverse effects is vital in the development of Preliminary Right-of-Way Plans and Environmental Plans.

When the Designer prepares the Stage 2 Detailed Design Plans, the draft environmental document should also be incorporated into the plans to minimize or avoid environmentally sensitive areas identified by the Production Management Division's Office of Environmental Services (i.e., 4(f) properties, wetlands, critical habitat, endangered species, hazardous waste sites, cemeteries, etc.). At the end of this step, the Designer should have a complete set of Stage 2 Detailed Design Plans ready for review.

Task 7.02: Resource Agency Consultation – Preferred Alternative & Mitigation Package (PAMP)

For EIS projects (not required for EA projects), the draft PAMP will need to be approved by the Project Management Team (which should include FHWA, the Division of Production Management, District Planning and Production, and the local MPO) prior to presentation to the agencies. This review will involve a formal electronic submission and Project Management Team meeting to discuss comments.

The PAMP will be submitted to the involved regulatory agencies for review by the Office of Environmental Services, in accordance with the Procedural Manual for Preparing Environmental Studies. The review will involve an electronic submission and interagency review meeting/conference call to discuss agency comments. The Designer will write the agency meeting minutes and distribute them electronically to the agencies within 5 work days of the meeting.

Task 7.03 Complete Draft Waterway Permit Applications

The following list provides brief descriptions of waterway activities that are regulated by various agencies:

- The discharge of either temporary and permanent dredge or fill materials into waters of the United States, regardless of amount or length, is regulated by the U.S. Army Corps of Engineers (USACE) and the Indiana Department of Environmental Management (IDEM) through the waterway permitting process.
- The USACE regulates impacts to navigable waters under Section 10 of the Rivers and Harbors Act of 1899 and the discharge of dredge and fill materials into waters of the United States under Section 404 of the Clean Water Act (CWA).
- The IDEM, under authority of Section 401 of the CWA, regulates the state water quality through the 401 Water Quality Certification process and impacts to isolated wetlands.
- The U.S. Coast Guard (USCG) regulates impacts to, or crossing of, navigable rivers in Indiana under Section 9 of the Rivers and Harbors Act of 1899. A completed 401 Water Quality Certification is required by the USCG for a Section 9 Permit.

During Step 7, projects are evaluated by the Office of Environment Services to determine if there are potential impacts to aquatic resources subject to waterway permits. If aquatic resources are not impacted, no waterway permits are required. If however, aquatic resources subject to waterway permits

are impacted, a draft of the pertinent sections of the Preferred Alternative Verification is completed by Permit Unit for permit determination. The Permit Unit returns the permit determination to the Designer. This determination will include the type and level of waterway permits required. This permit determination is included as part of the final submission of the Preferred Alternative Verification. Also during this phase, the determination will be made if an IDNR floodway permit will be required. This will be done by determination of the waterway drainage area and determining if the site is an urban or rural area if the drainage area is over 1 square mile or under 50 square miles. If there is any channel relocation on a drainage area over 1 square mile this will also result in a need for IDNR floodway permit.

Typical permit authorization options include:

- No waterway permits are required.
- Authorization under the 404 Nationwide Permit Program.
- Authorization under individual 404 Permit and 401 Water Quality Certification.
- Projects over commercially navigable waters require a Section 9 Permit from the USCG in addition to a 404 Permit and 401 Water Quality Certification.
- Projects impacting isolated wetlands require an IDEM Isolated Wetlands Permit in addition to any option above.

If required mitigation site will be identified and coordinated with the permitting agencies for acceptance. Once a site is selected and approved site and mitigation plans will be determined and submitted to the permitting agencies.

For a detailed list of requirements and a checklist of required documentation see the Indiana Waterway Permits Manual provided by the Office of Environmental Services which can be found online at **http://www.in.gov/dot/pdf/WaterwayManual.pdf**.

This activity is comprised of the following sub-activities:

Sub-Task 7.03.01: ***Prepare Draft Applications***

Sub-Task 7.03.02: ***Review and Approval by INDOT OES***

Sub-Task 7.03.03: ***Mitigation Site Identification***

Sub-Task 7.03.04: ***Permit Agency Coordination***

Sub-Task 7.03.05: ***Mitigation Site Design***

Sub-Task 7.03.06: ***Mitigation Plan Implementation***

Task 7.04: Noise Analysis Results Reviewed by INDOT Noise Committee

Once the Noise Analysis is completed, the results are submitted to INDOT Noise Committee through the Environmental Policy Administrator for verification and approval.

Task 7.05: Final Detailed Noise Analysis

Summarize INDOT Noise Committee meeting results and develop Final Noise Wall Recommendations.

This activity is comprised of the following sub-activities:

Sub-Task 7.05.01: ***Summarize Meeting Results***

The meeting results and Committee recommendations are summarized by the Chairman of the Noise Committee and forwarded to the Chief Engineer.

Sub-Task 7.05.02: Final Noise Wall Recommendations Approval

The Chief Engineer approves the final Noise Wall recommendations and approves them for inclusion in the project design.

Task 7.06: Coordinate and Develop with Utilities Relocation Plans

The Project Design Team will continue to work with public and private utility companies on relocation plans. This will include meetings with the District Utility Coordinator, the public and private utility companies, and the Project Design Team. Utilities will typically have 60 days to identify any potential conflicts. During these meetings, the design will continue to be developed to either add in or reduce the amount of utility relocations. Once the plans are completed to Stage 2 level of completeness, the plans will be reviewed for any additional conflicts and coordination will continue with the affected utilities.

Task 7.07: INDOT Reviews Utility Conflicts and Considers Use of Utility Corridor

During this time INDOT Office of Utility Coordination will also investigate the use of a utility corridor. The creation of utility corridors is necessitated by an increased demand from the growth and expansion of utility companies. The growth and expansion of underground utilities results in an increased demand and competition for the space available on roadway right-of-way for public utilities.

It is important to note that in Indiana "Utility Corridors" per se have not been commonly created. The development of this concept is still highly conceptual and FHWA encourages INDOT to study methods currently in use in Europe. To date, the main method of utility corridor simulation is joint trenching, but this topic is still highly underdeveloped in Indiana.

Task 7.08: Construction and Utility Relocation Plans

Project design team will conduct a constructability and utility relocation review during this stage of the project.

Task 7.09: Prepare Preliminary Right-of-Way Plans

All right-of-way shall be shown in accordance with Chapter 85 of the Design Manual. All plan-profile and construction detail sheets shall show existing and proposed right-of-way. The right-of-way callouts for both permanent and temporary right-of-way on the plan-profile sheets shall be labeled by station and offset in units of feet. There are several right-of-way plan checklists in Chapter 85 of the Design Manual. They include sample right-of-way indices for road and bridge plans (figures 85-2A and 85-2B), the checklist for Plat No. 1 (figure 85-2CF) and the checklist for right-of-way plans (figure 85-2F). The Designer should use these lists to provide complete right-of-way plans.

Task 7.10: Update Property Abstracts

After the preliminary right-of-way plans are developed, affected properties should be re-evaluated. Refer to Activity 81 in Step 5 for original abstracting activity. The Designer who did the original abstracting shall take all affected properties (parcels that have been numbered) and update all Title and Encumbrance Reports for any additional liens on the property (i.e., mortgages, tax liens, etc.) and parcel splits that may have occurred from the time of original abstracting to the present time. Any parcels that have been split since the original abstracting shall be incorporated into the right-of-way plans. All transactions that have occurred during the time period since original abstracting should be reported on the update.

The Designer will submit the abstract updates to the Central Office Real Estate Regional Manager to be input into the LRS. A copy of ownership changes should be submitted to the Designer working the right-of-way engineering.

Task 7.11: Preliminary Right-of-Way Plans are Developed and Reviewed by INDOT

The Designer will develop Preliminary Right-of-Way Plans for submittal to INDOT. This submittal will provide INDOT a review of the right-of-way needs for the project and begin the development of a purchasing timeline. During the review of the plans the District will determine if there are any conflicts. The right-of-way engineering will be reviewed by the Designer under its own QC/QA plan.

Task 7.12: Hold Public Information Meeting (Noise Wall and Design)

INDOT will hold a Public Information Meeting to provide the citizens information on the proposed Design and the potential for the use of Noise Wall if the project warrants the use of sound walls. Public input will be taken to determine whether affected property owners do or do not desire traffic noise abatement.

Task 7.13: Final Environmental Document Activities

During this phase of the environmental document the Designer with the aid of the Office of Environmental Services will finish addressing all individual comments from the public hearings, finalize the Phase 2 site assessment including finalizing the Archaeological survey. This process will result in showing how the project has met the requirements to avoid or minimize the affects that the project will have on key environmental or cultural sites on the project site or area.

This activity is comprised of the following sub-activities:

Sub-Task 7.13.01: Prepare Final Environmental Document

All documentation justifying design and environmental decisions is organized and presented in a final format. Additional documentation (study results, field data, agency correspondence, responses to substantive public comment, etc.) is included as appendices.

Sub-Task 7.13.01: Review Final Environmental Document

The final environmental document is reviewed and approved by the Office of Environmental Services.

Task 7.14: Railroad Design Information Gathered

The Railroad companies will have 60 calendar days to review and note design needs or active railroads in the project area. The Designer should receive comments back from the Railroad whether there are active or not. The Designer will be responsible for updating the plans and meeting the railroad needs.

Task 7.15: Submit Stage 2 Detailed Design Plans

The Stage 2 Detailed Design Plans will be electronically submitted by the Designer and reviewed by the Office of Roadway Services, the Office of Structural Services, or the appropriate District staff as directed. The Reviewer has 30 days to review the plans and return them to the Designer. The Designer should consult the Indiana Design Manual, Chapter 14 as a guide for what is to be included in the submittal.

The Designer should submit the plans electronically into ERMS. Non-IPOC projects are to be submitted to the appropriate District Coordinator (Coordinators 1-6) and IPOC projects are to be submitted to the Central Office Coordinator (Coordinator 7). The Designer should notify the Coordinator and the Project Manager that the plans have been submitted into ERMS. The Coordinator then notifies the Project

Manager that the submittal is ready for review. The Project Manager will review the submittal documents and determine which reviews need to be completed. After concurring that the submittal is complete, the Project Manager will inform the Coordinator of the required reviews. The Coordinator will then route the plans to the Reviewer. As part of the review, the Reviewer will provide markups and an evaluation. If a resubmittal is needed, the Reviewer should notify the Coordinator and the Project Manager, and the Project Manager must decide whether to adjust the schedule accordingly.

After completing the review and the evaluation, the Reviewer will return the plans, any markups, and the evaluation back to the Coordinator through ERMS. The Coordinator will notify the Project Manager and the Designer of the completed review, and that the review comments and evaluation are available in ERMS for the Project Manager to review. The Project Manager will review the markups and the evaluation for concurrence, noting if there are any further concerns to be addressed. The Project Manager will then notify the Designer and the Coordinator that the review and evaluation are complete. The Coordinator will then process the review and the evaluation for the Designer. At this time, the Designer will be able to view any markups and the evaluation.

A flowchart illustrating this plan submittal and review process is provided in the Appendix.

Task 7.16: Stage 2 Detailed Design/Constructability/Operational and Risk Review

The Designer will send the Stage 2 detailed design plans to the District Construction Engineer, Construction Management Division's Construction Field Engineer and INDOT Project Manager for review and comment.

Task 7.17: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 8 Environmental Approval

Task 8.01: Publish and Distribute Final Environmental Document

The preliminary FEIS or FONSI request is circulated to the Project Management Team for their review and comments. Once the updates have been completed, it is forwarded to FHWA for legal sufficiency and final approval.

Task 8.02: Obtain FONSI or ROD

The Office of Environmental Services will work jointly with FHWA to approve, publish, and distribute the final environmental documents, including obtaining the Finding of No Significant Impact (FONSI) or Record of Decision (ROD), in accordance with the Procedural Manual for Preparing Environmental Studies. The availability of the FEIS is published in the Federal Register. Distribution must be made no later than the time the document is filed with EPA for Federal Register publication and must allow for a minimum 30-day review period before the Record of Decision is approved.

Once the ROD has been signed, the mitigation, commitments, and recommendations section from the FEIS should be incorporated into the appropriate design and construction phases of project development. The **Commitments Summary Form** should be completed based on commitments made in the NEPA process. This form shall follow the project through design, land acquisition, and construction and must be updated as appropriate through the Project Development Process. Commitments made in the environmental document are to be included in the Project Commitments Summary and plans.

For those mitigation items with firm commitments to implement through the approval of the environmental document, the Project Manager will ensure that they are incorporated into the project plans and specifications or otherwise implemented. If the Project Manager determines that any of these listed firm commitments cannot be implemented, then the reasons will be formally documented and agreed to by the Office of Environmental Services.

For those mitigation items with a commitment to further evaluate its implementation, the Project Manager will ensure that they are thoroughly evaluated to determine the practicability of implementation. All mitigation items that are determined to be feasible and prudent to implement will be incorporated into the project plans and specifications or otherwise implemented. If the Project Manager determines that any of these listed commitments to consider are not feasible and prudent, then the reasons will be formally documented and agreed to by the Office of Environmental Services.

A similar process will be followed when the project proceeds through subsequent project development phases with the Office of Real Estate, Contract Administration, and the Division of Construction. The Indiana Design Manual and the General Instructions to Field Employees has more information on implementing environmental commitments. The final Project Commitments Summary will document the final status of all the environmental commitments made in or subsequent to the FEIS/ROD, including any commitments associated with required permits.

Task 8.03: Verify Activities in TIP and INSTIP

During this stage of the project development, the Project Manager needs to verify with the Planning Division's Office of Urban and Corridor Planning that all remaining activities (PE, CN, and RW) are stated in the TIP and INSTIP for the community and the state.

The Project Manager will verify the project is placed in the TIP/INSTIP in a timely manner to prevent any delays in the project.

Task 8.04: Submit Funding for FHWA Authorization

Land Acquisition cannot begin until INDOT has obtained an approved environmental document including required public hearings and FHWA funding authorization. The Real Estate Administrative Office will submit the funding request to FHWA. INDOT must comply with processes established in FHWA Regulations 49 CFR Part 24 and Indiana Code Title 32. Additional information can be found in the various manuals from the Production Management Division's Office of Real Estate. These manuals are located on the INDOT website at **http://www.state.in.us/dot/div/pubs/manuals/rightofway/** and consist of the Appraisal Manual, Buying Manual, Relocation Manual, and Property Management Manual.

Task 8.05: Invoking the Statute of Limitations for Environmental Documents in the Federal Register

SAFETEA-LU Section 6002 established a 180-day Statute of Limitations (SOL) on claims against USDOT and other federal agencies for certain environmental and other approval actions. The **SOL established by SAFETEA-LU** applies to a permit, license, or approval action by a federal agency if:

1) The action relates to a transportation project (as **defined above**); and
2) A SOL notification is published in the Federal Register (FR) 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 decision whether to use the SOL notice process is one that the FHWA Division Office will make in consultation with the other lead agencies. The INDOT Office of Environmental Services will forward a draft Federal Register Notice of Limitation on Claims to FHWA for review and action. FHWA will review and approve the Notice and forward it to the Federal Register for publication to invoke the 180-day SOL provision included in SAFTEA-LU.

Task 8.06: Evaluate Consultant

INDOT will evaluate the Consultant during this stage of the project. A copy of the evaluation form may be found in the appendix.

Task 8.07: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 9 Prepare Final Right-of-Way Plans

Task 9.01 Submit Final Right-of-Way Plans

Objectives:
- Complete and submit Final Right-of-Way Plans for review
- Complete and submit Right-of-Way Tracings

Preliminary Right-of-Way Plans are developed by the Designer in Step 7 using Abstract information from Step 5 and the plans. Final Right-of-Way Plans incorporate Preliminary Right-of-Way Plan comments and any Stage 2 Detailed Design comments that affect the right-of-way. Legal descriptions and area calculations also are included in the Final Right-of-Way Plans. These Final Right-of-Way Plans can be developed concurrently with the Stage 2 Detailed Design in Step 9; however, any Stage 2 design issues that may affect right-of-way must be resolved prior to submission of the Final Right-of-Way Plans.

Right-of-way plans must be as accurate as source documents in all cases. Right-of-way plans are used to display the findings of ownership of the properties required. The information displayed is based on research performed in prior steps. INDOT uses the Final Right-of-Way Plans and approved Stage 2 construction plans to estimate compensation for the part taken and damages, if any, to the residence. The Final Right-of-Way Plans also identify service providers needing relocation in conjunction with the project.

The Designer that is responsible for the development of the project will be responsible for reviewing the right-of-way engineering and the resulting right-of-way plans through its QC/QA process.

Task 9.02: Final Right-of-Way Tracings

The Final Right-of-Way Tracings incorporate all the Final Right-of-Way Plan review comments. Before submitting the Final Right-of-Way Tracings, an in-depth review of courthouse records is conducted to verify property owners and determine if there are new ownership transactions. In addition a field review is conducted to identify changes to topographic features, structures, or utilities. The Final Right-of-Way Tracings are revised to accurately reflect new information identified in the final field verification.

Task 9.03: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 10 Begin Land Acquisition

Task 10.01: Appraisal Problem Analysis

Objectives/Deliverables:
- ROW Appraisals
- Secured ROW Parcels
- Certification Letter
- Consultant Evaluation

INDOT'S Review appraisers or consultants will perform the APA (Appraisal Problem Analysis). The purpose is to correctly analyze the necessary appraisal types for each property, either a waiver valuation or full appraisal, what is to be appraised, and the pertinent issues involved. The appraisal report will then be assigned to either consultant or INDOT staff.

