

# ODOT PROJECT DEVELOPMENT PROCESS (PDP)



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Appendix A PDP Graphic

## 1. Overview

The Ohio Department of Transportation (ODOT) has developed and implemented a 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. The PDP consists of five phases that projects must advance through prior to construction. These phases are Planning, Preliminary Engineering, Environmental Engineering, Final Engineering/Right-of-Way, and Construction. While all projects advance through these phases, Project Managers have the flexibility to adjust scope activities within the phases to better support decision-making. Depending on their size, complexity, and/or potential impact to the environment, ODOT transportation projects are categorized as one of five paths (Path 1– 5).

The PDP is a project management and transportation decision-making process that outlines project development from concept through completion. Each PDP activity is timed to facilitate informed decision making based on an appropriate level of project development and risk management. The PDP encourages communication among disciplines, requires documentation of the reasoning behind project related decisions, eliminates duplicated effort among disciplines, and provides for early identification of potential issues. Involvement of all disciplines during the early stages of project development ensures that issues affecting project type, scope, development schedule, and costs can be correctly evaluated and anticipated.

The PDP manual and associated tools provide guidelines to identify activities required during each phase of project development. The project scope determines the amount of work performed within the phases. Although both this manual and the [PDP website](#) identify work tasks, deliverables and potential stakeholders for each phase in the process, the process requires coordination of subject matter experts and tasks between phases to ensure continued review and study of the best possible options. The PDP is not a 100% linear process. Of course, certain tasks will have to be done in sequence (for example, Stage 2 Design must follow Stage 1 Design) but many tasks are intended to be performed concurrently. This will be done at the discretion of the Project Manager and the project management team, and as appropriate for a project. There can be an element of risk management in this; however, it is incumbent on the Project Manager and team to know their project and understand what the project may need to ensure successful completion.

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 Project Manager for each step is responsible for ensuring the appropriate coordination and involvement of other disciplines throughout the process.

## 2. 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, the project scope of services, and the approved contract. Project Managers should have a well-established approach before initiating a project. This approach, and all expectations, will be shared with the entire project team.

Project Managers also have the lead role in aggressively advancing the project through the process. This involves establishing a realistic, but streamlined schedule. Oftentimes, the Project Manager will need to make challenging decisions that are in the best interest of the project. Having a well outlined schedule which includes the major deliverables and tasks will help the project team meet its milestones and deliver the project on time.

All larger, more complex (Path 3, Path 4 and Path 5) PDP projects will have a dedicated Project Manager. ODOT usually assigns a district staff member to this leadership role. It is recommended that local sponsors assign this role to a staff or board member. When feasible, for project continuity, one Project Manager should oversee project development through all development phases of the PDP, Planning thru Final Engineering. Many times, it is standard practice for a new Project Manager to be assigned for the Construction Phase of the project.

The first responsibility of the Project Manager is to verify that the project has been entered into Ellis and a Project Identification Number (PID) has been established. The Project Manager will work with the project sponsor to identify a project team who will be responsible for completing the work required by the PDP. The Project Manager is also responsible for maintaining a project file in which to document all project activities and products. The Project Manager is also responsible for working with the District Environmental Coordinator (DEC) to ensure that required project information and files are uploaded to the environmental project file system, EnviroNet. Especially, important is to work with the DEC to continually document, monitor and implement all environmental commitments. In addition, the Project Manager will continue to communicate and coordinate with the appropriate ODOT District and Central Office subject matter experts throughout all project development phases.

As a beginning to the PDP, the ODOT Project Manager will coordinate or be involved in a “Project Start-Up Meeting” comprised of project team members and all appropriate stakeholders (see Section 5: Stakeholder/Public Involvement below). Attendees should discuss the project from their perspective so that all begin the PDP with a common understanding of project issues, transportation needs, and goals. A critical element to discuss at this meeting is the Project Initiation Package (PIP). The PIP is intended to be populated by the District team in order to identify necessary tasks to include when developing the project scope via the [Scope and Fee System](#) (SAFe). Typically, a field visit attended by District subject matter experts is used to evaluate the project area and assist in filling out the PIP.

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 and schedule, or may even develop the Request For Proposal (RFP) needed to hire a consultant. The goal for the “Project Start-Up” meeting is to make sure all stakeholders are identified and establish a general agreement on how to progress through the PDP while scoping the project.

Establishing a budget and cost containment strategy are activities that require diligence and effective monitoring. Project Managers will lead the effort in monitoring costs and in providing updates to the project team or key decision-makers regularly.

The Project Manager begins working with the consultant when the contract is authorized. However, it is recommended that the Project Manager be involved in developing the pre-Scope of Services, conducting the scope of services meeting with the consultant, evaluation of the consultant’s proposal, and negotiation of the fee if required.

The Project Manager’s responsibilities will include:

- Verifying that contract deliverables meet the scope of services requirements and that all required deliverables are received
- Coordinating and scheduling internal reviews of documents (Feasibility Studies, Alternative Evaluation Reports, Structure Type Studies, Access Point Request Documents, etc.) and plan sets (Stage 1, 2, 3 and Final Tracings)

- Ensuring compliance with all comments received throughout project development
- Establishing and monitoring project funding
- Providing technical guidance to the Consultant, or see that such guidance is provided by others
- Managing and balancing risks of the project
- Holding progress meetings on a regular basis
- Working with the District Environmental Coordinator to ensure completion of necessary environmental compliance and waterway permits.
- Coordinating all activities necessary to certify plans to Central Office, such as:
  - ✓ R/W clearance
  - ✓ Utility clearance
  - ✓ Necessary permits acquired
  - ✓ Railroad agreements
  - ✓ Cost estimate
  - ✓ Environmental clearance

The above list is not all inclusive. Other duties may be necessary depending upon the project's complexity.

### **3. Initial Identification of Projects**

Ohio's transportation system needs are assessed and prioritized to determine which projects will be funded. Federal and State laws and appropriations provide the groundwork for the methods which ODOT uses to collect and analyze data and finance projects. There are numerous documents and processes that address and prioritize transportation problems or needs. These include, but are not limited to:

- Access Ohio
- Long-range Transportation Plans of the various Metropolitan Planning Organizations (MPOs)
- District Work Plans
- Planning Studies
- Highway Safety Improvement Program
- Travel Demand Modeling
- Traffic Operations Assessment System Tool (TOAST) and TOAST maps

Transportation projects originate from a wide variety of sources and studies, such as those listed above. ODOT departmental reports are used to identify priorities and to determine how to allocate the available budget to different ODOT programs. If funds are available, projects are included in the Statewide Transportation Improvement Program ([STIP](#)) and the MPO's Transportation Improvement Program ([TIP](#)) and advance through the PDP.

Transportation projects also originate from local governments or private entities requesting to construct improvements on roadways under ODOT's control. Projects which are sponsored by local governments typically either secure funding from their local MPO or find other funding sources, including their own. Projects which use federal funding, such as MPO funds, at any phase of project development are required to comply with all requirements of the National Environmental Policy Act of 1969 (NEPA). Therefore, these projects are also required to follow the PDP in order to streamline project development and avoid unnecessary delays. Failure to follow the PDP often results in extensive delays to a project. These delays stem from the lack of decision-making deliverables necessary for the project and from the failure to receive the required approvals within ODOT or even the FHWA at the right time in the PDP. Some examples of such approvals are NEPA, Access Point Request documents (IOS, IMS, IJS), Design Exceptions, etc. As outlined in the [ODOT Location and Design Manual, Volume 3, Section 1401.5.4](#), locally sponsored projects (Local Public Agency (LPA) projects) are either classified as Local-Let LPA or ODOT-Let LPA projects. For projects that are privately funded but which require Federal approval (e.g. Access Point Request Documents, breaks in Limited Access Federal Right-of-Way, etc.), full NEPA compliance will also be required and thus compliance with the PDP is required.

The Planning Phase of the PDP assumes that conditions warrant that a transportation improvement is needed to address a problem identified through a prioritization process, as mentioned above. But it does not assume the specific project level needs to be addressed, facility type or project to be constructed. The PDP begins with a project level planning analysis to identify project specific needs in order to determine the right type, size, scope, phasing and location for a facility, mode, operational or management solution to solve the identified transportation problem. This determination of needs is called developing the Purpose and Need Statement. The Purpose and Need Statement is to be developed, reviewed and accepted before time and money are expended to advance extensive environmental analysis, design and eventual construction.

At the beginning of the planning process, the ODOT Project Manager will enter as much information as possible into ODOT's internal project tracking system, Ellis, in order to

generate a PID for study, research activities, and the potential project. While still in the conceptual state, a project is entered into Ellis in candidate status. A candidate project can be used as a placeholder and may contain funding estimates and even a projected award date. However, the candidate project does not yet have a completed scope of work.

## 4. Federal Oversight Determination

Some projects require oversight by the Federal Highway Administration (FHWA). The PDP requires that an oversight determination occur during the Planning Phase and, if applicable, continue throughout the PDP. Details of this determination and involvement can be found in [ODOT's Location and Design Manual, Volume 3, Section 1402.2](#). It is also documented in the [FHWA/ODOT Stewardship and Oversight Agreement](#).

In summary, FHWA oversight is determined by project type, cost and complexity. The responsibility for the determination and documentation of the need for Federal Oversight rests with the District Capital Programs Administrator, District Project Manager and FHWA. If Federal Oversight is necessary, FHWA should be included as a member of the project team, participate in team meetings and the decision-making process. However, pursuant to 23 U.S.C. 327 and a Memorandum of Understanding (MOU) dated December 11, 2015, and executed by FHWA and ODOT, ODOT has assumed all the USDOT Secretary's responsibilities for compliance with the National Environmental Policy Act of 1969 (NEPA) and other Federal environmental laws for highway projects within the State of Ohio subject to the terms and conditions set forth in 23 U.S.C. 327 and the MOU. These responsibilities include the environmental review, reevaluation, consultation, and other actions pertaining to the review or approval of highway projects required by applicable Federal environmental laws. In other words, under the FHWA NEPA Assignment Program, ODOT has assumed FHWA's responsibilities for all project level decision-making under NEPA. This means FHWA cannot be contacted to weigh in on project level environmental decisions for all environmental classifications whether Categorical Exclusions, Environmental Assessments or Environmental Impact Statements. For more information refer to <http://www.dot.state.oh.us/NEPA-Assignment/Pages/default.aspx>.

## 5. Project Classifications

The PDP categorizes transportation projects as Paths 1 through 5. Selection of the appropriate project path is based on the anticipated level of project development complexity. The project path identifies the recommended level of analysis, amount of stakeholder involvement, and activities performed during each phase. For purposes of classification, the relative complexity of a project should be evaluated on a statewide,

rather than district-wide basis. The PDP is designed to provide the necessary information to equitably and systematically advance the project in a logical sequence from the beginning of planning to the end of construction. While identifying a project path is important for initiating the scoping process, Project Managers have the flexibility to customize a project scope by adjusting required tasks to address project needs. Thus, a project's identified path is a starting point, but since it's a dynamic process, the path designation may change as project modifications are needed.

It is important to note that PDP phases represent conceptual groupings of activities. The activities from one phase do not necessarily need to be completed before advancing with activities in the next phase. For example, because right-of-way acquisition frequently falls on a project's critical path, it may be necessary to begin development of Preliminary Right-of-Way plans during development of the AER, prior to selecting the preferred alternative. Under this scenario, elements of the Environmental Engineering Phase occur while the project is still in the Preliminary Engineering Phase.

The scope task list in the Scope and Fee System (SAFe) that ODOT uses to scope projects is meant to be flexible. This allows the project scope to fit the complexity and uniqueness of each project. It may be prudent to advance or delay tasks in effort to document the decision-making process while balancing the level of effort and detail needed to make decisions during project development.