Task 10.02: Prepare Appraisals/Valuations

Qualified appraisal personnel complete certified appraisals and/or waiver valuations to determine property values in the area. Only Staff Appraisers or those from the INDOT approved list may be used to conduct appraisals. These appraisal reports/waiver valuations are the basis for developing the Statement of Just Compensation and making offers to the affected property owners. Agreement on acquisition is then sought through presentation of the SJC and the proposed construction plans. INDOT estimates fair market value of the property acquired plus damages to any remaining property. It is important to identify Priority Parcels for early processing. Priority Parcels are those with Relocation issues, those on bridges where construction may begin earlier, those with total takes, and those with major severance damages and/or high likelihood of condemnation. The priority parcels should be appraised and acquired first.

Task 10.03: Concurrent Review of Appraisals by INDOT

Because the Land Acquisition process weighs heavily on the PDP it is critical that the appraisal review process take place concurrently with the completion of the appraisals. Review appraisers review the SJC and appraisal report. Once the appraisal is reviewed and recommended as a basis for the SJC the acquisition process can begin. For more information see INDOT'S Appraisal Manual and the "How Land is Purchased Pamphlet."

Task 10.04: Concurrent Right-of-Way Acquisition

Acquisition of parcels is done by consultants or INDOT Realty Specialists. Upon INDOT determining the fair market value, the buyer will present the offer to the owner following mandated procedures found in the Buyer's Manual. When the parcel is secured the parcel packet is submitted to the INDOT Real Estate Regional Manager for review assignment. The secured parcel packet will proceed through the voucher process for payment. Payment is processed through the Property Management Section. Only Staff Buyers or those from the INDOT approved list may be used to conduct acquisitions.

INDOT must inform all owners of their rights under the law; the law will fully protect these rights. State and Federal laws prohibit discrimination on the grounds of race, color, religion, sex, national origin, age, or disability. The right-of-way acquisition process requires INDOT to take certain steps to ensure the protection of all rights and interests of property owners. These steps include:

- Making every effort to acquire the property in a timely manner.
- Making every reasonable effort to contact each property owner and present the owner with a written offer of the approved valuation for the required property.
- Offering the full fair market value for the property being acquired in compliance with both federal and state laws.

For more information see INDOT'S Buyer's Manual.

Task 10.05: Concurrent Relocation Assistance

When the buying process is being done by INDOT staff and the buyer initiates contact with an owner who may be entitled to Relocation assistance, the buyer will notify the Chief Relocation Specialist through the Daily Notice form. The Chief Relocation Specialist will assign the parcel to an INDOT Realty Specialist to make contact with the owner and assist them through the relocation process.

If the Buying and Relocation processes are being done by a consultant, the Consultant will notify INDOT's Chief Relocation Specialist before initial contact with owners to verify the Relocation Consultant has met INDOT's minimum qualifications and are on the current Approved Fee List for Relocation. At that time, the Chief Relocation Specialist will determine mandatory check points for review throughout the process.

INDOT must inform any displaced businesses or persons of their rights and benefits under the Relocation Assistance Program outlined in the Uniform Relocation and Real Property Acquisition Policies Act of 1970.

Refer to the Relocation Manual and the Relocation Assistance Program pamphlet for more details.

Task 10.06 Concurrent Condemnation

If INDOT and the property owner cannot reach an agreement through negotiation, the Indiana Code permits INDOT to acquire property for a public improvement through eminent domain. The Attorney General's Office, Transportation Practice Group, handles all condemnations for INDOT. The INDOT Office of Real Estate Acquisition Section serves as the liaison to the Attorney General's Office for all condemnations. More details on this process can be found in INDOT'S Buyer's Manual.

Task 10.07 Right-of-Way Clearance and Certification

After the acquisition of property, INDOT makes arrangements for the clearance of the property. Once property owners have been paid and issued the proper notices to vacate personal property from acquired right-of-way, INDOT Real Estate Property Management will turn the parcel over to the district for clearing. Clearance activities include relocation of utilities, environmental mitigation, asbestos inspections and demolition of all structures. If buildings or other structures have been acquired, it may be desirable to demolish these structures as soon as possible to minimize vandalism and trespassing. When time permits, the District Real Estate Office can rent the structures until needed for construction, or the District Real Estate Office can attempt to sell the structures through public auction. For more information on clearing right-of-way, see INDOT's, Real Estate, Property Management Manual.

The primary objective of land acquisition is to acquire and clear right-of-way for construction. INDOT Real Estate Property Management will certify the status of the acquired right-of-way as clear or clear with exception and that all Federal and State regulations have been followed in the acquisition process. This documented status is a primary milestone in the Project Development Process and will be forwarded to appropriate INDOT staff for distribution and inclusion in the PSE. Federal Highway Administration requires the certification letter before approving the PSE.

Task 10.08 Record Deeds

The Regional Real Estate manager ensures that a complete record of all negotiation activities is kept for INDOT. These files include:

- Applicable right-of-way plan sheets
- Title reports
- Negotiation notes
- Signed offer letters and signed contracts

It is critically important to have on file all fully executed and recorded conveyance instruments. These files are kept in the INDOT Records Unit.

Close coordination among the Project Manager, property acquisition, and design teams is necessary at all stages of right-of-way acquisition in Step 10. This coordination should include a review of impacts to local property owners in the early stages of this process. Right-of-way acquisition is an important milestone that often dictates the project completion schedule. Therefore, the Project Manager should coordinate with the Office of Real Estate to verify project status. In cases where INDOT cannot reach agreement with property owners, close coordination with the Attorney General's Office as early as possible is also necessary.

Task 10.09 Update Project Status

Based on the right-of-way activities, the Project Manager should update the right-of-way acquisition cost estimates in SPMS prior to starting Step 11. The Project Manager will complete Consultant Evaluations with input from Right-of-Way Regional Managers.

The required products for this item include:

- Right-of-Way Clearance Certification Letter which signifies that all affected properties have been acquired under State and Federal regulations and that the right-of-way is clear for construction.
- Consultant Evaluation
- Updated costs in SPMS

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 11 Stage 3 – Complete Preferred Alternative

Task 11.01: Develop Stage 3 Detailed Design Plans

Once the Right-of-Way Clearance and Certification has been completed, the Designer can begin the development of the Stage 3 Detailed Design Plans. The Designer should consult the Indiana Design Manual, Chapter 14 as a guide for what is to be included in the plans.

Stage 3 Detailed Design Plans should represent a completed design although changes still might be made due to revisions to existing conditions, right-of-way negotiations, and so forth. The principal work items in Stage 3 include the bridge design, the addition of quantities to the plans, a final cost estimate, and the PSE from FHWA.

The plans and Project Commitments Summary are reviewed by the Designer for consistency with the final environmental document. The Commitments Summary Form will be used during design to keep track of how each of the environmental commitments are being implemented or considered. Additional commitments (either firm commitments or others to be considered later) may be made during design, land acquisition, or construction and should be added to the Commitments Summary Form.

When the Designer prepares the Stage 3 Detailed Design Plans, the final environmental document should also be incorporated into the plans to minimize or avoid environmentally sensitive areas identified by the Production Management Division's Office of Environmental Services (i.e., 4(f) properties, wetlands, critical habitat, endangered species, hazardous waste sites, cemeteries, etc.). At the end of this step, the Designer should have a complete set of Stage 3 Detailed Design Plans ready for review.

Task 11.02: Notify Utility to Prepare Relocation Plans

The Designer will submit electronic and paper copies of the project plan sheets to the Production Management Division's Utility Section in order to get the utility companies within the project right-of-way to develop their relocation plans. The Utility Section will notify the utility companies that the plan sheets are available within 2 days of receipt.

Task 11.03: Relocation Design by Utility (180 Calendar days)

The utility companies will have 180 calendar days to complete the relocation plans from the time they are notified of the availability of project plan sheets by the Utility Section.

Task 11.04: INDOT Review of Public Utility Relocation Plans

The Utility Section will review the utility relocation plans for conflicts with the road construction project and other utilities within the proposed project right-of-way.

Task 11.05: Prepare Utility Agreements

The Utility Section will prepare and submit utility agreements to the affected public utilities within the project limits.

Task 11.06 Utility Work Plan Negotiations

The Utility Section will negotiate with the utility to develop an acceptable utility work plan.

Task 11.07: Signed Agreements by Public Utility Received

The Utility Section will receive the signed utility agreements from the affected public utilities. The agreement will be submitted for necessary signatures from State of Indiana personnel.

Task 11.08: Agreement Approval

The Utility Section will receive signed and approved utility agreements from the Indiana Attorney General. Upon receipt, the OUE will update SPMS.

Task 11.09: Issue Utility Permits / Notice to Proceed

Upon receipt of executed agreement documents between INDOT and affected public utilities, the Utility Section will issue the permits for the utility to proceed with relocation efforts.

Task 11.10: Notify Railroad to Prepare Force Account Estimate

The Railroad section will notify the affected Railroads within the project limits to prepare force account agreements.

Sub-Task 11.10.01: ***Force Account Estimate Supplied by Railroad***

Sub-Task 11.10.02: ***INDOT Review of Railroad Force Account Estimate***

Sub-Task 11.10.03: ***Prepare Railroad Agreements***

Sub-Task 11.10.04: ***Signed Agreements by Railroad received***

Sub-Task 11.10.05: ***Railroad Agreements approved by INDOT***

Sub-Task 11.10.06: ***Issue Railroad Permits/Notice to Proceed***

Sub-Task 11.10.07: ***Railroad Permits and NTP issued***

Task 11.11: Complete Final Waterway Permit Applications

The Production Management Division's Waterway Permits Section will complete the necessary waterway permit applications required by the various resource agencies with jurisdiction over the body of water being affected by the project.

Task 11.12: Submit and Receive Permits

The Waterway Permits Section will submit and receive the necessary permit applications required by the various resource agencies with jurisdiction over the body of water affected by the project. The Waterway Permits Section will keep the permit on file and provide the Project Manager with a copy of the permit for the project file. Additionally, the Waterway Permits Section will provide a copy of the permit to the Project Engineer upon successful letting of the project to be posted on site as required by resource agency. Any permit conditions not already reflected in the design will be incorporated into the design of the project. At this time, a 180-day statute of limitations (SOL) on claims against USDOT and other Federal Agencies may be published in the Federal Register announcing the federal permitting action.

Task 11.13: Final Field Check / Constructability / Risk Review

When project plans are 90% complete, the Designer will hold a Final Field Check with the Project Manager, District Construction, utility representatives (if necessary), and design review personnel as appropriate. The project should be reviewed for consistency with the NEPA document. Mitigation commitments should be incorporated into the project. The District Construction personnel will also discuss constructability/risk of the project as laid out by the Designer and make suggested modifications to the plans for the Designer to incorporate prior to the submission of the next plan review stage.

Task 11.14: Submit Stage 3 Detailed Design Plans

The Stage 3 Detailed Design Plans will be electronically submitted by the Designer and reviewed by the Office of Roadway Services, the Office of Structural Services, or the appropriate District staff as directed. The Reviewer has 30 days to review the plans and return them to the Designer. The Designer should consult the Indiana Design Manual, Chapter 14 as a guide for what is to be included in the submittal.

The Designer should submit the plans electronically into ERMS. Non-IPOC projects are to be submitted to the appropriate District Coordinator (Coordinators 1-6) and IPOC projects are to be submitted to the Central Office Coordinator (Coordinator 7). The Designer should notify the Coordinator and the Project Manager that the plans have been submitted into ERMS. The Coordinator then notifies the Project Manager that the submittal is ready for review. The Project Manager will review the submittal documents and determine which reviews need to be completed. After concurring that the submittal is complete, the Project Manager will inform the Coordinator of the required reviews. The Coordinator will then route the plans to the Reviewer. As part of the review, the Reviewer will provide markups and an evaluation. If a resubmittal is needed, the Reviewer should notify the Coordinator and the Project Manager, and the Project Manager must decide whether to adjust the schedule accordingly. Also, the Reviewer should notify the Coordinator and the Project Manager if a review of the Final Tracings will likely be needed.

After completing the review and the evaluation, the Reviewer will return the plans, any markups, and the evaluation back to the Coordinator through ERMS. The Coordinator will notify the Project Manager and the Designer of the completed review, and that the review comments and evaluation are available in ERMS for the Project Manager to review. The Project Manager will review the markups and the evaluation for concurrence, noting if there are any further concerns to be addressed such as failure to incorporate committed mitigation measures into the design of the project. The Project Manager will review the Project Commitments Summary for consistency with the final environmental document and to ensure that all commitments have been incorporated into the project plans and specifications or otherwise implemented as agreed to by the Office of Environmental Services. Once satisfied that all commitments have been met and that the review is complete, the Project Manager will then notify the Designer and the Coordinator that the review and evaluation are complete. The Coordinator will then process the review and the evaluation for the Designer. At this time, the Designer will be able to view any markups and the evaluation.

A flowchart illustrating this plan submittal and review process is provided in the Appendix.

Task 11.15: Contract Time Sets

The project plans will be submitted to the District Construction Engineer who will develop contract time sets for the project. The District Construction Engineer will typically require a minimum of two weeks to complete this activity.

Task 11.16 Final Geotechnical Engineering Review

The Designer will be responsible for submitting the Final Geotechnical Review form and a complete set of plans (including cross sections) to the geotechnical engineer that completed the geotechnical report. Once the plans have been reviewed the Final Geotechnical Review form should be returned to the

Designer either showing that the plans comply with geotechnical report or that the plans need some modifications. If the plans require modifications, the corrections should be made and plans and a new form should be resubmitted to the above noted geotechnical engineer.

Task 11.17: Hold Public Information Meeting

The Project Manager will work with the INDOT Public Hearings Office to set up a public information meeting to inform the public of the final configuration the project will have and the proposed sequencing of the project construction.

Task 11.18: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

Step 12 Prepare Final Tracings Package

Task 12.01 Prepare Final Construction Cost Estimate

The Designer will prepare the final construction cost estimate for submission with the contract package. This estimate will include specifications and quantities of materials required for the project utilizing the latest cost analysis information obtained from the most recent letting trends.

Task 12.02: Prepare Final Special Provisions (Including All Waterway Permits)

The Designer will prepare the special provisions document for submission with the contract package.

Task 12.03: Prepare Final Tracings

The Designer will prepare the final tracings for the project to be submitted electronically through ERMS.

Task 12.04: Final Project Document Review

The Designer will submit the final contract document to the Project Manager for review. The Project Manager will be responsible for checking that all comments given by the Reviewer from the previous submission have been addressed. The project is again reviewed for consistency with the NEPA document. The **Commitments Summary Form** and a copy of the NEPA document is provided to the appropriate INDOT District Office and included in the letting documents for the project. These documents are to be forwarded by the Project Manager to the Project Engineer responsible for the construction of the project

Task 12.05: Production Project Team Review

Upon the end of the project's development, a Production Project Team Review is held to give information and feedback amongst all the production units concerning successful and unsuccessful activities which occurred during the project's development. A report documenting these activities is prepared by the Project Manager or the Designer and submitted to the Director of Production Management.

Task 12.06: Project Time Float Reservoir

This maximum allotment of 60 days is built into the project schedule and is to be managed by and used at the discretion of the Project Manager for unforeseen issues that arise throughout the project's development.

Task 12.07: Project Documents Submitted to Contracts Division

The Designer will submit the project document to INDOT Document Management via ERMS 90 days prior to the letting date. The document will contain the project cost estimate, specifications, quantities, special provisions, permits, phasing/constructability and project plans.

The Project Manger will be responsible for making sure all of the hard copy documents have been submitted by the Designer. Once this review is complete, the project Manager will submit plans and documentation to the INDOT Records Unit.

Task 12.08: Update Project Status

The lead agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all participating agencies and the public.

300.0 Minor Projects

The following chapter describes the Project Development Process for Minor Projects. Key steps are outlined, and individual activities and sub-activities are explained. Specifically, each activity will state:

- What is the work to be done?
- Who performs the work?
- What is needed to complete the work?
- What must occur before work can begin?
- What is the product or deliverable that comes from the work?

The stakeholders involved in each activity are identified, areas of public involvement are indicated, and instances of IPOC Concurrence are detailed. Please refer to the Minor PDP Gantt Chart in the appendix.

Step 0 System-Wide Analysis / Project Identification / Draft Purpose and Need

Project candidates can be identified through statewide system analysis completed by the Office of Urban & Corridor Planning, District Planning/Programming Office or by local government or constituent requests. The Office of Urban & Corridor Planning is responsible for analyzing current and future transportation mobility needs and scoring/prioritizing projects in the "Major New" project program. Some proposed project candidates are discarded after various levels of analysis if no need is found. However, if a project is determined to have sufficient statewide system need, the office prioritizes it and presents it annually to the INDOT Planning Oversight Committee (IPOC) for approval of the initial schedule delivery and budget of each fiscal year's new projects.

Alternatively, another source of new candidate projects, the Office of Urban & Corridor Planning develops a Long Range Plan that looks at a minimum of 20 years into the future according to US DOT Statewide Planning Regulations. INDOT's Long Range Plan focuses on identifying capacity-adding projects. As the projects are identified by the Long Range Planning section within the Office of Urban & Corridor Planning, the Office of Budget and Finance develops the fiscal forecast for the specified 20-25 year period.

The majority of minor projects will consist of road and bridge preservation. These projects will be data driven gathered through sufficiency ratings. There should be a four year pavement and six year bridge preservation program.