## **5.1 Path 1 Projects**

*Path 1 Projects* are defined as transportation improvements generated by the traditional maintenance and preventive maintenance program as they relate to the development of the District Work Plan. These projects:

- Do not alter the basic highway cross section or geometry
- Require no additional right-of-way
- Have minimal impacts on existing utilities
- Have no impacts to environmental resources
- Require no environmental agency coordination
- Are likely to require only minor public involvement
- Are typically processed as low level Categorical Exclusion (CE) NEPA documents.

Examples of Path 1 Projects Include:

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

## **5.2 Path 2 Projects**

*Path 2 Projects* are defined as simple transportation improvements that include minor structure and roadway work. Path 2 Projects can involve non-complex right-of-way acquisition (strip takes, temporary easements). Examples of Path 2 Projects include:

- Bridge rehabilitation and in-kind bridge replacement
- Culvert rehabilitation/replacement
- Isolated intersection improvements including turn lane additions, roundabouts, restricted crossing U-turns, etc.
- Resurfacing and non-capacity pavement widening

These projects will likely have one viable alternative. Some Path 2 Projects are very straightforward and their design activities can be combined for fewer submissions. For example, Stage 2 and Stage 3 detailed design may be combined for most culvert and/or bridge replacement projects. The level of detail provided in the various review submissions must be sufficient enough for internal and external reviewers to make informed decisions regarding the project's design features and environmental impacts. These projects will typically be processed as low level CE NEPA documents.

### **5.3 Path 3 Projects**

*Path 3 Projects* are defined as transportation improvements that generally are located on an existing alignment and may include capacity additions. Small adjustments to the existing alignment to improve geometric conditions may be involved. Substantial relocations of roadways that do not result in significant environmental impacts also can qualify as Path 3 Projects. Path 3 Projects can include a wide range of impacts, depending upon the amount of right-of-way required and therefore can be processed under a wide range of environmental document levels, from C2 thru D3.

Path 3 Projects can involve right-of-way acquisition, utility relocations, altering the highway's cross section, and raising or lowering the roadway profile. Examples of Path 3 Projects include:

- Moderate roadway and structure improvements
- Pavement rehabilitation including capacity additions usually within existing right-of-way
- Minor realignments
- Interchange improvements/reconstruction

The level of detail provided in the various review submissions must provide a sufficient level of detail for internal, and external, reviewers to make informed project decisions regarding the project's design features and environmental impacts.

### **5.4 Path 4 Projects**

*Path 4 Projects* are defined as mostly rural transportation improvements, where the anticipated result of the improvement is expected to:

- Have a significant impact to the highway's public access, level of service, traffic flow, mobility patterns, or mode shares
- Require substantial right-of-way acquisition
- Have a high degree of public controversy

Additionally, this classification applies to those highway transportation improvements that will require a substantial financial investment to complete all aspects of project development. These projects typically involve one or more of the following complex situations:

- Making significant alterations to the existing highway and structures (e.g., significant change to horizontal and/or vertical alignment)
- Developing a new highway alignment

These projects are typically located on a new alignment in a rural setting or significant right-of-way in a suburban setting 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. The [context and intensity](#) of impacts should be considered when addressing an impact on a resource. Path 4 Projects may require a higher level CE, Environmental Assessment (EA), or Environmental Impact Statement (EIS) NEPA document.

From a design perspective, Path 4 Projects are those in which new highway alignments or significant alterations to existing highway alignments will result in the examination of multiple alternatives as a necessary and systematic progression to selecting the preferred alternative.

## **5.5 Path 5 Projects**

*Path 5 Projects* are defined as mostly urban transportation improvements where the anticipated result of the improvement is expected to:

- Have a significant impact to the highway's public access, level of service, traffic flow, mobility patterns, or mode shares;
- Require substantial right-of-way acquisition, especially through the urban core;
- Require coordination of complex access management issues;
- Require significant utility relocation;
- Have a high degree of public controversy.

Additionally, this classification applies to those highway transportation improvements that will require a substantial financial investment to complete all aspects of project development. These projects typically involve making significant alterations to the existing highway (e.g., removal, addition or combining of access points thru the urban core)

These projects could include any project type in an urban setting 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. Path 5 Projects typically require an EIS or EA NEPA document, but could in some instances be processed as a higher level Categorical Exclusion NEPA document. If there are questions regarding the appropriate level of NEPA document, consult with the District Environmental Coordinator or the Office of Environmental Services.

From a design perspective, Path 5 Projects are those in which new highway alignments, or significant alterations to existing highway alignments, will result in the examination of multiple alternatives as a necessary and systematic progression to selecting the preferred alternative.

## **6. Stakeholder and Public Involvement**

Public Involvement (PI) is integral to project management. A project's path helps define a scope for public involvement efforts. Also, understanding the PDP allows the project team to determine when to engage the public. Public involvement activities will correspond to decision-making points in the PDP, such as development of the purpose and need and consideration of alternatives. The project team must continue to strive for proactive and strategic PI activities and refine these activities throughout project development.

All projects, regardless of path, require some level of public involvement. ODOT has defined PI requirements for all project paths in the Office of Environmental Services' [Public Involvement Requirements](#). This guidance defines PI requirements for projects during development of the NEPA document and also identifies activities required after completion of NEPA. The level of required environmental document will also influence the PI necessary for a project.

Typically, Path 1 and Path 2 projects will not require PI meetings to conduct public involvement activities. These projects will use Public Notification Letters, project websites, press releases, social media, etc. for keeping the public informed about the project. For

projects requiring a higher level of environmental document, D1 or higher, a Public Involvement (PI) Plan is required. These are typically Path 3 and higher projects. The Public Involvement Plan identifies how to best coordinate and communicate with the public and stakeholders. The Public Involvement Plan is a living document that is updated throughout project development in order to remain relevant. Projects requiring a D1 or higher level of environmental document, typically Path 3, 4 or 5, also require more rigorous public involvement activities such as PI meetings. Ultimately, the type of project and the impacts to the public will drive the type of public involvement. The project team need to continually assess what public involvement activities will drive good decision making.