Fiscal constraint is then applied to develop a project specific statewide Long Range plan which is approved by the Commissioner. The Long Range plan is used to not only fulfill the CFR and state requirements listed above but also for:

a. Air Quality modeling in non-attainment and maintenance areas throughout the state.
b. Provide information to INDOT customers and legislature about major transportation investments statewide.
c. Provide candidate projects for the Major New – CO program
d. Identify future funding needs of the agency
e. Allows coordination with pavement preservation programs and other infrastructure investments.

Step 1 Professional Services

Task 1.01: IPOC Concurrence – Authorization of Project Identification and Schedule

Most projects will be added to INDOT's 10 year list at the approval of the IPOC committee. The IPOC committee will approve a schedule and budget. At this time, this minor project will either be transferred to the Division of Production Management (Central Office) or remain in the home District and a Project Manager will be assigned a project and associated Des Number.

Note: Some projects with IPOC committee approval will be approved over a shorter planning horizon and not be in the initial 10 year plan.

Task 1.02: Project Manager Assigned

The District Consultant Services Manager or Office Manager of the Production Management Division's Office of Project Management will assign a member of their staff as Project Manager for an IPOC/Non-IPOC project. At this time, the Project Manager will accept ownership of the project.

Task 1.03: Prepare Business Case

The Project Manager will develop a business case for an IPOC/Non-IPOC project. The business case will include the following items:

A. Project Transfer: The Project Manager will work with the Project Sponsor the Office of Urban and Corridor Planning to transfer or copy all relevant information on this project.

B. Confirm Project Limits: The Project Manager with the Project Sponsor or the Office of Urban and Corridor Planning will confirm the study area and project terminus.

Defining an adequate study area is critical to project success. The study area size determines the general area for which data is to be collected and from which the stakeholders are to be identified and engaged. The initial study area limits should have been identified from INDOT's Long Range Plan or systems analysis that identified the problem. The study area must be big enough to include all areas that contribute to the transportation problem and encompass the range of alternative solutions appropriate to solving the problem.

C. Draft Purpose and Need Statement: At this time, the Project Manager will confirm the initial purpose and need developed by the Project Sponsor or the Office of Urban and Corridor Planning.

D. Milestone Dates: The Project Manager shall develop the project's milestone dates and review the preliminary cost estimate as prepared by the Project Sponsor or the Office of Urban and Corridor Planning. While there is still no determination of reasonable alternatives or project solutions, there should be enough information to update the magnitude of the construction right-of-way acquisition to develop a cost estimate and provide a milestone of minor events.

E. Confirm that the project is in the TIP and INSTIP.

Task 1.04: Conduct Red Flag Summary

The Project Manager will request that a representative of the Office of Environmental Services and other District Production or Production Management Division staff as appropriate conduct a Red Flag summary

for this project. Red Flags, including environmental, right-of-way, utility, and engineering issues, are locations of concern within the study area. Red Flags do not necessarily identify locations that must be avoided, but rather identify locations that may entail additional study coordination, creative management or design approaches, or increased right-of-way or construction costs. Locations that must be avoided are considered and referred to as "fatal flaws". A "fatal flaw" could involve significant, negative economic, environmental or historical impact in an area. The Project Manager should ensure consultation with the appropriate specialists to determine the level of concern for each Red Flag item.

There are several ways to identify Red Flag locations. It is recommended that the first data source consulted be secondary sources. A site visit is the next level or source for Red Flag analysis conducted during planning. More in depth analysis, requiring additional work such as borings or "digs" are typically conducted during later steps of the PDP. Areas of potential concern are utility locations, existing structures, drainage problems, waterways, geotechnical issues, topography and existing right-of-way and/or land use issues.

The appendix contains a sample of the Red Flag summary that can be used to identify potential Red Flags. It is intended as a guide to what items and issues should be considered and addressed in the required "Red Flag Summary Report". For minor projects, "Red Flags" must be identified on one of the study area base maps. It is understood that not all information may be applicable to mapping.

Task 1.05: Develop Public Involvement Plan

Stakeholder involvement is essential for every step in the minor PDP. Stakeholders provide information and offer a unique perspective in identifying the problem and what changes or improvements are needed to have a successful project. Stakeholder involvement is also required by the FHWA during the planning and environmental processes.

Stakeholders are individuals and groups who are or may be impacted by or have an interest in the project. In some cases, federal regulations define who stakeholders are. Typically stakeholders include professional and technical staff from INDOT and affected local governments and agencies, elected and appointed officials, the general public, people and businesses. Stakeholders for environmental justice include low-income and minority populations within the study area. Below is a list of potential initial stakeholders.

Examples of Stakeholders

- INDOT
- District Offices
- Federal Highway Administration
- Federal Transit Agency
- Local Transit Agency
- Metropolitan Planning Organization
- Local Public Agency
- Civic and Community Associations
- General Public
- Environmental Justice Population
- Resource Agencies
- Special Interest Groups
- Major Commercial Facilities
- Schools and Educational Institutions

Every minor project should have a documented public involvement plan (PIP). The Project Manager is responsible for the development and coordination of the PIP with the Public Hearings Office and the

Office of Environmental Services. The PIP outlines the strategy and responsibilities for informing and involving stakeholders during the planning phase and all the steps of the PDP.

For projects being developed as Environmental Assessments (EAs), the INDOT Environmental Policy Administrator will consult with the FHWA Environmental Program Manager to determine which EAs will require a Community Advisory Committee (CAC) and public/agency meeting(s) during the development of purpose and need and alternatives screening. The Office of Environmental Services will assure that these PIP activities are included in the associated project PIPs.

PIP development should be during the "kick off" meeting and should evolve as the stakeholders have an opportunity to comment and contribute ideas to it. Technically, the PIP continues through construction and may need to be revised to address changing public and stakeholder concerns and needs throughout the project.

The PIP can include a mix of informational meetings, newsletters, web pages, special events, educational handouts and booths at a local event, or more formal meetings. The magnitude of the project should be the guide to the extensiveness of the PIP. In general, the PIP should:

- Define and describe public involvement actions, activities and publications to be conducted in each step in the PDP.
- Define the strategy to engage and solicit information, ideas and opinions from stakeholders (for example, the stakeholders' definition of the problem and idea of an acceptable solution).
- Explain how stakeholders' ideas and opinions will be incorporated into the PDP decision-making process.
- Identify the actions and approaches to inform stakeholders about the problem being studied, planning process, potential project alternatives under evaluation, justification for eliminating alternatives, and recommendations.
- Identify responsibilities for managing and implementing the actions, responses, the timing and funding for the public involvement activities.
- Clarify how, where and who will implement and document the activities, actions and materials used during the process.

Task 1.06: Prepare Scope of Services

At the appropriate time (with respect to projects on the long range planning list and schedule), the Project Manager will develop and submit the following to the Division of Contract Administration (CO/CA):

- Request For Proposal Form (RFP) - see Appendix C for form and submittal information.
- Contract Information Form (CIF) - see Appendix C for form.

This request should be placed on the proposed 18 month RFP list and later updated (2 months) before advertisement. Advertisement of RFPs will be monthly. The Scope of Services is written which outlines the intent of the contract. The scope of services will become Appendix A of the Consultant's contract. A brief description of the services and required prequalification for the related work types are included in the advertisement for RFP. These work types cover the work to be performed by the prime consultant and sub consultants.

Engineering Assessment Studies

Develop purpose and need, proposed design guidelines, preliminary alternatives, necessary coordination with public agencies and stakeholders, development of preliminary project costs, etc.

Environmental and Engineering Assessment studies proceed together. Engineering recommendations consider the associated social, economic, and environmental impacts.

Environmental Studies

These studies use the engineering assessment studies. On minor projects, the document will be a Categorical Exclusion (CE). A CE does not involve significant environmental impacts. If an Environmental Impact Statement (EIS) and Record of Decision (ROD) or Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) become necessary, the project will become a major project. See the Procedural Manual for Preparing Environmental Studies.

Plan Development

This phase may include the following:

- Topographic Survey Data Collection
- Geotechnical Engineering
- Roadway Design
- Bridge Design
- Traffic Analysis
- Traffic Signal Design
- Sign Design
- Lighting Design
- Utility Relocation and Coordination
- Subsurface Utility Engineering (SUE)
- Right-of-Way Plan Development
- Environmental Mitigation Design
- Title VI Demographic Collection

Real Estate Phase

This phase may include the following:

- Project Management for Acquisition Services
- Title Search
- Value Analysis
- Appraisal
- Appraisal Review
- Negotiations
- Closing (INDOT function)
- Buying
- Relocation
- Relocation Review (INDOT function)

Construction Phase

Construction inspection is normally included in open-ended construction inspection contracts.

The description of the required work will be expanded to provide details, requirements and guidance to the Consultant. The details may provide:

- Project length
- Number of bridges to be replaced/rehabilitated
- Number of small structures
- Number of traffic signals to be designed/modernized

- If some type of geotechnical services are required
- If additional right-of-way/relocations are required
- Construction of mitigation sites
- Any other items

Task 1.07: Advertise RFP

The CO/CA will advertise the RFP for 21 calendar days. During that period of time, they will receive Letters of Interest (LOI) from a list of pre-qualified consultants. The CO/CA will prepare and request scoring or rating of the interested consulting firms.

Task 1.08: Review and Evaluate RFP Responses

The Project Selection Team Leader of the managing office (depending on the project classification) will prepare a team of 3 to 5 members to score the LOI for each item submitted by the interested consulting firms.

The scoring team should complete the scoring, signed tabulation form and selection score agreement then submit results to the Project Selection Team Leader, who will tabulate the scoring and rankings and return the results to the CO/CA.

Task 1.09: Recommend and Approve RFP Selection

The CO/CA will submit the scoring to the Consultant Selection Review Committee who will review scoring tabulations, capacity and DBE/MBE/WBE compliance statement and forward recommendations to the Commissioner. The CO/CA will then publish a list of selected firms on the INDOT website.

Task 1.10: Scope Meeting and Fee Preparation

The Project Manager and the CO/CA Consultant Service Section will send notification letters and schedule scope of work meeting with selected consultants. The consultant notification letter will include:

- Meeting date
- Known scope of work
- Appendices A to D for open ended contracts
- Ask for overhead rates, Federal Contract Compliance Manual (FCCM), and audit data
- Certified payroll, billing rates
- Prime and sub-consultants prequalification
- Direct and non-salary costs

At the meetings the Project Manager will provide the following information as available:

- Mini-Scope or Engineer's Report (if available)
- Draft Purpose and Need Statement
- Red Flag Summary
- Other relevant materials or studies

The selected consultant will then prepare and submit a fee proposal to the CO/CA Consultant Services Section. The Project Manager and the CO/CA representative will analyze and comment on the fee proposal.

Task 1.11: Contract Negotiations

The CO/CA Consultant Service Section will negotiate fees with the Consultants. If unable to reach an agreement on the negotiated fees, the CO/CA will contact the next ranked Consultant and will start the scope of work process anew.

Task 1.12: Agreement Preparations

Once the fees are negotiated and agreed upon with CO/CA, the CO/CA Consultant Services Section will fill out the work order request and FMIS form for the FHWA approval for federally funded contracts. After FHWA's approval, the funds will be posted to the proper account.

After funds have been posted, a draft contract will be prepared by the CO/CA Consultant Service Section. It will include predefined appendices that serve specific purposes. This document will be submitted to the CO/CA Document Control Section.

Task 1.13: Agreement Approval and Signatures

The CO/CA Document Control Section will transmit an agreement to Consultants for signatures. The Document Control Section will email the Department of Workforce Development and the Department of Revenue to verify status.

The Document Control Section obtains INDOT signatures on the contract and forwards to the Department of Administration, State Budget Agency and the Attorney General's Office for approval.

Task 1.14: Signed PO Number Assigned / Issue Notice to Proceed

After the signature process, the CO/CA Consultant Service Section will issue a notice to proceed. The Project Manager will update the schedule and verify the TIP and INSTIP status.

Step 2 Conduct Research and Technical Studies

Task 2.01: Initial Technical Analysis

In deciding what data is needed and what should be collected, the Project Manager should consider how stakeholders define the problems or issues and what data is needed to confirm their issues and what data is needed to confirm or quantify the problem from their perspective. The Project Manager should determine the type and level of analyses necessary to clarify the draft purpose and need statement. Typical analysis could include:

- GIS Research
- Utilities
- Traffic modeling and diversion analysis
- Capacity analysis
- Crash data
- Right-of-way impacts
- Geological and environmental
- Geometric analysis

To avoid unnecessary study costs and save time, prior to collecting new data, existing data sources should be collected and reviewed. This may include prior studies, secondary sources and previous reports. This review should include a thorough evaluation of existing aerial photography, geotechnical analysis, travel patterns, system performance, crash data and transportation solutions that have been analyzed and proposed for the area in the past. This review should also identify key areas where available data is insufficient to define or analyze the problem. Only then should new data be collected. Some existing resources for use in technical analysis include:

- Existing INDOT and MPO planning studies
- Transportation and land use plans
- Population figures and projections
- Economic indicators
- Traffic counts and planning level traffic projections
- Origin and destination surveys
- Speed and delay studies
- Geographic Information Systems (GIS) analyses including databases form other state agencies such as DNR, IDEM, geological and cultural resource maps.
- Early Environmental Justice and Title VI/Demographic Evaluation

Task 2.02: Contact Resources Agency (Early Coordination)

Early Coordination for Projects Likely to Require an EA or a CE

Issue an Early Coordination Letter to solicit input from agencies. The Early Coordination Letter will include a map of the study area and a description of the proposed action. For more information, please refer to the Early Coordination section of the *Indiana Categorical Exclusion Manual.*

Information in the Early Coordination Letter should include:

- Mini-scope
- Draft purpose and need

- Study area and project termini
- Preliminary schedule

Task 2.03 Collect Traffic Data and Analyze

Current Counts and Traffic Statistics: The Project Design Team will contact the Planning Division's Traffic Monitoring Section to get current counts and traffic statistics.

Forecasting: The Project Design Team shall contact the Senior Traffic Forecasting Technician of the Modeling and Forecasting Section at the Corridor and Urban Planning to request forecasting numbers. The Project Design Team will submit the traffic projection request form to the Modeling and Forecasting Section. It is important to include a marked location map of the study area. The traffic projection request form can be found online at **http://www.state.in.us/dot/div/contracts/design/dmforms/App05-2B.pdf**.

Crash Data: The Project Design Team shall contact the Safety Management Engineer of System Assessment and Planning Section of the Division of Planning to get a password and ID number. Crash Data is available on the State Police website: **http://www.crashreports.in.gov/Public/Home.aspx**.

Task 2.04: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made.

Step 3 Identify and Evaluate Alternatives

Task 3.01: Perform Engineering Studies

The Designer will most likely want to field check the area of interest. The Project Design Team will be working from aerial photographs, topographic maps and existing road plans. Crash data and history should be available; the traffic data will likely be just coverage counts. Preliminary engineering is conducted to develop alternative(s) concurrent with the environmental studies.

Task 3.02: Perform Environmental Field Studies

The Designer will be providing the six reports as outlined below. The affected parcel owners within the study area shall be notified prior to carrying out these activities by the party developing the NEPA documentation. The Designer, with assistance from the Office of Environmental Services, will be responsible for mailing out Notices to affected property owners if borings are required.

Sub-Task 3.02.01: Complete Phase 1 Archaeological and History/Architecture Surveys

The Archaeological Survey and History/Architecture Survey are detailed field inspections that seek to locate, identify, and evaluate the cultural resources within a project area. In both cases, the cultural resources that are identified (above or below ground) are evaluated to determine their potential eligibility for listing on the National Register of Historic Places. Archaeological and Historic/Architecture Surveys may include records research, site walkthroughs (with photo documentation), or exploratory subsurface investigations. Varying levels of reports and coordination with resource agencies may be needed depending on the level of investigation conducted.

These reports will be submitted electronically. The survey will be forwarded to the Cultural Resources Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Sub-Task 3.02.02: Complete Phase 1 Level Ecological Surveys

Ecological Surveys must be conducted by qualified personnel and should be commensurate with the scope of the project and as directed by resource agencies. They may include database searches as well as field studies and reports.

These reports will be submitted electronically and forwarded to the Ecology/Permits Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Sub-Task 3.02.03: Complete Environmental Site Assessment Screening

Environmental Site Assessment Screening must be done by qualified personnel. It can include reviews of historical databases to ascertain historical property uses or contamination histories as well as site visits and property owner interviews. A report will be prepared that summarizes findings and recommends further (subsurface) investigation if necessary.

These reports will be submitted electronically and forwarded to the Environmental Policy Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Sub-Task 3.02.04: Complete Relocation Assistance Program Conceptual Survey

The Relocation Survey provides a report of the potential impacts to residences and businesses, the availability of comparable properties, an analysis of the financial impact to the project cost, and other variables that will be taken into consideration for each potential alignment.

The Conceptual Stage Report will be used to develop the preliminary plan that should be forwarded to the Project Manager.

The conceptual Survey and Reports are discussed fully in the *Relocation Manual* in the Production Management Division's Office of Real Estate.

Sub-Task 3.02.05: Preliminary Air Quality Hot Spot Analysis

Project-level air quality analyses may be necessary for projects that are anticipated to add a large amount of traffic capacity to the system, especially when high volumes of truck traffic are expected (more than 10,000 trucks). As part of the NEPA process, the Environmental Policy Administrator, in coordination with FHWA, will determine whether an analysis is necessary. If any studies are necessary, they will be initiated by and reviewed by the Office of Environmental Services. The results of any studies will be incorporated into the NEPA document.