Stakeholder involvement is also essential for every phase in the PDP, especially for more complex projects which may alter the transportation network or have a high level of Right-of-Way impacts within a community. Stakeholders are individuals and groups who are or may be impacted by, or have an interest in, a project. Typically, stakeholders include professional and technical staff from ODOT, affected local governments and agencies, elected and appointed officials, the general public, [Section 106 Consulting Parties](#), people and businesses, and underserved populations in the project area. Stakeholders provide information and offer a unique perspective in identifying the problem and what changes, or improvements, are needed to have a successful project.

The Project Manager is responsible for developing and implementing the Public Involvement Plan. However, higher level projects will require acceptance of the PI Plan by either the District Environmental Coordinator or the Office of Environmental Services. Often, Path 4 and Path 5 Projects, may utilize a designated ODOT staff person, other than the Project Manager, or a consulting firm to develop, manage, and implement the PDP related communication and PI Plan activities.

### Examples of Stakeholders

- Ohio Department of Transportation
- Federal Highway Administration
- Federal Transit Administration
- Local Transit Agency
- Metropolitan Planning Organization
- Local Public Agency
- Civic and Community Associations
- General Public
- Environmental Justice Populations
- Resource Agencies
- Special Interest Groups
- Section 106 Consulting Parties

The PI Plan outlines the strategy and responsibilities for informing and involving stakeholders during the Planning Phase and all subsequent steps of the PDP. The PI Plan development will begin during the “kick-off” meeting and will evolve as the stakeholders have an opportunity to comment and contribute ideas to it. Technically, the PI Plan continues through construction and may need to be revised to address changing public and stakeholder concerns, and needs.

The PI Plan will be flexible. It will 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 PI Plan 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. Using a combination of approaches is recommended.

Refer to [ODOT’s Office of Environmental Services’ Public Involvement website](#) and the *Public Involvement Manual* for public involvement requirements for each project type. These resources include details on how to identify and involve stakeholders, how to develop a PI Plan and how to ultimately conduct successful public involvement.

## 7. Project Meetings

Project meetings should occur at each PDP phase and at critical times throughout a project’s development. Each project should have an initial “kick-off” meeting.

The “kick-off” meeting will help define key personnel and the lead person responsible for each discipline at each phase of the PDP. In addition, a transition meeting is required at the end of some phases to facilitate a smooth transfer of responsibility as a new discipline takes over project responsibility. For more complex projects an extended transfer between disciplines may be required. A longer transition period, rather than a single meeting, is recommended so that the next project manager can be involved in decisions impacting the project footprint and have a sound understanding of the project’s scope.

Project Managers are to engage the project team during each of these meetings. This involves ensuring that the project is advancing according to the planned schedule, does not exceed the agreed to scope, and stays within cost limits as established by approved funding sources. Additionally, these meetings will be utilized to discuss the technical aspects of the project and the interaction of activities within each phase of the PDP.

## 8. 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. ODOT commonly follows this practice based on the integrated process of the PDP.

ODOT has integrated this objectivity assessment into the PDP. Every phase and coordination point of the PDP is thoroughly reviewed by ODOT and resource agencies, as appropriate, and subjected to public scrutiny. ODOT'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 the PDP, ODOT looks at discipline specifics prior to recommending decisions. This is done regardless of whether ODOT staff or consultants perform the work.

In cases where consultants are performing preliminary engineering work and environmental assessment activities, they are working under the close direction of an ODOT Project Manager. Work progress and products come under ODOT scrutiny and approval regularly.

ODOT's review of any environmental/design product is multi-disciplinary. In fact, many of ODOT's products in the PDP are jointly reviewed by all disciplines. This process carries on to the agencies with which ODOT coordinates, since many of ODOT's reviews are completed jointly with resource/regulatory agencies. For these reasons, ODOT and the FHWA Ohio Division Office have determined that when a project follows the Project Development Process, an individual objectivity review is not required.

## 9. Cost Estimates

A current cost estimate factored up to the year the project will be awarded, with explanations for any significant increase or decrease in project cost, should be provided in each phase of the PDP until the contract is awarded. Cost estimates may also be requested due to budget concerns or any other factor having an effect on the scope of services.

The Project Manager may be required to seek budget approval from the appropriate Funds Program Manager. The Funds Program Manager must balance the needs identified by the stakeholders versus the overall work plan needs for statewide/district projects.

Cost estimates will include construction, utility reimbursement, and right-of-way acquisition, including right-of-way acquisition services. The amount of right-of-way

needed for the project and how that right-of-way will be purchased (will it be a consultant via task order or programmatic, for example) both impact the schedule and cost of the project. For submissions during phases where multiple alternatives are being considered, a cost estimate for each alternative is required. Any significant increases or decreases in cost should be identified, evaluated and explained. Utility estimates should include costs to the State or other sponsoring agency, as well as costs borne by individual utility companies.

As the project evolves and becomes more defined, the level of detail and certainty in the cost estimate increases. Cost estimates include Planning, Design and Construction (Engineer's) Estimates. Contact ODOT's Office of Estimating for additional details.

## 10. Scoping

Because project development is a somewhat iterative process, it may not be possible for a single scope document, completed at the beginning of project development, to adequately address all project requirements. For larger projects with multiple alternatives it may be beneficial to develop an initial scope covering only the first few phases of the PDP. Once critical issues have been identified and evaluated, a revised scope for the remaining phases can be developed. Initial scope development for Path 4 and Path 5 Projects will include consideration of the study area, identifying the project's primary and secondary needs, initial development of the PI Plan and possibly even identification and evaluation of alternatives. Initial scopes of work for Path 3 Projects will include more detailed environmental and preliminary engineering considerations, including issues identified during the completion of the Project Initiation Package. Throughout project development, the Project Manager must monitor the Consultant's work product for compliance with ODOT's plan format requirements and with the Scope of Services. Additionally, at the completion of the contract the Project Manager and other subject matter experts who reviewed individual deliverables must perform the consultant evaluation at the completion of the contract.

## 11. Alternative Delivery Methods

### 11.1 Design-Build Projects

Design-Build Projects combine the detailed design and construction of a project into a single contract. The design firm and construction contractor form a team, working concurrently on the design and construction phases of a project, thus expediting project delivery. Refer to [ODOT's Location and Design Manual, Volume 3, Section 1400](#) for the review process for design-build projects.

All external agency approvals (e.g., FAA Notification/Clearance, Waterway Permits, LD-33 County Engineer Approval, Interchange Modification Studies, Design Exceptions and Railroad Agreements) and Central Office approvals (e.g., Waterway Permit Determinations, Design Exceptions, Interchange Modification Studies, NEPA, etc.) must be obtained. Contact the Division of Construction Management for additional information on the Design-Build process.

## 11.2 Emergency Projects

An emergency condition is defined as a situation which creates a threat to public health, welfare, or safety, which may arise by reason of epidemics, riots, equipment failure, or such other reasons as may be proclaimed by the governor. Emergency projects require substantial flexibility in the PDP process. Emergency projects are classified as follows:

- Type A: Type A emergency projects are the highest priority of emergency projects. There are no plans, proposals or bidding procedures for this type of emergency project.
- Type B: Type B emergency projects do not require advertisement. Bidding is restricted to the District's suggested bidders list. Simplified Plans (refer to [ODOT's Location and Design Manual, Volume 3, Section 1301.2](#)) with biddable quantities are prepared. There is a minimum of 4 to 6 weeks to the letting date.
- Type C: Type C emergency projects are open to all interested contractors. Plans with appropriate supporting documentation are prepared. There is a minimum 8 weeks to the letting date.

Any project designated as an Emergency Project must include an Emergency Declaration in the plan package submittal. The Emergency Declaration acknowledges that the project is eligible to be processed as an emergency in the interest of public safety and convenience. It also acknowledges that the project is eligible to follow an abbreviated advertising schedule in accordance with [Section 5517.02 of the Ohio Revised Code](#).

Typically, the proposed actions associated with emergency projects meet the criteria for C1 or C2 level NEPA actions, and require minimal environmental review and documentation. Since emergency projects can be federally or state funded, all applicable federal and state laws, regulations, and executive orders regarding environmental consideration must be adhered to despite the category of emergency project. Regardless of the level of environmental documentation required, NEPA must be approved before proceeding to advertising.

ODOT employees can refer to the [ODOT Emergency Relief \(ER\) Program Manual](#) for more information. The District may contact the Office of Estimating for information regarding contracts for emergency projects. The Office of Environmental Services can provide support for environmental issues related to emergency projects.

## **12. Technical and Process Manuals**

ODOT has 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. Refer to the [Design Reference Resource Center website](#) for a listing of ODOT Reference Materials.

## **13. Roles and Responsibilities**

The District is responsible for classifying a project's path. Prior to selecting the project pathway, the Project Manager should broadly define general project conditions, possible impacts, limiting constraints, and possible solutions in an effort to make 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. The project manager is also responsible for updating Ellis throughout project development to match the project's scope of work, including considerations for changes in the schedule, work type and locations.

## **14. Contract Management**

There must be one person who will serve as the primary contact in the ODOT District office for administering a consultant contract, and that person is the Project Manager. It is important that the Consultant gets direction from only one person for day-to-day matters involving plan reviews, deliverables, schedules, etc., to avoid receiving conflicting directions and to establish the authority of that one person. It is equally important that this one person be accountable for, and has the authority to administer, those day-to-day activities in order to develop a sense of ownership of the project. This ensures that the person closest to the project is able to directly see that the contract requirements are met. This approach equates with most consulting engineering firms which also assign a Project Manager to oversee that contract requirements are met.

Additionally, there must be within the ODOT District office, a counterpart to the Consultant's vice-president, or managing partner. That person is the Contract Manager. The

Contract Manager will have the responsibility for oversight of the consultant selection process. He or she will not manage each consultant contract directly, but will be involved in any contract modifications or breach of contract decisions.

If the Project Manager finds that a Consultant has not performed according to the scope of services, the Project Manager must immediately inform the Consultant of the deficiency and require an acceptable method, and timeframe, for a corrected item.

The Project Manager and the Contract Manager will be in frequent communication regarding any and all aspects of contract management on a project. It is critical that the Project Manager and the Contract Manager be in communication to avoid working outside of the project's scope. For example, the Project Manager needs to ensure that any direction given to the consultant is within the scope of services for the project. If it is determined that critical work must occur that is outside the scope of work then it is the Project Manager's responsibility to work with the Contract Manager to revise the contract.

The basic components of the contract to be monitored by the Project Manager are:

- Compliance with Scope of Services
- Schedule
- Consultant Contract Budget
- Project Budget
- Quality
- Record keeping

Planning is the first phase of the PDP. The purpose of the Planning Phase is to utilize a multi-disciplinary approach to identify transportation problems, assess existing and future conditions, identify stakeholders, develop goals and objectives, define the purpose and need and determine the scope, schedule and budget for the project. The approach should incorporate the guiding principles of Performance Based Project Development. Planning efforts need to balance the need to move people safely and efficiently while fostering transportation projects that preserve and enhance the natural and built environments, as well as the economic and social assets of the neighborhoods through which they pass.

## 1. Project Start-Up

ODOT's District Planning and Engineering staff, except for locally sponsored projects, will take the lead in conducting project work tasks associated with the Planning Phase and will assist the local agency on LPA projects to ensure necessary tasks are completed. It is the responsibility of the ODOT District team to ensure that projects have been identified based on strategic transportation needs and funding projections prior to starting the Project Development Process (PDP). There are numerous programs, studies and documents that outline the state's transportation needs and those that should be advanced based on existing conditions, functionality, safety or program need.