Sub-Task 3.02.06: Complete Social and Economic Resource Reports

These reports will address possible social and economic impacts of proposed projects, and may include Environmental Justice Assessments, Business Needs Surveys, and other related studies as outlined in INDOT's *Environmental Procedural Manual*. Studies may be conducted as stand-alone documents or may be incorporated into the overall Environmental Document. This would be an appropriate time to discuss Title VI requirements under 23 CFR 200.9(b)(4) – demographic data collection – as appropriate.

These reports will be submitted electronically and forwarded to the Environmental Policy Administrator in the Office of Environmental Services, who is responsible for approving reports and requesting further work.

Task 3.03: Analyze and Screen Preliminary Alternatives

This is the second phase of analysis. The cost analysis will still be parametric as it was in the first analysis. The practicality of the various conceptual solutions due to cost and overall effectiveness will be determined. All planning studies must include a cost analysis for each reasonable alternative considered. This is needed both to compare the alternatives and to identify the ranking of the alternatives. A planning level cost analysis may range from simple comparisons of capital costs to detailed life cycle cost analyses. Capital costs are usually developed from a build cost comprised of estimating typical segments, atypical segments, system-wide elements, and other needs such as real estate costs. Cost estimates should be adjusted appropriately for inflation using a construction cost index. A consistent base year should be used in comparing dollar amounts between alternatives.

Task 3.04: Hold Public Information Meeting

The report with the preliminary alternatives is now to be presented to the public for input concerning defining the range of alternatives as well as requesting input on methodologies used to analyze alternatives. The public should be encouraged to suggest CSS strategies that should be considered during project development. This public information meeting should be an informal presentation of the various alternatives seeking the response of the public. The Public Hearings Office will schedule and advertise the meeting. The Designer will write the public meeting minutes, will document the comments of the meeting, and provide the distribution of Title VI demographic surveys to the public.

Task 3.05: Environmental Review

The Designer will be responsible for preparing the Environmental Review. All of the following topics are described in the *Procedural Manual for Preparing Environmental Studies*.

The following information is required for each alternative to start the environmental review:

- Alignments and project termini
- Estimate of corridor widths for each alternative alignment
- Names and addresses of affected property owners (from the Office of Environmental Services or from the County Court House, or from the information already obtained in Activity 46 and/or 64)

The following studies (Sub-Activities 66 through 70) must be completed and submitted to the Environmental Policy Administrator. That person then will distribute the studies to the proper reviewer for review and comment. Refer to the *Indiana CE Manual* for more details.

Sub-Task 3.05.01: Complete Phase 1 Environmental Site Assessment

This will be reviewed by the Hazardous Materials Unit Supervisor.

Sub-Task 3.05.02: Complete Preliminary Noise Analysis

This will be reviewed by the Environmental Policy Administrator.

Sub-Task 3.05.03: Complete Farmland Coordination

This will be reviewed by the Environmental Policy Administrator.

Sub-Task 3.05.04: Complete Determination of Effects for Historic Properties

This will be reviewed by the Cultural Resources Administrator.

Sub-Task 3.05.05: Complete Preliminary Air Hot Spot Analysis

This will be reviewed by the Environmental Policy Administrator.

Task 3.06: Update Estimated Project Cost

The project estimate should be updated by the Project Manager with current costs. This project estimate will be calculated using parametric prices. The project estimate should be based on the mean project cost of the viable alternatives. This project estimate should be compared to the previous estimate in preparation of reporting to IPOC.

Task 3.07: IPOC / District Concurrence

The project will be presented to the committee for concurrence. This will be a formal electronic submission which will include the final concept solution screening report and the scope of services.

Task 3.08: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made.

Step 4 Identify Preferred Alternative

Task 4.01: Develop Design Elements for Assessment of Alternatives

The Designer will develop the design for the alternatives. That design will include and not be limited to Horizontal/Vertical Alignment, Typical Section, Intersection Design, Interchange Design and preliminary drainage (open ditch or curb and gutter). The curb and gutter and open ditch design do not need to be elaborate, just enough to establish the approximate construction limits. The Office of Environmental Services may request additional design for roadways near or in environmentally sensitive areas. These design elements should follow all INDOT Standards and Specifications as well as the *Indiana Design Manual*, in particular, Part V.

This design of the alternatives will assist in selecting the Preferred Alternative.

Task 4.02: Soil Borings at Critical Locations

The Designer will submit the following plan sheets to the Manager of Office of Geotechnical Engineering to request soil borings at critical locations:

- Title Sheet
- Typical Section Sheet(s)
- Plan and Profile Sheet(s) with all bridge and culvert locations marked

Soil borings will be done if the Office of Geotechnical Engineering suspects peat, marshy areas, or karst (sinkholes), and where there will be rock cuts. Also, soil borings are required in urban areas, where some utilities may have large pipelines or cross county towers, and on historical or recreational properties. Soil Borings would be required to insure that the aforementioned facilities do not become unstable when piles are driven or large amounts of cut are required.

Any poor soils discovered from this review should be considered when selecting a preferred alternative.

The Office of Geotechnical Engineering will be responsible for mailing out Notices to affected property owners if borings are required.

This activity is comprised of the following sub-activities:

Sub-Task 4.02.01: Field Investigation

Sub-Task 4.02.02: Laboratory

Sub-Task 4.02.03: Engineering

Task 4.03: Prepare Environmental Document

The Designer will take the findings from the Environmental Review and create the Environmental Document. Details of what is required for a Environmental Document can be found in the *Procedural Manual for Preparing Environmental Studies (replace with Indiana CE Manual*, provided by the Office of Environmental Services.

The Environmental Document will be submitted to the appropriate reviewer as outline in the CE Manual.

This document will give the Designer and INDOT an idea of problem areas or "Fatal Flaws" for the proposed alternatives, if any (e.g. 4(f) Historic Properties or Endangered Species).

Task 4.04: Complete Step 4 Engineering Activities

As the Designer collects Environmental Review information, any known environmentally sensitive areas should be identified so the design of the alternative(s) can be updated. Any modifications made due to environmentally sensitive areas should be documented in each environmental review step.

Task 4.05: Hold First Constructability/Risk Analysis and Operations Review

The Designer will prepare the Design Elements for the Reasonable Alternatives and send these plans to the District Construction Engineer, Central Office Construction Field Engineer and Project Manager for review and comment. Construction can identify existence of parallel railroads, high tension lines, minor utility conflicts and offer comments on how the project will be built, for example, multiple contracts and/or phasing of the project. This information will be returned to the Designer and forwarded to the INDOT Project Manager. During this time the Project Manager will update the Red Flag Risk summary.

Task 4.06: Analyze and Screen Alternatives

The Designer will submit the Design Alternatives after all environmental and construction comments have been addressed to the Feasibility Section Manager. That person will then evaluate the alternatives with FHWA. It is important to remember to seek input from the local officials and/or stakeholders during this process, especially regarding possible CSS strategies.

Task 4.07: Identify Preferred Alternative

After the reasonable alternatives have been analyzed and screened, the Feasibility Section Manager will identify the Preferred Alternative with the help of but not limited to the INDOT Project Manger, FHWA, the Designer, the Environmental Policy Administrator, the Manager of the Office of Urban and Corridor Planning, the District Planning Administrator, and any required help from the Office of Production. The selection of the preferred alternative will be made by holding a meeting with the previously identified individuals.

Once the preferred alternative is chosen a short report, including a new cost estimate per contract or phase, will be produced by the Feasibility Section Manager and presented to the IPOC committee for approval (refer to Activity 79).

Once the preferred alternative is selected, the Designer will complete the environmental document and submit it to the Manager of the Office of Environmental Services who will review the document and distribute it to others for review.

Task 4.08: Initiate Biological Assessment (BA)

Once the preferred alternative is chosen, the Designer should initiate the biological assessment (BA) for the preferred alternative. When the BA is complete, the Designer should submit the BA for review and comment to the Ecology and Waterways Permit Administrator.

The BA identifies endangered species within the proposed corridor. The BA is forwarded to the United States Fish and Wildlife Service for its review. If the United States Fish and Wildlife Service determines that a project will jeopardize the continued existence of a federally listed endangered or threatened species or adversely modify its critical habitat, then the project cannot be permitted.

Task 4.09: Update Estimated Project Cost

The project estimate should be updated by the Project Manager with current costs. This project estimate will be calculated using parametric prices. The project estimate should be the project costs for the selected preferred alternative. This project estimate should be compared to the previous estimate in preparation of reporting to IPOC.

Task 4.10: IPOC/District Concurrence

Once the preferred alternative is chosen, the Office of Program Management or District Project Management will present the preferred alternative to the IPOC/District committee for concurrence. The information that the IPOC/District Committee will require is the preferred alternative that has been selected, justifications for any cost increases above 10% of the original approved cost or exceeding $5 million of the original approved cost, and justification for any proposed schedule changes. The CE/EA approval should be in accordance with the CE manual.

Task 4.11: Local Permitting and Zoning Coordination

The Project Manager shall contact the MPO and/or other local zoning officials to make them aware of the proposed roadway corridor. Local officials may create a local zoning board or make their existing local zoning board aware of the proposed roadway corridor to help prevent permit and zoning changes, mainly the rezoning of agricultural land to commercial. This may help protect the integrity of the preferred alternative alignment.

Task 4.12: Abstract Preferred Alternative

After the preferred alternative is selected the affected properties are identified and given to the abstractor. The Designer will prepare 20 year Title and Encumbrance Reports for each property identified. The T&E report information is gathered from the county records and must include all ownership records for the past 20 years including liens, judgments, and a copy of the last deed of record. At this time a parcel number will be ascribed to each property owner and an abstract collected for each parcel number.

The Designer will submit the abstracts to the Central Office Real Estate Regional Manager to be input into the LRS system. They will also send copies to the surveyor responsible for the ground or aerial survey in Step 6 to help send out notice of survey and create the route survey plat sheet. The reports are also essential for the development of Preliminary Right-of-Way Plans in Step 7.

Task 4.13: Publish and Distribute Environmental Document

After the preferred alternative has been approved by IPOC, the Designer will publish and distribute the environmental document to the Project Manager, the Office of Environmental Services, FHWA, and the MPO. The environmental document will be made available to the public and other stakeholders.

Task 4.14: Hold Public Hearing

Once the preferred alternative is approved by IPOC and the environmental document has been published and released for public involvement, the Public Hearing can be held. The following should be submitted to the Public Hearings Program Coordinator to start the public hearing process:

- Three sets of design plans (10% to 15% complete)
- Three copies of the Environmental Document
- Names and addresses of effected property owners

The Public Hearings Program Coordinator will distribute the plans: one set of plans is for the Public Hearings Program Coordinator, one set of plans will be sent to the District Office, and one set is sent to a local location for public viewing (i.e. library, Mayor's Office, County Auditor, etc.).

The Public Hearings Program Coordinator will also set the meeting date, reserve the meeting venue, publish legal advertisements, and send out meeting invitations to project stakeholders.

Note this submittal can run concurrent with the publication and distribution of the Environmental Document. The public hearing should not be held any sooner than 15 days from publication of the legal notice of availability in the local newspaper.

For the NEPA hearing, a 30 day comment period is required for EA projects. SAFETEA-LU mandates that the DEIS comment period not exceed 60 days unless a different comment period is agreed upon by the agencies, the project sponsor, and all agencies.

The INDOT Hearings Examiner will set up recording equipment and record the proceedings via micro-cassette. The tape will then be given to INDOT clerical staff for transcription. The transcript is then sent to the Designer and the INDOT Project Manager within 21 days after the public hearing is held. This time allows for written comments to be received within the above mentioned comment period of 30 days.

Speakers at the public hearing should include at least one member of a community advisory committee (CAC) and/or local official. This will help show local support for the project and the preferred alternative. The Designer should also provide a distribution of Title VI demographic surveys to the public.

Task 4.15: Address Comments

The Designer will need to summarize all of the primary or minor issues recorded at the public hearing and provide responses. These issues/responses will be given to the INDOT Project Manager and the appropriate INDOT managers so the issues are responded to correctly and with consistency.

Task 4.16: Evaluate Consultant

Once the Preferred Alternative is selected, all the public hearing issues are addressed, and the environmental document is completed, the Project Manager, with input from other INDOT employees that have been involved with the development of the project, will evaluate the Consultant.

If the Consultant has been rated well, the Project Management Team will modify their contract to finish the project.

If the Consultant has been rated poorly, the Project Manager will need to consider creating an RFP to hire a new Consultant to finish the project. The Project Manager will need to realize that this process will take approximately 12 months, so the RFP should be submitted after the completion of Step 5. The original Consultant will complete Step 6 and the Final Environmental Document.

Task 4.17: Contract Method Review

The INDOT Project Manager will be responsible for setting a meeting with select individuals that have been working with the Consultant completing the project thru Step 5 of the PDP process. The result of the meeting will be to determine if the current Consultant will complete the project through the final step in the PDP progress.

Task 4.18: Prepare Scope of Services (All Remaining Steps)

The INDOT Project Manager will be responsible for submitting the required paperwork to the CO/CA if a new consultant is to be selected to complete the project.

The following forms are located in Appendix C:

- Contract Information Form
- RFP Item Description Form

Task 4.19: Contract Modification (All Remaining Steps)

If a new consultant is to be selected to complete the remaining steps of the project, INDOT will post the RFP for the remaining steps and a new consultant will be selected through the INDOT scoring system.

Task 4.20: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all agencies and the public.

Step 5 Stage 1 – Develop Preferred Alternative

Task 5.01: Ground or Aerial Survey

The 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.

Once the preferred alternative has IPOC concurrence and the Designer will be responsible for completing the electronic survey and Survey Location Route Plat.

The project location, survey termini and survey width required will need to be provided by the Designer.

To assist in the location of existing utilities, a company who is qualified to perform Subsurface Utility Engineering may be requested to work along side the surveyor.

This activity is comprised of the following sub-activities:

Sub-Task 5.01.01: ***Office Research***

Sub-Task 5.01.02: ***Utility Research***

Sub-Task 5.01.03: ***Initial Notice to Utilities***

Sub-Task 5.01.04: ***Railroad Research***

Sub-Task 5.01.05: ***Initial Notice to Railroad for Survey***

Sub-Task 5.01.06: ***Utility Marks Location (30 Calendar Days)***

Sub-Task 5.01.07: ***Monument Reconnaissance***

Sub-Task 5.01.08: ***Centerline Review***

Sub-Task 5.01.09: ***Centerline Monumentation / Establishing Benchmarks***

Sub-Task 5.01.10: ***Data Collection (Ground) - 2 Crews***

Sub-Task 5.01.11: ***Survey Book Review***

Sub-Task 5.01.12: ***Electronic Data Review***

Sub-Task 5.01.13: ***Develop Route Plat***

Sub-Task 5.01.14: ***Survey Transmittal***

Task 5.02: Perform Subsurface Utility Engineering

If Subsurface Utility Engineering (SUE) is going to be used on a project, the Designer should have the SUE provider and the survey company coordinate work to locate all the underground utilities horizontally. This will help insure that the utilities are located accurately on the survey.

Once the Designer has completed the Stage 1 detailed design plans they should coordinate with the SUE provider and discuss where vertical exploratory locations should be located to investigate possible points of conflict. If the estimate for SUE investigation is greater than the previously estimated cost, the Designer will be responsible for submitting a supplemental and justifying the extra cost.

The SUE information should be used to help decide what utilities can be avoided and which ones have to be relocated. Any utilities that can be avoided will save money in relocation costs for INDOT or possibly even the utility. Any possible redesign to avoid a utility should be discussed at the field check, the Cost to Benefit ratio checked and then, if found beneficial, incorporated in the development of the stage 2 detail design plans in Step 7.

Task 5.03: Develop Stage 1 Detailed Design Plans

Once the survey is complete and the preferred alternative is approved by IPOC, the Designer can begin the development of the Stage 1 Detailed Design Plans. The Designer should consult the *Indiana Design Manual*, Chapter 14 as a guide for what is to be included in the plans.

When the Designer prepares the Stage 1 Detailed Design Plans, the environmental document should also be incorporated into the plans to minimize or avoid environmentally sensitive areas identified by the Production Management Division's Office of Environmental Services (i.e., 4(f) properties, wetlands, critical habitat, endangered species, hazardous waste sites, cemeteries, etc.). At the end of this step, the Designer should have a complete set of Stage 1 Detailed Design Plans ready for review.

Task 5.04: Hydraulic Design Review

The Designer will submit the hydraulic design for review to the Production Management Division's Hydraulic Section or to the District a minimum of sixty days before the review of the Stage 1 Detailed Design Plans.

Task 5.05: Identify Potential Design Exceptions

The Designer shall identify any Potential Design Exceptions and prepare the required documentation for submittal with the Stage 1 Detailed Design Plans.

Task 5.06: Complete Environmental Studies

Once the preferred alternative has been chosen and all of the public hearing comments have been addressed, the Environmental studies will be completed by the Designer. The studies must be completed and submitted to the Environmental Policy Administrator. That person will then distribute the studies to the proper reviewer for review and approval.

All of the following studies are described in the ce manual, provided by the Office of Environmental Services.

Sub-Task 5.06.01: Complete Archaeological Survey and History/Architecture Survey

This will be reviewed by the Cultural Resources Administrator.

Sub-Task 5.06.02: Noise Analysis

This will be reviewed by the Environmental Policy Administrator.

Sub-Task 5.06.03: Complete Final Section 4(f) Determinations

This will be reviewed and approved by the Environmental Policy Administrator and Cultural Resources Administrators.

Sub-Task 5.06.04: Complete Ecological Survey Report

This will be reviewed by the Ecology and Waterways Permit Administrator.

Sub-Task 5.06.05: Complete 404/401 Permit Determination

The Ecology and Waterways Permit Administrator will need to review the completed stage 1 detailed design plans to be able to determine what permits will be required.

Sub-Task 5.06.06: Complete Documentation for Section 106 and Memorandum of Agreement

This will be reviewed by the Cultural Resources Administrator and the Manager of Office of Environmental Services. INDOT will also send a copy to FHWA for its review and approval.

Sub-Task 5.06.07: Complete Final Air Quality Hot Spot Analysis

This will be reviewed by the Environmental Policy Administrator. The Hot Spot Analysis is only required if the AADT is over 125,000 with 8% or more trucks (approximately 10,000 AADT truck traffic).

Sub-Task 5.06.08: Complete Phase 2 Environmental Site Assessment

This will consist of a Phase 2 Hazmat Study, if needed, which will be reviewed by the Environmental Policy Administrator. A Phase 2 Archaeology study, if needed, will be reviewed by the Cultural Resources Administrator.

Once all of the environmental study information is completed, reviewed and approved, the final Environmental Document assembly will begin.

Task 5.07: Submit Stage 1 Detailed Design Plans

The Stage 1 Detailed Design Plans will be electronically submitted by the Designer and reviewed by the Office of Roadway Services, the Office of Structural Services, or the appropriate District staff as directed. The Reviewer has 30 days to review the plans and return them to the Designer. The Designer should consult the *Indiana Design Manual*, Chapter 14 as a guide for what is to be included in the submittal.

The Designer should submit the plans electronically into the INDOT Electronic Records Management System (ERMS). Non-IPOC projects are to be submitted to the District Coordinator and IPOC projects are to be submitted to the Central Office Coordinator. The Coordinators are listed as follows:

- Coordinator 1 ..... Crawfordsville District
- Coordinator 2 ..... Fort Wayne District
- Coordinator 3 ..... Greenfield District
- Coordinator 4 ..... LaPorte District
- Coordinator 5 ..... Seymour District
- Coordinator 6 ..... Vincennes District
- Coordinator 7 ..... Central Office

The Designer should notify the Coordinator and the Project Manager that the plans have been submitted into ERMS. The Coordinator then notifies the Project Manager that the submittal is ready for review. The Project Manager will review the submittal documents and determine which reviews need to be completed. After concurring that the submittal is complete, the Project Manager will inform the Coordinator of the required reviews. The Coordinator will then route the plans to the Reviewer. As part of the review, the Reviewer will provide markups and an evaluation. If a resubmittal is needed, the Reviewer should notify the Coordinator and the Project Manager, and the Project Manager must decide whether to adjust the schedule accordingly.

After completing the review and the evaluation, the Reviewer will return the plans, any markups, and the evaluation back to the Coordinator through ERMS. The Coordinator will notify the Project Manager and

the Designer of the completed review, and that the review comments and evaluation are available in ERMS for the Project Manager to review. The Project Manager will review the markups and the evaluation for concurrence, noting if there are any further concerns to be addressed. The Project Manager will then notify the Designer and the Coordinator that the review and evaluation are complete. The Coordinator will then process the review and the evaluation for the Designer. At this time, the Designer will be able to view any markups and the evaluation.

A flowchart illustrating this plan submittal and review process is provided in the Appendix.

Task 5.08: Review Stage 1 Detailed Design Plans for Environmental Impacts

Once the detailed design plans are completed, the Designer should submit one set of plans to the Environmental Policy Administrator and one set to the Ecology and Waterways Permit Administrator for their review and comment. If any historic properties are involved, the Office of Environmental Services will forward a set of plans to the Cultural Resources Administrator.

Markups will be returned to the Designer and the appropriate revisions should be made to the plans before the field check.

Task 5.09: Review Air Quality Conformity with MPO / Complete Air Quality Conformity Analysis for Rural Non-Attainment Areas

Once the stage 1 detailed design plans and preliminary phasing of the project are complete, the Designer will request a Conformity Analysis from the local MPO through the Manager of Urban and Corridor Planning. If the project is in Greene or Jackson County, a Conformity Analysis for Rural Non-Attainment Area will need to be requested through the Manager of Urban and Corridor Planning. MPOs normally do Conformity Analysis once a year.

Once the Conformity Analysis is complete a copy should be given to the Environmental Policy Administrator who will distribute the copies to the appropriate individuals.

Task 5.10: Review and Approval of Design Exception(s) by Production Management Division

After the design exception(s) has been identified, the Designer should submit the completed design exception(s) to the Project Manager for routing to either the Manager of the Office of Roadway Services for road elements or the Manager of the Office of Structural Services for bridge elements. The Designer should refer to Sections 40-8.0 through 40-8.05 of the *Indiana Design Manual* to prepare the appropriate design exception.

If the project is located on Indiana's Non-NHS system, the design exception will be reviewed and approved by the appropriate Office Manager (Roadway Services or Structural Services). If the exception is requested on Indiana's NHS System, the reviewer and appropriate Office Manager will review the design exception for completeness and then submit the design exception for approval to the Director of Production Management. If the design exception is approved, it will be logged and returned to the Project Manager and the Designer for their records.

The signature process for the design exception(s) is as follows for IPOC projects: Designer → Reviewer → Project Manager → Roadway/Structural Services → Production Management Director

The signature process for the design exception(s) is as follows for non-IPOC projects: Designer → Reviewer → Project Manager → District Production Director → Roadway/Structural Services → Production Management Director

The above is a brief description of the routing process for design exceptions. The Designer should refer to the *Indiana Design Manual*, Section 40-8.04 for the Level One Design Exception Approval Procedure. **(NOTE: Currently, this section is superseded by Indiana Design Memorandum No. 06-05.)**

Task 5.11: Review and Approval of Design Exception(s) by FHWA

If a project requires Federal Oversight, the Office of Roadway Services or the Office of Structural Services, as appropriate, will forward the design exception(s) to the Federal Highway Administration Division Administrator for review and approval. FHWA will only approve after INDOT has approved the design exception(s).

If the design exception is approved by both INDOT and FHWA, it will be logged and returned to the Project Manager and the Designer for their records.

The signature process for the design exception(s) is as follows for IPOC projects: Designer → Reviewer → Project Manager → Roadway/Structural Services → Production Management Director → FHWA Division Administrator

The signature process for the design exception(s) is as follows for non-IPOC projects: Designer → Reviewer → Project Manager → District Production Director → Roadway/Structural Services → Production Management Director → FHWA Division Administrator

The above is a brief description of the routing process for design exceptions. The Designer should refer to the *Indiana Design Manual*, Section 40-8.04 for the Level One Design Exception Approval Procedure. **(NOTE: Currently, this section is superseded by Indiana Design Memorandum No. 06-05.)**

Task 5.12: Perform Subsurface Investigation

Once the survey and the Stage 1 Detailed Design Plans are complete, bridges, culverts and/or pipes are sized and approximate foundation loads are known, the Designer will submit the following plan sheets and information to the Manager of Office of Geotechnical Engineering to request the Soils Subsurface Investigation:

- Title Sheet
- Typical Section Sheet(s)
- Plan and Profile Sheet(s) with all bridge and culvert locations marked
- Layout Sheets for Bridges and Culverts
- MSE Wall or Retaining Wall Layout Information
- Cross Sections
- Names and addresses of effected property owners
- Requested pile and foundation loads for culverts and bridges

Once the soils investigation is complete and the required laboratory tests are conducted, all related soils recommendations will be collected and organized to create the Soils Investigation Report. This report will give the recommended CBR rating for the pavement design, the recommended foundation information for all the bridges, culverts, MSE walls, retaining walls and pipes and any other soils related information.

The Geotechnical Section should be involved with every project as early as possible, and no later than the preliminary field check. See the *Policy for Geotechnical Investigation or Geotechnical Waiver* to determine if a geotechnical investigation is required.

This activity is comprised of the following sub-activities:

Sub-Task 5.12.01: ***Field Investigation***

Sub-Task 5.12.02: ***Laboratory***

Sub-Task 5.12.03: ***Engineering***

Task 5.13: Pavement Design Requested and Received

The Pavement Design Request form is transmitted to the Pavement Design Engineer after the geotechnical report is complete and the CBR value is known. The geotechnical report is not required for resurface projects but is required for widening, replacement, crack and seat and rubblization projects.

The pavement design request form can be found in the *Indiana Design Manual, Chapter 52*, or online at **http://www.in.gov/dot/div/contracts/design/dmforms/App52-14A.pdf**. This request should be sent to the Pavement Design Engineer. The *Indiana Design Manual*, Section 52-8.02 provides more information about the pavement design request process. The pavement steering committee meets once a month. The pavement design request should be returned within 4 to 6 weeks.

Task 5.14: Hold Design Field Check

Once the stage 1 detailed design plans have been reviewed and approved by the reviewer and environmental avoidance measures have been incorporated into the plans, the Designer will be responsible for scheduling and transmitting invitations and plan sets (if required) for the field check.

Three weeks notice should be given for the field check. The Designer should schedule the field check date with the District Construction Engineer, INDOT Project Manager and the District Highway Operations Director.

The Designer will also be responsible for inviting local Community Advisory Committees (CACs) and other local officials to the field check to receive their comments and concerns and consider possible CSS strategies.

A sample Field Check Notification letter can be found on the INDOT website at **http://www.in.gov/dot/div/contracts/design/dmforms/Cov14-1B.pdf**

At this stage the Designer should submit an updated cost estimate to the INDOT Project Manager.

At the field check, the Designer should be prepared to suggest the following:

- Maintenance of Traffic Scheme: Phasing of the project and how it will work with utility relocations.
- Schedule Timing of Construction: Determination of the best time of year to let the project given, stream work limitation, tree clearing limitation, town festivals, school schedules, etc.
- Suggest Break Locations: Segment the project into different contracts and/or phases (large corridor projects).

After the field check is held, the District Construction Engineer and Construction Management Division's Field Construction Engineer will return marked up plans and suggestions for the previously mentioned topics. Given the complexity of the project, a meeting may need to be held.

The Construction Management Division's Field Construction Engineer should be sent plans and invited to only Minor Project field checks.

Task 5.15: Notification to Utilities to Verify Location Information

The Designer will be responsible for transmitting the following information to each utility so the utility locations can be verified:

- Plan and Profile Sheets
- Construction Detail Sheets (if they show the utilities)
- Cross Sections (if they show the utilities)

Task 5.16: Utilities Verify Location Information (30 Calendar Days)

The Utility companies will have 30 calendar days to review and note any location discrepancies. The Designer should receive plans back from every utility whether there are discrepancies or not. If discrepancies are noted, the Designer will be responsible for updating the plans and locating any other possible conflict points due to the corrected discrepancies.

Task 5.17: Notify Railroad to Verify Operation Status

The Designer will be responsible for transmitting the following information to each railroad so the railroad operation status can be verified:

- Plan and Profile Sheets
- Construction Detail Sheets

Task 5.18: Complete Preferred Alternative Verification Review

The Preferred Alternative Verification refines the construction limits on the recommended alternative. Assumptions made during the Assessment of Alternatives are further investigated.

Task 5.19: Detailed Design Value Engineering Study (> $ 25 Million)

Upon completion of Stage 1 design, a value engineering study is conducted. Through the use of creative techniques, value engineering looks at alternative ways to accomplish the necessary function and reliability at the lowest overall cost. CSS strategies can be discussed at this time to determine if they are practicable.

Task 5.20: Stage 1Detailed Design Constructability/Operational and Risk Review

The Designer will send the Stage 1 detailed design plans to the District Construction Engineer, Construction Management Division's Construction Field Engineer and INDOT Project Manager for review and comment.

Task 5.21: Evaluate Consultant

Once the Stage 1 Detailed Design Plans have been completed, the Field Check has been held, and the preferred alternative verification review has been completed, the Project Manager, with input from other INDOT employees that have been involved with the development of the project, will evaluate the Consultant.

Task 5.22: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed.

Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all agencies and the public.

Step 6 Stage 2 – Develop Stage 2 Detailed Design and Plans

Task 6.01: Develop Stage 2 Detailed Design Plans

Once the preferred alternative verification review has been completed, the Designer can begin the development of the Stage 2 Detailed Design Plans. The Designer should consult the *Indiana Design Manual*, Chapter 14 as a guide for what is to be included in the plans.

During this step, the plans will continue to be developed in greater detail. Coordination with the environmental agencies and the public and private utilities to minimize any adverse effects is vital in the development of Preliminary Right-of-Way Plans and Environmental Plans.

When the Designer prepares the Stage 2 Detailed Design Plans, the environmental document should also be incorporated into the plans to minimize or avoid environmentally sensitive areas identified by the Production Management Division's Office of Environmental Services (i.e., 4(f) properties, wetlands, critical habitat, endangered species, hazardous waste sites, cemeteries, etc.). At the end of this step, the Designer should have a complete set of Stage 2 Detailed Design Plans ready for review.

Sub-Task 6.01.01: Prepare Environmental Document

Sub-Task 6.01.02: Review Environmental Document

Task 6.02: Complete Draft Waterway Permit Applications

The following list provides brief descriptions of waterway activities that are regulated by various agencies:

- The discharge of either temporary and permanent dredge or fill materials into waters of the United States, regardless of amount or length, is regulated by the U.S. Army Corps of Engineers (USACE) and the Indiana Department of Environmental Management (IDEM) through the waterway permitting process.
- The USACE regulates impacts to navigable waters under Section 10 of the Rivers and Harbors Act of 1899 and the discharge of dredge and fill materials into waters of the United States under Section 404 of the Clean Water Act (CWA).
- The IDEM, under authority of Section 401 of the CWA, regulates the state water quality through the 401 Water Quality Certification process and impacts to isolated wetlands.
- The U.S. Coast Guard (USCG) regulates impacts to, or crossing of, navigable rivers in Indiana under Section 9 of the Rivers and Harbors Act of 1899. A completed 401 Water Quality Certification is required by the USCG for a Section 9 Permit.

During Step 7, projects are evaluated by the Office of Environment Services to determine if there are potential impacts to aquatic resources subject to waterway permits. If aquatic resources are not impacted, no waterway permits are required. If however, aquatic resources subject to waterway permits are impacted, a draft of the pertinent sections of the Preferred Alternative Verification is completed by Permit Unit for permit determination. The Permit Unit returns the permit determination to the Designer. This determination will include the type and level of waterway permits required. This permit determination is included as part of the final submission of the Preferred Alternative Verification. Also during this phase, the determination will be made if an IDNR floodway permit will be required. This will be done by determination of the waterway drainage area and determining if the site is an urban or rural area if the drainage area is over 1 square mile or under 50 square miles. If there is any channel relocation on a drainage area over 1 square mile this will also result in a need for IDNR floodway permit.

Typical permit authorization options include:

- No waterway permits are required.
- Authorization under the 404 Nationwide Permit Program.
- Authorization under individual 404 Permit and 401 Water Quality Certification.
- Projects over commercially navigable waters require a Section 9 Permit from the USCG in addition to a 404 Permit and 401 Water Quality Certification.
- Projects impacting isolated wetlands require an IDEM Isolated Wetlands Permit in addition to any option above.

If required mitigation site will be identified and coordinated with the permitting agencies for acceptance. Once a site is selected and approved site and mitigation plans will be determined and submitted to the permitting agencies.

For a detailed list of requirements and a checklist of required documentation see the *Indiana Waterway Permits Manual* provided by the Office of Environmental Services which can be found online at **http://www.in.gov/dot/pdf/WaterwayManual.pdf**.

This activity is comprised of the following sub-activities:

Sub-Task 6.02.01: ***Prepare Draft Applications***

Sub-Task 6.02.02: ***Review and Approval by INDOT OES***

Sub-Task 6.02.03: ***Mitigation Site Identification***

Sub-Task 6.02.04: ***Permit Agency Coordination***

Sub-Task 6.02.05: ***Mitigation Site Design***

Sub-Task 6.02.06: ***Mitigation Plan Implementation***

Task 6.03: Noise Analysis Results Reviewed by INDOT Noise Committee

Once the Noise Analysis is completed, the results are submitted to INDOT Noise Committee through the Environmental Policy Administrator for verification and approval.

Task 6.04: Railroad Design Information Gathered

The Railroad companies will have 60 calendar days to review and note design needs or active railroads in the project area. The Designer should receive comments back from the Railroad whether there are active or not. The Designer will be responsible for updating the plans and meeting the railroad needs.

Task 6.05: Final Detailed Noise Analysis

Summarize INDOT Noise Committee meeting results and develop Final Noise Wall Recommendations.

This activity is comprised of the following sub-activities:

Sub-Task 6.05.01: ***Summarize Meeting Results***

The meeting results and Committee recommendations are summarized by the Chairman of the Noise Committee and forwarded to the Chief Engineer.

Sub-Task 6.05.02: Final Noise Wall Recommendations Approval

The Chief Engineer approves the final Noise Wall recommendations and approves them for inclusion in the project design.