The Planning Phase of the PDP assumes that conditions warrant that a transportation improvement is needed to address a problem identified through a prioritization process but it does NOT assume the specific project level needs to be addressed, facility type or project to be constructed. The PDP begins with a project level planning analysis to identify project specific needs in order to determine the right type, size, scope, phasing and location for a facility, mode, operational or management solution to solve the identified transportation problem. This determination of needs is called developing the Purpose and Need Statement. The Purpose and Need Statement is to be developed, reviewed and accepted before time and money are expended to advance extensive environmental analysis, design and eventual construction.

All tasks and activities that are discussed in this chapter support and aid the decision-making process in determining whether to advance a project into more detailed preliminary engineering and environmental analysis, and on into final design and construction.

## **2. Planning and Programming**

ODOT project planning begins with the identification and understanding that there is a problem at a general location and is a high priority. ODOT's project planning process does not begin with a specific project solution in mind. There are many avenues that identify transportation problems or needs. ODOT has many assessment and prioritization tools such as ODOT's statewide safety and congestion analyses, Traffic Operations Assessment Systems Tool (TOAST), Pavement Condition Ratings, Bridge Inspection reports, District work plans, etc. The Metropolitan Planning Organizations (MPOs) have their transportation planning process and Long Range Plan (LRP). Finally, local governments may have their own transportation plan, or utilize independent systems' analysis or planning studies to help them identify potential transportation problems and needs. For these projects, the project sponsor needs to ensure that the potential project is identified as a need in an appropriate comprehensive plan.

Once these potential problems and needs have been put forward, they are categorized and assigned to potential funding source(s) embodied in ODOT funding programs. This programming of these potential projects involves prioritizing and matching them with available funds through the various phases of project development. This is accomplished prior to, but also aids in determining the scope of the potential project. ODOT Districts are responsible for initiating these tasks and ensuring that potential projects advance through the project development process in an appropriate and timely manner.

## **3. STIP/TIP**

The Transportation Improvement Program (TIP) is a listing of the specific prioritized transportation system improvement projects scheduled for implementation within an MPO's boundaries within a four-year period. All projects financed with United States Department of Transportation (USDOT) surface transportation funding must be included on the Statewide Transportation Improvement Program (STIP) and, in an MPO study area, on the appropriate TIP. Projects in rural areas and areas outside an MPO study area must be listed on the STIP as well.

## **4. Internal Meeting with Project Sponsor and ODOT**

At the onset of the project, the Project Manager holds a "kick-off" meeting involving all appropriate ODOT disciplines. Each project will require a separate kick-off meeting with the project team to ensure that the activities are coordinated and understood. Attendees discuss the project from their perspective so that all disciplines begin the PDP with a common understanding of project issues. Recognizing that conditions will change as more

information becomes available; the meeting attendees identify the project team, define the general work requirements, and develop an initial schedule agreed to by all team members. A project team can include ODOT, the Federal Highway Administration (FHWA), an MPO, the Local Public Agency (LPA), and the consultant staff working on the project. At times a project on ODOT's program may be sponsored by an entity from the private sector; in those situations, the project team would also have a representative from that entity.

## 5. Project Initiation Package

The Project Initiation Package (PIP) is intended to provide a snapshot of potential issues and concerns that could require major scope, schedule or cost issues during project development. Knowing about and avoiding problematic issues will save time and money. The PIP is produced early in the Planning Phase by the ODOT District staff and is required for ODOT projects following Paths 2-5 (refer to the [PDP Resources web page](#)). Though it is unlikely that the PIP will be needed for a Path 1 project, it is possible that some technical and/or resource areas may need to be considered on some projects. In those cases it is recommended that the PIP form be utilized to document any issues.

The PIP must be developed, reviewed and approved by the District. In addition, Central Office and external agency reviews may be necessary. The information related to this task is gathered by the District scoping team through secondary source literature searches and field reviews for the purposes of refining the scope of a given project.

The PIP is a compilation of information collected via field visits and/or in office discussions by District subject matter experts. The PIP form required for use is available on ODOT's [PDP Resources web page](#).

Environmental, geometric, geotechnical, structural and right-of-way are just a few of the areas to be identified and researched in the PIP within the project study area. The information gathered for the PIP may not necessarily identify locations that must be avoided, but may identify locations that require additional consideration, coordination, creative management or design approaches. The Project Manager will ensure consultation with the appropriate subject matter experts to determine the level of concern for potential issues identified during development of the PIP.

Identifying the project area resources in the study area involves documenting the results of secondary source reviews and conducting a preliminary site review of the study area. The secondary source documentation provides an inventory of known geotechnical, environmental, social, cultural, etc. resources in the study area.

All of this information – plus field observations from the site visit – will be recorded on the PIP form. Field observation data is critical, because what is seen in the field can trigger the need for additional investigation, can confirm presence or absence of resources, and can identify resources that were not in the secondary sources reviewed for the project. The PIP is critical to successful project development as it sets the stage for scoping the project.

Once finalized, the PIP is used to better understand the project area and to scope consultants. The PIP form has been developed to ensure consistency when identifying project issues. This will assist the Project Manager and team in developing a standard process that is focused on issues that are most common or expected with transportation projects. It also helps provide a level of statewide consistency among districts as they scope consultants who conduct work across district boundaries.

## **6. Conduct Field Review**

As mentioned in Section 5, ODOT District staff and sometimes other members of the project team visit the potential project site to confirm the problem and discuss solutions which could be proposed for the project. It is during the site visit that environmental, traffic operations, design, just to name a few, issues will start to be identified and the PIP can be further populated. The site visit is best done as a group but may be done individually and later reviewed jointly. The field review provides the opportunity to confirm secondary source information and familiarize the project participants with the study area.

## **7. Define Study Area**

Defining an adequate study area is critical to project success. The initial study area limits should have been identified through the long-range planning or systems analysis that identified the transportation problem. The general area for which data is to be collected and from which the stakeholders are to be identified and engaged is based on the size of the study area. During the Planning Phase, the study area is verified and refined based on input from the project team (including ODOT's technical staff) and stakeholders. The study area will continue to be larger than the potential project's logical termini and will be larger than the project area. 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. Projects with the potential for an Access Point Request Document (interchange study) require certain limits to be included in the evaluation of future alternatives and this will need to be taken into consideration when defining the study limits. Refer to [Section 550 of the ODOT Location and Design Manual, Volume 1](#) for further information.