Task 6.06: Coordinate and Develop with Utilities Relocation Plans

The Project Design Team will continue to work with public and private utility companies on relocation plans. This will include meetings with the District Utility Coordinator, the public and private utility companies, and the Project Design Team. Utilities will typically have 60 days to identify any potential conflicts. During these meetings, the design will continue to be developed to either add in or reduce the amount of utility relocations. Once the plans are completed to Stage 2 level of completeness, the plans will be reviewed for any additional conflicts and coordination will continue with the affected utilities.

Task 6.07: INDOT Reviews Utility Conflicts and Considers Use of Utility Corridor

During this time INDOT Office of Utility Coordination will also investigate the use of a utility corridor. The creation of utility corridors is necessitated by an increased demand from the growth and expansion of utility companies. The growth and expansion of underground utilities results in an increased demand and competition for the space available on roadway right-of-way for public utilities.

It is important to note that in Indiana "Utility Corridors" per se have not been commonly created. The development of this concept is still highly conceptual and FHWA encourages INDOT to study methods currently in use in Europe. To date, the main method of utility corridor simulation is joint trenching, but this topic is still highly underdeveloped in Indiana.

Task 6.08: Construction and Utility Relocation Plans Review

Project design team will conduct a constructability and utility relocation review during this stage of the project.

Task 6.09: Prepare Preliminary Right-of-Way Plans

All right-of-way shall be shown in accordance with Chapter 85 of the Design Manual. All plan-profile and construction detail sheets shall show existing and proposed right-of-way. The right-of-way callouts for both permanent and temporary right-of-way on the plan-profile sheets shall be labeled by station and offset in units of feet. There are several right-of-way plan checklists in Chapter 85 of the Design Manual. They include sample right-of-way indices for road and bridge plans (figures 85-2A and 85-2B), the checklist for Plat No. 1 (figure 85-2CF) and the checklist for right-of-way plans (figure 85-2F). The Designer should use these lists to provide complete right-of-way plans.

Task 6.10: Update Property Abstracts

After the preliminary right-of-way plans are developed, affected properties should be re-evaluated. Refer to Activity 81 in Step 5 for original abstracting activity. The Designer who did the original abstracting shall take all affected properties (parcels that have been numbered) and update all Title and Encumbrance Reports for any additional liens on the property (i.e., mortgages, tax liens, etc.) and parcel splits that may have occurred from the time of original abstracting to the present time. Any parcels that have been split since the original abstracting shall be incorporated into the right-of-way plans. All transactions that have occurred during the time period since original abstracting should be reported on the update.

The Designer will submit the abstract updates to the Central Office Real Estate Regional Manager to be input into the LRS. A copy of ownership changes should be submitted to the Designer working the right-of-way engineering.

Task 6.11: Preliminary Right-of-Way Plans are Developed and Reviewed by INDOT

The Designer will develop Preliminary Right-of-Way Plans for submittal to INDOT. This submittal will provide INDOT a review of the right-of-way needs for the project and begin the development of a purchasing timeline. During the review of the plans the District will determine if there are any conflicts. The right-of-way engineering will be reviewed by the Designer under its own QC/QA plan.

Task 6.12: Hold Public Information Meeting (Noise Wall and Design)

INDOT will hold a Public Information Meeting to provide the citizens information on the proposed Design and the potential for the use of Noise Wall if the project warrants the use of sound walls. Public input will be taken to determine whether affected property owners do or do not desire traffic noise abatement.

Task 6.13: Submit Stage 2 Detailed Design Plans

The Stage 2 Detailed Design Plans will be electronically submitted by the Designer and reviewed by the Office of Roadway Services, the Office of Structural Services, or the appropriate District staff as directed. The Reviewer has 30 days to review the plans and return them to the Designer. The Designer should consult the *Indiana Design Manual*, Chapter 14 as a guide for what is to be included in the submittal.

The Designer should submit the plans electronically into ERMS. Non-IPOC projects are to be submitted to the appropriate District Coordinator (Coordinators 1-6) and IPOC projects are to be submitted to the Central Office Coordinator (Coordinator 7). The Designer should notify the Coordinator and the Project Manager that the plans have been submitted into ERMS. The Coordinator then notifies the Project Manager that the submittal is ready for review. The Project Manager will review the submittal documents and determine which reviews need to be completed. After concurring that the submittal is complete, the Project Manager will inform the Coordinator of the required reviews. The Coordinator will then route the plans to the Reviewer. As part of the review, the Reviewer will provide markups and an evaluation. If a resubmittal is needed, the Reviewer should notify the Coordinator and the Project Manager, and the Project Manager must decide whether to adjust the schedule accordingly.

After completing the review and the evaluation, the Reviewer will return the plans, any markups, and the evaluation back to the Coordinator through ERMS. The Coordinator will notify the Project Manager and the Designer of the completed review, and that the review comments and evaluation are available in ERMS for the Project Manager to review. The Project Manager will review the markups and the evaluation for concurrence, noting if there are any further concerns to be addressed. The Project Manager will then notify the Designer and the Coordinator that the review and evaluation are complete. The Coordinator will then process the review and the evaluation for the Designer. At this time, the Designer will be able to view any markups and the evaluation.

A flowchart illustrating this plan submittal and review process is provided in the Appendix.

Task 6.14: Stage 2 Detailed Design/Constructability/Operational and Risk Review

The Designer will send the Stage 2 detailed design plans to the District Construction Engineer, Construction Management Division's Construction Field Engineer and INDOT Project Manager for review and comment.

Task 6.15: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made.

Ste 7 Environmental Approval

Task 7.01: Approve FONSI/CE

The Office of Environmental Services will work jointly with FHWA to approve, publish, and distribute the CE or the Environmental Assessment/Finding of No Significant Impact (FONSI), in accordance with the Indiana CE Manual and the Procedural Manual for Preparing Environmental Studies.

The **Commitments Summary Form** should be completed based on commitments made in the NEPA process. This form shall follow the project through design, land acquisition, and construction and must be updated as appropriate through the Project Development Process. Commitments made in the environmental document are to be included in the Project Commitments Summary and plans.

For those mitigation items with firm commitments to implement through the approval of the environmental document, the Project Manager will ensure that they are incorporated into the project plans and specifications or otherwise implemented. If the Project Manager determines that any of these listed firm commitments cannot be implemented, then the reasons will be formally documented and agreed to by the Office of Environmental Services.

For those mitigation items with a commitment to further evaluate its implementation, the Project Manager will ensure that they are thoroughly evaluated to determine the practicability of implementation. All mitigation items that are determined to be feasible and prudent to implement will be incorporated into the project plans and specifications or otherwise implemented. If the Project Manager determines that any of these listed commitments to consider are not feasible and prudent, then the reasons will be formally documented and agreed to by the Office of Environmental Services.

A similar process will be followed when the project proceeds through subsequent project development phases with the Office of Real Estate, Contract Administration, and the Division of Construction. The Indiana Design Manual and the General Instructions to Field Employees has more information on implementing environmental commitments. The final Project Commitments Summary will document the final status of all the environmental commitments made in or subsequent to the environmental approval, including any commitments associated with required permits.

Task 7.02: Verify Activities in TIP and INSTIP

During this stage of the project development, the Project Manager needs to verify with the Planning Division's Office of Urban and Corridor Planning that all remaining activities (PE, CN, and RW) are stated in the TIP and INSTIP for the community and the state.

The Project Manager will verify the project is placed in the TIP/INSTIP in a timely manner to prevent any delays in the project.

Task 7.03: Submit Funding for FHWA Authorization

Land Acquisition cannot begin until INDOT has obtained an approved environmental document including required public hearings and FHWA funding authorization. The Real Estate Administrative Office will submit the funding request to FHWA. INDOT must comply with processes established in FHWA Regulations 49 CFR Part 24 and Indiana Code Title 32. Additional information can be found in the various manuals from the Production Management Division's Office of Real Estate. These manuals are located on the INDOT website at **http://www.state.in.us/dot/div/pubs/manuals/rightofway/** and consist of the *Appraisal Manual*, *Buying Manual*, *Relocation Manual*, and *Property Management Manual*.

Task 7.04: Evaluate Consultant

INDOT will evaluate the Consultant during this stage of the project. A copy of the evaluation form may be found in the appendix.

Task 7.05: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all agencies and the public.

Step 8 Prepare Final Right-of-Way Plans

Task 8.01: Submit Final Right-of-Way Plans

Objectives:
- Complete and submit Final Right-of-Way Plans for review
- Complete and submit Right-of-Way Tracings

Preliminary Right-of-Way Plans are developed by the Designer in Step 7 using Abstract information from Step 5 and the plans. Final Right-of-Way Plans incorporate Preliminary Right-of-Way Plan comments and any Stage 2 Detailed Design comments that affect the right-of-way. Legal descriptions and area calculations also are included in the Final Right-of-Way Plans. These Final Right-of-Way Plans can be developed concurrently with the Stage 2 Detailed Design in Step 9; however, any Stage 2 design issues that may affect right-of-way must be resolved prior to submission of the Final Right-of-Way Plans.

Right-of-way plans must be as accurate as source documents in all cases. Right-of-way plans are used to display the findings of ownership of the properties required. The information displayed is based on research performed in prior steps. INDOT uses the Final Right-of-Way Plans and approved Stage 2 construction plans to estimate compensation for the part taken and damages, if any, to the residence. The Final Right-of-Way Plans also identify service providers needing relocation in conjunction with the project.

The Designer that is responsible for the development of the project will be responsible for reviewing the right-of-way engineering and the resulting right-of-way plans through its QC/QA process.

Task 8.02: Final Right-of-Way Tracings

The Final Right-of-Way Tracings incorporate all the Final Right-of-Way Plan review comments. Before submitting the Final Right-of-Way Tracings, an in-depth review of courthouse records is conducted to verify property owners and determine if there are new ownership transactions. In addition a field review is conducted to identify changes to topographic features, structures, or utilities. The Final Right-of-Way Tracings are revised to accurately reflect new information identified in the final field verification.

Task 8.03: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all agencies and the public.

Step 9 Begin Land Acquisition

Task 9.01: Appraisal Problem Analysis

Objectives/Deliverables:
- ROW Appraisals
- Secured ROW Parcels
- Certification Letter
- Consultant Evaluation

INDOT'S Review appraisers or consultants will perform the APA (Appraisal Problem Analysis). The purpose is to correctly analyze the necessary appraisal types for each property, either a waiver valuation or full appraisal, what is to be appraised, and the pertinent issues involved. The appraisal report will then be assigned to either consultant or INDOT staff.

Task 9.02: Prepare Appraisals/Valuations

Qualified appraisal personnel complete certified appraisals and/or waiver valuations to determine property values in the area. Only Staff Appraisers or those from the INDOT approved list may be used to conduct appraisals. These appraisal reports/waiver valuations are the basis for developing the Statement of Just Compensation and making offers to the affected property owners. Agreement on acquisition is then sought through presentation of the SJC and the proposed construction plans. INDOT estimates fair market value of the property acquired plus damages to any remaining property. It is important to identify Priority Parcels for early processing. Priority Parcels are those with Relocation issues, those on bridges where construction may begin earlier, those with total takes, and those with minor severance damages and/or high likelihood of condemnation. The priority parcels should be appraised and acquired first.

Task 9.03: Concurrent Review of Appraisals by INDOT

Because the Land Acquisition process weighs heavily on the PDP it is critical that the appraisal review process take place concurrently with the completion of the appraisals. Review appraisers review the SJC and appraisal report. Once the appraisal is reviewed and recommended as a basis for the SJC the acquisition process can begin. For more information see INDOT'S Appraisal Manual and the "How Land is Purchased Pamphlet."

Task 9.04: Concurrent Right-of-Way Acquisition

Acquisition of parcels is done by consultants or INDOT Realty Specialists. Upon INDOT determining the fair market value, the buyer will present the offer to the owner following mandated procedures found in the Buyer's Manual. When the parcel is secured the parcel packet is submitted to the INDOT Real Estate Regional Manager for review assignment. The secured parcel packet will proceed through the voucher process for payment. Payment is processed through the Property Management Section. Only Staff Buyers or those from the INDOT approved list may be used to conduct acquisitions.

INDOT must inform all owners of their rights under the law; the law will fully protect these rights. State and Federal laws prohibit discrimination on the grounds of race, color, religion, sex, national origin, age, or disability. The right-of-way acquisition process requires INDOT to take certain steps to ensure the protection of all rights and interests of property owners. These steps include:

- Making every effort to acquire the property in a timely manner.
- Making every reasonable effort to contact each property owner and present the owner with a written offer of the approved valuation for the required property.
- Offering the full fair market value for the property being acquired in compliance with both federal and state laws.

For more information see INDOT'S Buyer's Manual.

Task 9.05: Concurrent Relocation Assistance

When the buying process is being done by INDOT staff and the buyer initiates contact with an owner who may be entitled to Relocation assistance, the buyer will notify the Chief Relocation Specialist through the Daily Notice form. The Chief Relocation Specialist will assign the parcel to an INDOT Realty Specialist to make contact with the owner and assist them through the relocation process.

If the Buying and Relocation processes are being done by a consultant, the Consultant will notify INDOT's Chief Relocation Specialist before initial contact with owners to verify the Relocation Consultant has met INDOT's minimum qualifications and are on the current Approved Fee List for Relocation. At that time, the Chief Relocation Specialist will determine mandatory check points for review throughout the process.

INDOT must inform any displaced businesses or persons of their rights and benefits under the Relocation Assistance Program outlined in the Uniform Relocation and Real Property Acquisition Policies Act of 1970.

Refer to the Relocation Manual and the Relocation Assistance Program pamphlet for more details.

Task 9.06: Concurrent Condemnation

If INDOT and the property owner cannot reach an agreement through negotiation, the Indiana Code permits INDOT to acquire property for a public improvement through eminent domain. The Attorney General's Office, Transportation Practice Group, handles all condemnations for INDOT. The INDOT Office of Real Estate Acquisition Section serves as the liaison to the Attorney General's Office for all condemnations. More details on this process can be found in INDOT'S Buyer's Manual.

Task 9.07: Right-of-Way Clearance and Certification

After the acquisition of property, INDOT makes arrangements for the clearance of the property. Once property owners have been paid and issued the proper notices to vacate personal property from acquired right-of-way, INDOT Real Estate Property Management will turn the parcel over to the district for clearing. Clearance activities include relocation of utilities, environmental mitigation, asbestos inspections and demolition of all structures. If buildings or other structures have been acquired, it may be desirable to demolish these structures as soon as possible to minimize vandalism and trespassing. When time permits, the District Real Estate Office can rent the structures until needed for construction, or the District Real Estate Office can attempt to sell the structures through public auction. For more information on clearing right-of-way, see INDOT's, Real Estate, Property Management Manual.

The primary objective of land acquisition is to acquire and clear right-of-way for construction. INDOT Real Estate Property Management will certify the status of the acquired right-of-way as clear or clear with exception and that all Federal and State regulations have been followed in the acquisition process. This documented status is a primary milestone in the Project Development Process and will be forwarded to appropriate INDOT staff for distribution and inclusion in the PSE. Federal Highway Administration requires the certification letter before approving the PSE.

Task 9.08: Record Deeds

The Regional Real Estate manager ensures that a complete record of all negotiation activities is kept for INDOT. These files include:

- Applicable right-of-way plan sheets
- Title reports
- Negotiation notes
- Signed offer letters and signed contracts

It is critically important to have on file all fully executed and recorded conveyance instruments. These files are kept in the INDOT Records Unit.

Close coordination among the Project Manager, property acquisition, and design teams is necessary at all stages of right-of-way acquisition in Step 10. This coordination should include a review of impacts to local property owners in the early stages of this process. Right-of-way acquisition is an important milestone that often dictates the project completion schedule. Therefore, the Project Manager should coordinate with the Office of Real Estate to verify project status. In cases where INDOT cannot reach agreement with property owners, close coordination with the Attorney General's Office as early as possible is also necessary.

Task 9.09: Update Project Status

Based on the right-of-way activities, the Project Manager should update the right-of-way acquisition cost estimates in SPMS prior to starting Step 11. The Project Manager will complete Consultant Evaluations with input from Right-of-Way Regional Managers.

The required products for this item include:

- Right-of-Way Clearance Certification Letter which signifies that all affected properties have been acquired under State and Federal regulations and that the right-of-way is clear for construction.
- Consultant Evaluation
- Updated costs in SPMS

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all agencies and the public.

Step 10 Stage 3 – Complete Preferred Alternative

Task 10.01: Develop Stage 3 Detailed Design Plans

Once the Right-of-Way Clearance and Certification has been completed, the Designer can begin the development of the Stage 3 Detailed Design Plans. The Designer should consult the *Indiana Design Manual*, Chapter 14 as a guide for what is to be included in the plans.

Stage 3 Detailed Design Plans should represent a completed design although changes still might be made due to revisions to existing conditions, right-of-way negotiations, and so forth. The principal work items in Stage 3 include the bridge design, the addition of quantities to the plans, a final cost estimate, and the PSE from FHWA.

The plans and *Project Commitments Summary* are reviewed by the Designer for consistency with the Final Environmental Document. The Commitments Summary Form will be used during design to keep track of how each of the environmental commitments are being implemented or considered. Additional commitments (either firm commitments or others to be considered later) may be made during design, land acquisition, or construction and should be added to the Commitments Summary Form.

When the Designer prepares the Stage 3 Detailed Design Plans, the Final Environmental Document should also be incorporated into the plans to minimize or avoid environmentally sensitive areas identified by the Production Management Division's Office of Environmental Services (i.e., 4(f) properties, wetlands, critical habitat, endangered species, hazardous waste sites, cemeteries, etc.). At the end of this step, the Designer should have a complete set of Stage 3 Detailed Design Plans ready for review.