Appropriately defining the project's study area is important when developing the Purpose and Need Statement. A requirement of the Purpose and Need Statement is identifying the project's logical termini and independent utility. Refer to Section 14 in this chapter. So when early efforts are aimed at identifying the study area, keep in mind the intended outcome of having established logical termini and independent utility for the project.

FHWA's regulatory guidance provides specific direction for determining whether a project has reasonable logical termini:

*"In order to ensure meaningful evaluation of alternatives and to avoid commitments to transportation improvements before they are fully evaluated, the action evaluated in each environmental impact statement or finding of no significant impact (FONSI) shall:*

- *Connect logical termini and be of sufficient length to address environmental matters on a broad scope;*
- *Have independent utility or independent significance; that is, be usable and be a reasonable expenditure even if no additional transportation improvements in the area are made; and*
- *Not restrict consideration of alternatives for other reasonably foreseeable transportation improvements.*

*For the vast majority of highway projects, the choice of logical termini will be obvious and non-controversial. For those few major projects where other considerations are important, the termini chosen must be such that:*

- *environmental issues can be treated on a sufficiently broad scope to ensure that the project will function properly without requiring additional improvements elsewhere, and*
- *the project will not restrict consideration of alternatives for other reasonably foreseeable transportation improvements."*

In addition, the analysis of the study area and logical termini should take into account other current and future projects adjacent to or in the area of the current project.

## **8. Transportation and Land Use Plans**

It is important to discern if there have been previous planning studies completed by ODOT or LPAs in the current study area. These can be used as a source for project data and

information. Every effort will be made to use existing work, to understand conclusions and recommended solutions from those studies.

Typically, substantial amounts of existing analytical material are available. Much of the available analysis is contained in prior studies and reports. The difficulty is identifying which material will advance the project. Analyses available may include traffic modeling; capacity analysis; crash analysis; physical systems inventory analysis; social, economic and environmental studies; utility and right-of-way assessment, and other engineering assessments.

Review the available information to determine its usefulness to the project. Much data may be available but it may not meet current analyses methodologies, some which are discussed below. This will also begin the process of determining what data will need to be collected as part of the current project.

## 9. Traffic Data

Traffic Forecasting dates back to the 1930s when the Bureau of Public Roads first started the federal financing of highway projects. From the very beginning, traffic counts were collected and growth rates were applied to produce a travel demand forecast used for planning and design purposes. The purpose of traffic forecasting is to produce future estimates of average daily traffic (ADT), design hour volumes (DHV) and truck percentages (TD and T24) for use in planning and design.

A project's Path may impact when and how traffic forecasts are obtained. However, due to there not being a one to one correlation between a project path and the level of detail needed to develop appropriate traffic data for any given project type, consult with the [Office of Statewide Planning and Research, Modeling and Forecasting Section](#) to determine the type of modeling required. For most Path 1 and 2 projects, no traffic modeling is needed. These projects are considered low risk as these are simple projects which do not add capacity or change traffic network connections. If a traffic forecast is needed for these projects, the Simplified Highway Forecasting Tool (SHIFT) can be used to obtain data. Note that this tool can only be used on State or US routes and is only available for use by ODOT personnel. Higher risk projects, typically Path 3 and higher, where mainline capacity additions, new ramp connections or other traffic network alterations occur, modeling beyond what the SHIFT tool can provide will be needed. For these projects, Certified Traffic (CT) will be requested. Note that "higher risk projects" in this section is being used in the context of determining traffic data for the project, not in the sense of the overall risk of the project, as used in the context of the PDP throughout the rest of the manual.

Certified Traffic is a term referring to a traffic forecast that has been certified by ODOT's Modeling and Forecasting Section (M&F) of the Office of Statewide Planning and Research. The need for CT forecasts was originally dictated by a 1973 directive from the FHWA. The [ODOT Location and Design Manual, Volume 1, Section 102](#) requires all forecasted traffic data to be obtained using the forecasting guidelines of the [Office of Statewide Planning and Research, Modeling and Forecasting Section](#).

Certified Traffic by M&F refers to traffic forecasts which they develop and to forecasts developed by others but which they review, or 'certify'. Traffic forecasts developed by M&F utilizes a hybrid of the methodologies discussed in NCHRP 255 and 765 plus some internal processes singular to ODOT. Certified traffic is typically requested by Central Office or District Personnel. Every District has a CT contact. A [Certified Traffic Request Form](#) must be submitted by the CT District Contact to M&F to initiate the process.

For higher risk projects, a Preliminary Traffic Coordination Meeting will be held. This meeting will be held during project scoping and will avoid delays in development of the traffic forecast. The correct necessary stakeholders will need to be included to ensure that potential information gaps are identified early on. The [Office of Statewide Planning and Research, Modeling and Forecasting Section](#) includes more guidance on when to hold these meetings and other pertinent data required for the traffic forecasting process.

Planning level traffic is a less detailed type of traffic forecast developed by M&F and is designed to answer questions on the order of magnitude of the addition of a general purpose travel lane in a certain location or changes in the roadway network that are expected to result in significant traffic diversion. For major projects, the equivalent of planning level traffic is generated during the development of design traffic whether it is requested or not and can be developed for many alternatives with much less manual effort than design traffic and does not require new traffic counts. This type of traffic does not generally include turning movements and is usually representative of daily rather than hourly traffic volumes. Therefore, careful consideration should be given to obtaining CT for the No Build Condition if more detailed analysis is required to identify operational failures for the purposes of establishing the Purpose and Need of the project.

For projects that include impacts which require a D1 or higher level of environmental document, a Purpose and Need Statement is required. For these projects including congestion as a need element, No Build traffic data must be obtained. No Build traffic data and related traffic analyses are imperative to quantitatively support the need element of the project. Therefore, when requesting forecasted traffic obtain the level of detail necessary to support deficiencies in the No Build condition.