Task 10.02: Notify Utility to Prepare Relocation Plans

The Designer will submit electronic and paper copies of the project plan sheets to the Production Management Division's Utility Section in order to get the utility companies within the project right-of-way to develop their relocation plans. The Utility Section will notify the utility companies that the plan sheets are available within 2 days of receipt.

Task 10.03: Relocation Design By Utility (180 Calendar days)

The utility companies will have 180 calendar days to complete the relocation plans from the time they are notified of the availability of project plan sheets by the Utility Section.

Task 10.04: INDOT Review of Public Utility Relocation Plans

The Utility Section will review the utility relocation plans for conflicts with the road construction project and other utilities within the proposed project right-of-way.

Sub-Task 10.04.01: Utility Work Plan Negotiations

Task 10.05: Prepare Utility Agreements

The Utility Section will prepare and submit utility agreements to the affected public utilities within the project limits.

Task 10.06: Signed Agreements by Public Utility Received

The Utility Section will receive the signed utility agreements from the affected public utilities. The agreement will be submitted for necessary signatures from State of Indiana personnel.

Task 10.07: Utility Agreement Approval

The Utility Section will receive signed and approved utility agreements from the Indiana Attorney General. Upon receipt, the OUE will update SPMS.

Task 10.08: Issue Utility Permits / Notice to Proceed

Upon receipt of executed agreement documents between INDOT and affected public utilities, the Utility Section will issue the permits for the utility to proceed with relocation efforts.

Task 10.09: Notify Railroad to Prepare Force Account Estimate

The Railroad section will notify the affected Railroads within the project limits to prepare force account agreements.

Sub-Task 10.09.01: ***Force Account Estimate Supplied by Railroad***

Sub-Task 10.09.02: ***INDOT Review of Railroad Force Account Estimate***

Sub-Task 10.09.03: ***Prepare Railroad Agreements***

Sub-Task 10.09.04: ***Signed Agreements by Railroad received***

Sub-Task 10.09.05: ***Railroad Agreements approved by INDOT***

Sub-Task 10.09.06: ***Issue Railroad Permits/Notice to Proceed***

Sub-Task 10.09.07: ***Railroad Permits and NTP issued***

Task 10.10: Complete Final Waterway Permit Applications

The Production Management Division's Waterway Permits Section will complete the necessary waterway permit applications required by the various resource agencies with jurisdiction over the body of water being affected by the project.

Task 10.11: Submit and Receive Permits

The Waterway Permits Section will submit and receive the necessary permit applications required by the various resource agencies with jurisdiction over the body of water affected by the project. The Waterway Permits Section will keep the permit on file and provide the Project Manager with a copy of the permit for the project file. Additionally, the Waterway Permits Section will provide a copy of the permit to the Project Engineer upon successful letting of the project to be posted on site as required by resource agency. Any permit conditions not already reflected in the design will be incorporated into the design of the project. At this time, a 180-day statute of limitations (SOL) on claims against USDOT and other Federal Agencies may be published in the Federal Register announcing the federal permitting action.

Task 10.12: Final Field Check / Constructability and Risk Review

When project plans are 90% complete, the Designer will hold a Final Field Check with the Project Manager, District Construction, utility representatives (if necessary), and design review personnel as appropriate. The project should be reviewed for consistency with the NEPA document. Mitigation commitments should be incorporated into the project. The District Construction personnel will also discuss constructability of the project as laid out by the Designer and make suggested modifications to the plans for the Designer to incorporate prior to the submission of the next plan review stage.

Task 10.13: Submit/Review Stage 3 Detailed Design Plans

The Stage 3 Detailed Design Plans will be electronically submitted by the Designer and reviewed by the Office of Roadway Services, the Office of Structural Services, or the appropriate District staff as directed. The Reviewer has 30 days to review the plans and return them to the Designer. The Designer should consult the *Indiana Design Manual*, Chapter 14 as a guide for what is to be included in the submittal.

The Designer should submit the plans electronically into ERMS. Non-IPOC projects are to be submitted to the appropriate District Coordinator (Coordinators 1-6) and IPOC projects are to be submitted to the Central Office Coordinator (Coordinator 7). The Designer should notify the Coordinator and the Project Manager that the plans have been submitted into ERMS. The Coordinator then notifies the Project Manager that the submittal is ready for review. The Project Manager will review the submittal documents and determine which reviews need to be completed. After concurring that the submittal is complete, the Project Manager will inform the Coordinator of the required reviews. The Coordinator will then route the plans to the Reviewer. As part of the review, the Reviewer will provide markups and an evaluation. If a resubmittal is needed, the Reviewer should notify the Coordinator and the Project Manager, and the Project Manager must decide whether to adjust the schedule accordingly. Also, the Reviewer should notify the Coordinator and the Project Manager if a review of the Final Tracings will likely be needed.

After completing the review and the evaluation, the Reviewer will return the plans, any markups, and the evaluation back to the Coordinator through ERMS. The Coordinator will notify the Project Manager and the Designer of the completed review, and that the review comments and evaluation are available in ERMS for the Project Manager to review. The Project Manager will review the markups and the evaluation for concurrence, noting if there are any further concerns to be addressed such as failure to incorporate committed mitigation measures into the design of the project. The Project Manager will review the *Project Commitments Summary* for consistency with the Final Environmental Document and to ensure that all commitments have been incorporated into the project plans and specifications or otherwise implemented as agreed to by the Office of Environmental Services. Once satisfied that all commitments have been met and that the review is complete, the Project Manager will then notify the Designer and the Coordinator that the review and evaluation are complete. The Coordinator will then process the review and the evaluation for the Designer. At this time, the Designer will be able to view any markups and the evaluation.

A flowchart illustrating this plan submittal and review process is provided in the Appendix.

Task 10.14: Contract Time Sets

The project plans will be submitted to the District Construction Engineer who will develop contract time sets for the project. The District Construction Engineer will typically require a minimum of two weeks to complete this activity.

Task 10.15: Final Geotechnical Engineering Review

The Designer will be responsible for submitting the Final Geotechnical Review form and a complete set of plans (including cross sections) to the geotechnical engineer that completed the geotechnical report. Once the plans have been reviewed the Final Geotechnical Review form should be returned to the Designer either showing that the plans comply with geotechnical report or that the plans need some modifications. If the plans require modifications, the corrections should be made and plans and a new form should be resubmitted to the above noted geotechnical engineer.

Task 10.16: Hold Public Information Meeting

The Project Manager will work with the INDOT Public Hearings Office to set up a public information meeting to inform the public of the final configuration the project will have and the proposed sequencing of the project construction.

Task 10.17: Stage 3 Detailed Design/Constructability/Operational and Risk Review

The Designer will send the Stage 3 detailed design plans to the District Construction Engineer, Construction Management Division's Construction Field Engineer and INDOT Project Manager for review and comment.

Task 10.18: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all agencies and the public.

Step 11 Prepare Final Tracings Package

Task 11.01: Prepare Final Construction Cost Estimate

The Designer will prepare the final construction cost estimate for submission with the contract package. This estimate will include specifications and quantities of materials required for the project utilizing the latest cost analysis information obtained from the most recent letting trends.

Task 11.02: Prepare Final Special Provisions (Including All Waterway Permits)

The Designer will prepare the special provisions document for submission with the contract package.

Task 11.03: Prepare Final Tracings

The Designer will prepare the final tracings for the project to be submitted electronically through ERMS.

Task 11.04: Final Project Document Review

The Designer will submit the final contract document to the Project Manager for review. The Project Manager will be responsible for checking that all comments given by the Reviewer from the previous submission have been addressed. The project is again reviewed for consistency with the NEPA document. The **Commitments Summary Form** and a copy of the NEPA document is provided to the appropriate INDOT District Office and included in the letting documents for the project. These documents are to be forwarded by the Project Manager to the Project Engineer responsible for the construction of the project

Task 11.05: Production Project Team Review

Upon the end of the project's development, a Production Project Team Review is held to give information and feedback amongst all the production units concerning successful and unsuccessful activities which occurred during the project's development. A report documenting these activities is prepared by the Project Manager or the Designer and submitted to the Director of Production Management.

Task 11.06: Project Time Float Reservoir

This maximum allotment of 60 days is built into the project schedule and is to be managed by and used at the discretion of the Project Manager for unforeseen issues that arise throughout the project's development.

Task 11.07: Project Documents Submitted to Contracts Division

The Designer will submit the project document to INDOT Document Management via ERMS 90 days prior to the letting date. The document will contain the project cost estimate, specifications, quantities, special provisions, permits, phasing/constructability and project plans.

The Project Manger will be responsible for making sure all of the hard copy documents have been submitted by the Designer. Once this review is complete, the project Manager will submit plans and documentation to the INDOT Records Unit.

Task 11.08: Update Project Status

The agencies may develop an updated schedule. Based upon this, the Project Manager will have the schedule updated in SPMS and verify the TIP and INSTIP status, requesting amendments where needed. Any revisions to the project commitment database should be made. As per SAFETEA-LU, any update in the project schedule for an EIS project must be made available to all agencies and the public.

Information will be developed after completion of the Major Steps.

Maintenance Projects
The following chapter describes the Project Development Process for Maintenance Projects. Key steps are outlined, and individual activities and sub-activities are explained. Specifically, each activity will state:

- What is the work to be done?
- Who performs the work?
- What is needed to complete the work?
- What must occur before work can begin?
- What is the product or deliverable that comes from the work?

The stakeholders involved in each activity are identified, areas of public involvement are indicated, and instances of IPOC Concurrence are detailed. Please refer to the Maintenance PDP Gantt Chart in the appendix.

Step 0 System-Wide Analysis / Project Identification / Draft Purpose and Need

Task 0.01 Prepare Final Construction Cost Estimate

Task 0.02 Purpose and Need

Project candidates can be identified through district wide system analysis completed by the District Planning Offices/Highway Operations or by local government or constituent requests. The Office of District Planning and Programming/Highway Management is responsible for analyzing current and future transportation mobility needs and scoring/prioritizing projects. Some proposed project candidates are discarded after various levels of analysis if no need is found. However, if a project is determined to have sufficient statewide system need, the office prioritizes it and presents it to the District Director for approval of the initial schedule delivery and budget of each fiscal year's new projects.

Fiscal constraint is then applied to develop a project specific district wide Long Range plan which is approved by the Commissioner. The Long Range plan is used to not only fulfill the CFR and state requirements listed above but also for:

a. Air Quality modeling in non-attainment and maintenance areas throughout the state.
b. Provide information to INDOT customers and legislature about major transportation investments statewide.
c. Provide candidate projects for the Major New – CO program
d. Identify future funding needs of the agency
e. Allows coordination with pavement preservation programs and other infrastructure investments.

Step 1 Project Compilation (Data Management and Inspections)

Task 1.01: Districts/Subs Compile Projects from Continuous Inspection

Potential projects are complied from bimonthly inspections by the Unit Foremen. Inspections are done by Sub-District crew members on the small culverts and under drains. District staff will inspect the large culverts in addition to the bridges.

Task 1.02: Projects Gathered from Agency Systems and Personnel, Management, and Public

Bridge inspectors, small structure inspectors, bridge crew supervisors, as well as crews from Traffic, Testing and District Operations will provide input for needed projects. The Department of Natural Resources (DNR) will also provide annual inspections from the district. Often requests from the public will provide valuable input as well as notes from INDOT's pavement preservation committee.

Task 1.03: Districts/Subs Begin Determining Greatest Need

When proposed projects have been collected, the Sub-District Manager, Unit Foremen, Field Maintenance Engineer, Maintenance Engineer and/or the Highway Operations Director will discuss the urgency, scope of work to be done, budget constraints and what equipment is needed for each suggested project. This group of people will analyze the work requests, quantify and prioritize the work to be done and then allocate the resources.

Step 2 Project Identification

Task 2.01: Districts Begin Prioritization Using Cost Benefit Analysis, Resource Allocation, and Roadway Design Life

Task 2.02: Cost Comparison Statement; to Determine Workforce/Contract

Task 2.03: Projects Determined Workforce (Contracted See Gantt: Maintenance Contracts)

Task 2.04: Determine WMS Plan vs. Emergency Projects

When emergencies occur, such as a large pipe failure, District Planning, Design, Operations, the Sub-District Manager, Construction and Traffic will ascertain the emergency and develop repairs (either maintenance or contract) that will facilitate the cost and time estimates. Resources, material purchases or emergency contract letting procedures with time line completion dates are needed to perform this work.

Task 2.05: Environmental and Permit Requirement

Any projects having potential impact on environmental and permit requirements shall be reviewed by Office of Environmental Services (OES) or its district functional counterparts.

Step 3 Prioritization of Selected Workforce Projects

Task 3.01: Develop Roadway Preservation/Cost Sheets for WMS Plan Projects

Roadway preservation projects such as chip seal, crumb rubber and crack seal are organized by the Office of Development using road history graphs; last resurface date, traffic counts and future contract graphs.

Maintenance high costs sheets are created for each Sub-District; identifying those projects that are high priority for the plan year. The information provided on these sheets is: project type, location, planned material type and quantity, and month of planned accomplishment.

Task 3.02: Districts/Subs Develop Scenario Work Management Annual Plans with Unit Personnel

Before the Unit Foremen, Sub-District Manager and Field Maintenance Engineer can present a proposed plan to the Highway Operations Director, they must first review the current fiscal year work plan. To accomplish this task, the previous and current work plan must be reviewed as well as the requests for the next fiscal year work plan. With this information the Field Maintenance Engineer and the Sub-District Manager will enter all proposed work into the annual plan.

Task 3.03: Enter Workforce Projects into Scheduling System with Maintenance Tracking Number

Step 4 Budget Allotment

Task 4.01: Maintenance Field Engineer Submits Sub-District Workforce Budget Requests to the Highway Operations Director

Task 4.02: District Business, Human Resources and Highway Operations Director Allots Sub-Districts' Workforce Budgets

The Finance Manager and Highway Operations Director will gather the budget requests and divide the allocated Work Plan Funds among the Sub-Districts and the Traffic Department.

Step 5 Work Management Annual Work Plan Created

Task 5.01: Districts/Subs schedule Annual Work Plan Session with Office of Maintenance Administration

Once the previous and proposed work plan analysis has been performed and balanced accordingly, the Sub-District Manager and Field Maintenance Engineer will gather together to review the budget resources report, equipment schedule, high cost sheet and work calendar status for the current work plan. With this information, the work plan for the next fiscal year is presented by the Sub-District Manager to the Maintenance Engineer, Highway Operations Director and WMS Officer for approval.

Task 5.02: Work Management Section Staff Enter/Approve Annual Work Plans, at Sub-Districts

The WMS Officer, Field Maintenance Engineer and WMS Clerk, with hard copies of the new, reviewed, altered and accepted plan will now keypunch it into the Work Management System (WMS), for tracking and issuance of work orders.

Task 5.03: Edit Work Management System Tables and Scheduling System, if Necessary

At this time changes to the work plan will be made if errors or miscalculations are recognized.

Step 6 Establish First Bi-Weekly Schedule (Sub Scheduling Meeting)

Task 6.01: Update Work Management System, Beginning Fiscal Year Bi-Weekly Schedule

To update Work Management System and the Bi-Weekly schedule, the Operations Manager with the Unit Foremen need to have the completed plan and an understanding of the Sub-District goals. For this to occur, the plan, budget, the approved resources and material must be procured and on valid purchase orders.

Task 6.02: Every Two Weeks Throughout the Fiscal Year, WMS Updated with New Bi-Weekly Schedule

After a review of the equipment schedule and annual work plan, the Sub-District Manager and WMS Clerk, with help from the Unit Foremen, will complete the unit bi-weekly schedule. It is at this time also where the Unit Foremen will create their bi-weekly work orders for the decided upon activates. This is done in the Work Management System (WMS) at every Unit; identifying the necessary labor, equipment and materials needed to accomplish the bi-weekly schedule.

Step 7 Initiate Project Logistics - Hypothetical 1st Project 7/18/06

Task 7.01: Districts/Subs Coordinate Resources Prior to Beginning a Single Project

The Sub-District Manager, Administrator 6 and the Unit Foremen will determine when the resources are available and schedule them on the bi-monthly plan.

Step 8 Conduct Final Project Site Inspection and Preset Work Zone Set-up, if applicable

After a visit to the site, the Unit Foremen and crew leaders will discuss possible plan changes, altering of resources or traffic patterns as necessary.

Step 9 Begin Project

Task 9.01: Conduct Daily Safety Briefing

A safety meeting is given by the Crew leader as directed by the Unit Foremen. The safety meeting usually lasts about fifteen minutes and is a safety briefing for the assigned daily activities. Topics covered will include possible safety problems, work assignments, material and equipment used. During this meeting, crew members are given specific assignments and work direction for a more efficient performance.

Task 9.02: Begin Project- Update Scheduling System

With the list of supplies and equipment, the crew leaders and crew will load the needed material, insuring that they have the necessary items such as signs, message boards and cones.

Task 9.03: Report Daily for Work Management System

At the end of each work day, the actual work accomplished, labor used, equipment used, work location, date and the work activity will be updated and approved in the Work Management System by either the Crew leader or the Unit Foremen.

Step 10 Project Complete

Task 10.01: Enter Project Completion in Scheduling and Work Management Systems

The Unit Foremen will close/complete their Work Orders for the projects in the Work Management System; verifying that all assigned resource day cards are correct and approved.

Step 11 Continue Steps 6-9

Task 11.01: Evaluate Bi-Weekly / Monthly Performance / Productivity Throughout the Work Plan Cycle

Through the utilization of the WMS reporting features, the Unit Foremen, Sub-District Manager and Operations Management Analyst can evaluate work plan and budgetary accomplishments.

Step 12 Completion of Annual Work Plan

Task 12.01: Evaluate Last Fiscal Year Bi-Weekly Schedule for Year-End Productivity

This activity will provide information on the effectiveness and progress towards the completion of work plan goals.

Task 12.02: Finish Scheduled Projects by the End of the Third Week of June, if possible

This will allow for adequate time to enter accomplishments into the WMS for final evaluation and analysis.

Task 12.03: Finish Out Scheduled Projects and Update Scheduling and Work Management Systems

information will be developed after completion of the Major Steps.

A. Glossary

The following is a list of terms that are used throughout the course of this document.

Consultant

This is someone who is hired to perform a specific task in the Project Development Process (a contracted entity).

Designer

This is someone who is responsible to perform a noted task in the Project Development Process (may be in-house staff or a contracted entity).

Project Design Team

Used when referring to a group of Designers (from any discipline) that are involved in the design process.

Project Management Team

Used when referring to a group of decision-makers that are involved in the management process.

B. Acronyms

The following is a list of acronyms that are used throughout the course of this document.

INDOT
Indiana Department of Transportation

PDP
Project Development Process

SPMS
Scheduling/Project Management System

INSTIP
Indiana State Transportation Improvement Plan

TIP
Transportation Improvement Plan

MPO
Metropolitan Planning Organization

RFP
Request For Proposal

FHWA
Federal Highway Administration

C. Reference Manuals

The following is a list of manuals that are referenced throughout the course of this document.

D. Gantt Charts

The following are sample Gantt charts that may be considered templates.

Red Flag Survey

For a RED FLAG survey, the following Indiana Geological Survey GIS layers should be used:

- **PLSS & Quad Boundaries**
  - Counties
  - State
- **Contours, Imagery, & Other**
  - 2005 Aerial Map
  - Elevation
- **Roads**
  - Interstates (TIGER)
  - Roads (TeleAtlas – labeled)
  - Roadways (INDOT)
- **Other Infrastructure**
  - Airports
  - Cemeteries
  - Hospitals
  - Railroads (1:100,000)
  - Religious Facility
  - Recreational Facilities
  - Schools (HAZUS)
  - Trails
- **Environment**
  - Brownfields
  - Confined Feeding Operation
  - Construction Demolition Waste
  - Corrective Active Sites
  - Industrial Waste Sites
  - Leaking UG Storage Tanks
  - NPDES Facilities
  - NPDES Pipe Locations
  - Open Dump Waste Sites
  - Restricted Waste Sites
  - Septage Waste Sites
  - Solid Waste Landfills
  - Superfund Sites
  - Tire Waste Sites
  - Underground Storage Tanks
  - Voluntary Remediation Program
  - Waste Transfer Stations
  - Waste Treatment Storage Disposal
- **Hydrography**
  - Canal Routes – Historic
  - Canal Structures – Historic
  - Floodplain-DFIRM
  - Rivers and Lakes (NHD)
  - Wetlands
  - Wetland Line
  - Wetland Points
- **Watershed & Quality**
  - Lakes - Impaired (IDEM)
  - Streams – Impaired (IDEM)
- **Hydrogeology**
  - Cave Entrance Density
  - Hydrologic Terrains
  - Karst Springs
  - Sinkhole Areas and Sinking-Stream Basins
- **Economic Geology**
  - Industrial Mineral Site (Active 2001)
  - Petroleum Fields
  - Sand and Gravel Pits - Abandoned
  - Quarries - Abandoned
- **Mines**
  - Mines – Surface
  - Mines - Underground

In addition to GIS data, the red flag survey should include a review of the county interim report for historical properties. Any available information on Threatened and Endangered species should also be included to help project personnel make informed decisions.

Appendix F External Review Matrix -Major

External Review Matrices - Major Project

	Step 1			Step 2	Step 3	Step 4		Step 5	Step 6	Step 7				Step 8	Step 9	Step10
A - Required review and approval C – Required review and comment F – Information only N – Not applicable O – Optional review	Business Case	Public Participation Plan	Red Flag Summary	Research and Technical Analysis	Conceptual Solutions	Preliminary Alternatives	Environmental Field Studies	Preferred Alternatives	Stage 1 Destailed Design	Stage 2 Detailed Design	Final Detailed Noise Analysis	Final Environmental Document	Preliminary Right-of-Way Plans	Final Environmental Approval	Final Right-of-Way Plans	Land Acquisition
IDEM-UST	N	N	N	O	N	N	O	N	N	N	N	N	N	N	N	N
Federal Aviation Administration (FAA)	N	N	N	N	N	O	N	C	N	N	N	N	N	N	N	N
Federal Emergency Management Agency (FEMA)	N	N	N	C	C	C	C	C	N	N	N	N	N	N	N	N
Federal Highway Administration (FHWA)	N	N	N	N	C	C	N	A	N	N	A	A	N	A	A	A
Local Public Agencies	N	N	N	F	C	C	O	C	N	N	F	C	N	F	N	N
Metropolitan Planning Organizations	N	N	N	F	C	C	F	C	N	N	F	C	N	F	N	N
National Park Service	N	N	N	O	C	C	O	C	N	N	N	C	N	C	A	A
National Resources Conservation Services (NRCS)	N	N	N	C	C	C	O	C	N	N	N	O	N	N	N	N
Indiana Department of Natural Resources (IDNR)	N	N	N	C	C	C	C	C	N	N	N	C	N	N	A	A
Indiana Department of Environmental Management (IDEM)	N	N	N	O	C	C	C	C	N	N	N	C	N	N	N	N
Railroad/Railway Companies	N	N	N	N	N	C	N	N	C	C	N	N	N	N	N	N
State Historic Preservation Office (SHPO)	N	N	N	A	C	C	A	C	N	N	N	C	N	N	A	A
US Army Corps of Engineers (USACE)	N	N	N	C	C	C	C	C	N	N	N	C	N	N	O	N
US Coast Guard	N	N	N	C	C	C	C	C	N	N	N	O	N	N	O	N
US Department of the Interior (USDOI)	N	N	N	C	C	C	C	C	N	N	N	C	N	N	A	A
US Environmental Protection Agency (USEPA)	N	N	N	C	C	C	C	C	N	N	N	C	N	N	N	N
US Fish and Wildlife Service (USFWS)	N	N	N	A	C	C	A	C	N	N	N	C	N	N	F	N
Utility Companies	N	N	N	N	N	N	N	N	C	C	N	N	N	N	N	N

External Review Matrices - Major Project

	Step 11					Step 12	Step 13
A - Required review and approval C – Required review and comment F – Information only N – Not applicable O – Optional review	Stage 3 Detailed Design	Waterway Permit Application	Utility Agreement	Railroad Agreement	Contract Time Set	Final Tracings	Bid Letting
IDEM-UST	N	N	N	N	N	N	N
Federal Aviation Administration (FAA)	N	N	N	N	N	N	N
Federal Emergency Management Agency (FEMA)	N	A	N	N	N	N	N
Federal Highway Administration (FHWA)	N	N	N	N	N	N	N
Local Public Agencies	N	N	N	N	N	N	N
Metropolitan Planning Organizations	N	N	N	N	N	N	N
National Park Service	N	N	N	N	N	N	N
National Resources Conservation Services (NRCS)	N	N	N	N	N	N	N
Indiana Department of Natural Resources (IDNR)	N	A	N	N	N	N	N
Indiana Department of Environmental Management (IDEM)	N	A	N	N	N	N	N
Railroad/Railway Companies	C	N	N	A	N	N	N
State Historic Preservation Office (SHPO)	N	N	N	N	N	N	N
US Army Corps of Engineers (USACE)	N	A	N	N	N	N	N
US Coast Guard	N	A	N	N	N	N	N
US Department of the Interior (USDOI)	N	N	N	N	N	N	N
US Environmental Protection Agency (USEPA)	N	N	N	N	N	N	N
US Fish and Wildlife Service (USFWS)	N	N	N	N	N	N	N
Utility Companies	N	N	A	N	N	N	N

Appendix G Review Matrix -Major

Review Matrices - Major Project

	Step 1			Step 2	Step 3	Step 4		Step 5	Step 6	Step 7				Step 8	Step 9	Step10
A - Required review and approval C – Required review and comment F – Information only N – Not applicable O – Optional review	Business Case	Public Participation Plan	Red Flag Summary	Research and Technical Analysis	Conceptual Solutions	Preliminary Alternatives	Environmental Field Studies	Preferred Alternatives	Stage 1 Destailed Design	Stage 2 Detailed Design	Final Detailed Noise Analysis	Final Environmental Document	Preliminary Right-of-Way Plans	Final Environmental Approval	Final Right-of-Way Plans	Land Acquisitiion
District Construction	N	N	N	N	N	N	N	N	C	C	N	N	N	N	N	N
Office of Environmental Services	O	C	A	O	C	C	A	C	N	N	A	A	N	A	N	N
Estimating (Office of Project Management)	N	N	N	N	N	N	N	N	C	C	N	N	N	N	N	N
Geotechnical Engineering	N	N	N	N	N	N	N	N	C	C	N	N	N	N	N	N
Program Manager	A	N	N	N	C	C	N	C	N	N	N	N	N	N	N	N
Pavement Engineering	N	N	N	N	N	N	N	N	O	C	N	N	N	N	N	N
Project Manager	F	A	C	A	A	A	C	A	A	A	C	C	A	F	A	F
Railroad Coordinator	N	N	N	N	N	C	N	F	C	C	N	N	N	N	N	N
Real Estate (Region)	N	N	N	N	N	N	N	N	N	N	N	N	N	N	O	A
Real Estate (Utilities)	N	N	N	N	N	N	N	N	C	C	N	N	N	N	N	N
Office of Roadway Services	N	N	N	N	N	N	N	N	A	A	F	F	N	F	N	N
Office of Structural Services (Bridges)	N	N	N	N	N	N	N	N	A	A	F	F	N	F	N	N
Office of Structural Services (Hydraulics)	N	N	N	N	N	O	N	F	A	A	N	N	N	N	N	N
District R/W Services (R/W Engineering)	N	N	N	N	N	N	N	N	N	O	N	N	C	N	C	N
Office of Roadway Services (Traffic Engineering)	N	N	N	N	N	N	N	N	A	A	N	N	N	N	N	N
Urban & Corridor Planning	A	O	F	A	A	A	F	A	N	N	N	N	N	N	N	N

Review Matrices - Major Project

	Step 11					Step 12	Step 13
A - Required review and approval C – Required review and comment F – Information only N – Not applicable O – Optional review	Stage 3 Detailed Design	Waterway Permit Application	Utility Agreement	Railroad Agreement	Contract Time Set	Final Tracings	Bid Letting
District Construction	C	N	N	N	C	N	N
Office of Environmental Services	N	A	N	N	N	N	N
Estimating (Office of Project Management)	C	N	N	N	N	C	N
Geotechnical Engineering	C	N	N	N	N	N	N
Program Manager	N	N	N	N	N	N	N
Pavement Engineering	O	N	N	N	N	N	N
Project Manager	A	F	F	F	F	A	F
Railroad Coordinator	C	N	N	A	N	N	N
Real Estate (Region)	N	N	N	N	N	N	N
Real Estate (Utilities)	C	N	A	N	N	N	N
Office of Roadway Services	A	N	N	N	N	O	N
Office of Structural Services (Bridges)	A	N	N	N	N	O	N
Office of Structural Services (Hydraulics)	A	O	N	N	N	O	N
District R/W Services (R/W Engineering)	A	N	N	N	N	N	N
Office of Roadway Services (Traffic Engineering)	A	N	N	N	N	N	N
Urban & Corridor Planning	N	N	N	N	N	N	N

Appendix H External Review Matrix -Minor

External Review Matrices - Minor Project

	Step 1			Step 2	Step 3	Step 4	Step 5				Step 6	Step 7	Step 8					Step 9	Step 10
A - Required review and approval C – Required review and comment F – Information only N – Not applicable O – Optional review	Business Case	Public Participation Plan	Red Flag Summary	Determine Scope, Schedule and Budget	Environmental Analysis and Preliminary Engineering	Stage 1 Destailed Design	Stage 2 Detailed Design	Final Detailed Noise Analysis	Final Environmental Document	Preliminary Right-of-Way Plans	Final Right-of-Way Plans	Land Acquisition	Stage 3 Detailed Design	Waterway Permit Application	Utility Agreement	Railroad Agreement	Contract Time Set	Final Tracings	Bid Letting
IDEM-UST	N	N	N	O	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Federal Aviation Administration (FAA)	N	N	N	N	O	C	N	N	N	N	N	N	N	N	N	N	N	N	N
Federal Emergency Management Agency (FEMA)	N	N	N	C	C	C	N	N	N	N	N	N	N	A	N	N	N	N	N
Federal Highway Administration (FHWA)	N	N	N	N	C	A	N	A	A	N	A	A	N	N	N	N	N	N	N
Local Public Agencies	N	N	N	F	C	C	N	F	C	N	N	N	N	N	N	N	N	N	N
Metropolitan Planning Organizations	N	N	N	F	C	C	N	F	C	N	N	N	N	N	N	N	N	N	N
National Park Service	N	N	N	O	C	C	N	N	C	N	A	A	N	N	N	N	N	N	N
National Resources Conservation Services (NRCS)	N	N	N	C	C	C	N	N	O	N	N	N	N	N	N	N	N	N	N
Indiana Department of Natural Resources (IDNR)	N	N	N	C	C	C	N	N	C	N	A	A	N	A	N	N	N	N	N
Indiana Department of Environmental Management (IDEM)	N	N	N	O	C	C	N	N	C	N	N	N	N	A	N	N	N	N	N
Railroad/Railway Companies	N	N	N	N	N	C	C	N	N	N	N	N	C	N	N	A	N	N	N
State Historic Preservation Office (SHPO)	N	N	N	A	C	A	N	N	C	N	A	A	N	N	N	N	N	N	N
US Army Corps of Engineers (USACE)	N	N	N	C	C	C	N	N	C	N	O	N	N	A	N	N	N	N	N
US Coast Guard	N	N	N	C	C	C	N	N	O	N	O	N	N	A	N	N	N	N	N
US Department of the Interior (USDOI)	N	N	N	C	C	C	N	N	C	N	A	A	N	N	N	N	N	N	N
US Environmental Protection Agency (USEPA)	N	N	N	C	C	C	N	N	C	N	N	N	N	N	N	N	N	N	N
US Fish and Wildlife Service (USFWS)	N	N	N	A	C	A	N	N	C	N	F	N	N	N	N	N	N	N	N
Utility Companies	N	N	N	N	N	C	C	N	N	N	N	N	N	N	A	N	N	N	N

Appendix I Review Matrix -Minor

Review Matrices - Minor Project

	Step 1			Step 2	Step 3	Step 4	Step 5				Step 6	Step7	Step 8					Step 9	Step 10
A - Required review and approval C – Required review and comment F – Information only N – Not applicable O – Optional review	Business Case	Public Participation Plan	Red Flag Summary	Determine Scope, Schedule and Budget	Environmental Analysis and Preliminary Engineering	Stage 1 Destailed Design	Stage 2 Detailed Design	Final Detailed Noise Analysis	Final Environmental Document	Preliminary Right-of-Way Plans	Final Right-of-Way Plans	Land Acquisition	Stage 3 Detailed Design	Waterway Permit Application	Utility Agreement	Railroad Agreement	Contract Time Set	Final Tracings	Bid Letting
District Construction	N	N	N	N	N	C	C	N	N	N	N	N	C	N	N	N	C	N	N
Office of Environmental Services	O	C	A	O	C	A	N	A	A	N	N	N	N	A	N	N	N	N	N
Estimating (Office of Project Management)	N	N	N	N	N	C	C	N	N	N	N	N	C	N	N	N	N	C	N
Geotechnical Engineering	N	N	N	N	N	C	C	N	N	N	N	N	C	N	N	N	N	N	N
Program Manager	A	N	N	N	C	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Pavement Engineering	N	N	N	N	N	C	C	N	N	N	N	N	O	N	N	N	N	N	N
Project Manager	F	A	C	A	A	A	A	C	C	A	A	F	A	F	F	F	F	A	F
Railroad Coordinator	N	N	N	N	N	C	C	N	N	N	N	N	C	N	N	A	N	N	N
Real Estate (Region)	N	N	N	N	N	N	N	N	N	N	O	A	N	N	N	N	N	N	N
Real Estate (Utilities)	N	N	N	N	N	C	C	N	N	N	N	N	C	N	A	N	N	N	N
Office of Roadway Services	N	N	N	N	N	A	A	F	F	N	N	N	A	N	N	N	N	O	N
Office of Structural Services (Bridges)	N	N	N	N	N	A	A	F	F	N	N	N	A	N	N	N	N	O	N
Office of Structural Services (Hydraulics)	N	N	N	N	O	A	A	N	N	N	N	N	A	O	N	N	N	O	N
District R/W Services (R/W Engineering)	N	N	N	N	N	N	O	N	N	C	C	N	A	N	N	N	N	N	N
Office of Roadway Services (Traffic Engineering)	N	N	N	N	N	A	A	N	N	N	N	N	A	N	N	N	N	N	N
Urban & Corridor Planning	A	O	F	A	A	N	N	N	N	N	N	N	N	N	N	N	N	N	N