Begin discussions early to determine the necessary traffic data for a project. If traffic data is anticipated to be needed from the [Office of Statewide Planning and Research, Modeling and Forecasting Section](#), consult with them early in the process. Refer to their website for information regarding the certified traffic process and what information is needed.

## 10. Safety Considerations

The Ohio Department of Public Safety is responsible for compiling, analyzing, and publishing crash statistics in the State of Ohio. The information is compiled from thousands of crash reports filed by local law enforcement agencies statewide. The Ohio Department of Transportation and other state, local and federal agencies use this data to identify high-crash locations for engineering improvements, enforcement of traffic laws and public education.

Safety is one of the key resources assessed during the Planning process. As defined in the [ODOT Location and Design Manual, Volume 1, Section 106](#) and as also noted on the [Project Initiation Package](#), for certain project types the project study area will be assessed as to whether the project is located within a safety priority location. Section 106.2 of the [ODOT Location and Design Manual, Volume 1](#) identifies for which projects this process applies. This is done by first reviewing the Safety Integrated Project, or SIP, maps located on the [Highway Safety Programs “Map Room” website](#). These maps are presented by County and are divided between the State and the Local System.

Safety priority locations are shown by either red or blue dots. A red dot indicates a high priority location which is eligible for supplementary safety funds from the Highway Safety Improvement Program (HSIP). The Safety Program has created a much-abbreviated supplementary funding application process, outside of the safety funding cycle, by which requests for these additional funds can be made. Please note that if the scope of proposed countermeasures is inconsistent with a project’s ability or schedule to implement, the location then will be addressed by the District Safety Review Team (DSRT) via the standard Highway Safety Program process. A blue dot indicates a low priority location which would be appropriate for implementing low cost countermeasures in the project using project funds.

In order to identify the appropriate countermeasures for these high priority locations, a review of crashes using the most recent 3 years of crash data is required. ODOT’s [Transportation Information Mapping System \(TIMS\)](#), or [Geographic Information Systems Crash Analysis Tool \(GCAT\)](#) can be used.

If the project study area does not coincide with any priority locations on a SIP map then a review of crashes using the most recent 3 years of crash data is still required. If a pattern exists or if there have been more than one fatal or serious injury crash within the project area, safety improvements will be considered with the project.

Refer to the [ODOT Location and Design Manual, Volume 1, Section 106](#) for further information regarding applicable projects, funding application processes and required project documentation.

## **11. Existing and Future Conditions Analysis**

Existing and future conditions are analyzed to identify and quantify deficiencies in the project area. These analyses are then used as the basis for the development of the Purpose and Need Statement. They provide the necessary quantitative supporting documentation for the Purpose and Need Statement. Examples are capacity analysis of design year traffic conditions, structure analysis, hydraulic analysis, safety analysis, geologic issues, geometric assessments, etc. Therefore, a vital step in this process is to obtain subject matter expert reviews of these analyses as part of the process when developing the project Purpose and Need. These analyses must employ ODOT accepted methodologies. Various ODOT design manuals, such as the Bridge Design Manual, Location and Design Manuals, etc. provide detailed information on how to identify deficiencies. All ODOT design manuals can be found at the [Design Reference Resource Center](#).

## **12. Performance Based Project Development**

When identifying deficiencies as part of the existing and future conditions analysis, Performance Based Project Development (PBPD) needs to be considered. PBPD is a concept promoted by the Federal Highway Administration (FHWA) and incorporated by ODOT into the PDP. The premise of PBPD is that improvements should be right sized based on specific needs and not an attempt to meet current standards in all deficient areas, regardless of the impacts or outcomes of meeting those standards. The general premise places less emphasis on strict adherence to standards and more significance of safety and operational performance. PBPD is a design-up philosophy where the existing condition is the minimum standard. Therefore, when incorporating PBPD, successful solutions sometimes demonstrate incremental improvements over the existing condition, not wholesale redesign of the project area.

PBPD begins in the Planning Phase when needs of the project area are identified by Primary and Secondary Needs. Primary Needs are those which must be addressed by the project in order to satisfy the Purpose and Need (P&N) of the project. Secondary Needs are

those which can be addressed by the project but whether or not to address secondary needs is determined later in the process during alternatives analysis. These needs will only be addressed if impacts and costs are not too high. Examples are project elements that do not meet existing standards, policies, guidance or driver expectancy but do not impact safety, operations, maintenance or stakeholder concerns.

When considering identifying primary and secondary needs, the project team needs to consider how some decisions can affect later processes or approvals within the PDP. Examples are the Structure Type Study, Access Point Request Documents, or Design Exceptions. These deliverables may require approvals by certain offices or even FHWA, so while there is no specific approval process for which needs can be primary or secondary or what alternatives can be proposed to address these needs, which entities have required approvals for certain processes within the PDP, should be consulted early and often when making these decisions.

For additional details and guidance refer to [Section 1000 of the ODOT Location and Design Manual, Volume 1](#).

## **13. Purpose and Need Statement**

Based upon the project's environmental document level, the Project Manager ensures development of a Purpose and Need (P&N) Statement based on an analysis of existing and future conditions and stakeholder concerns. Note that projects requiring a D1 or higher level of environmental document require a formal P&N Statement. Conversely, while a formal P&N Statement is not required for C2 or lower environmental documents, the reasons for the project can still be documented in the project file of EnviroNet. Refer to the [Office of Environmental Services' website](#) for more information regarding environmental document levels. The Purpose and Need Statement will be detailed enough to quantitatively define the transportation problem and establish the verified need for the project.

The Purpose and Need Statement is the catalyst for identifying and analyzing reasonable strategies. For projects with multiple feasible alternatives, the Purpose and Need Statement assists with selecting the preferred alternative. It will be comprehensive, specific, and concise, so that decision-makers and the public alike can use it to balance the project alternatives against associated impacts. A clear, well-defined, Purpose and Need Statement is also an essential element for successful interagency coordination, and communication, during the environmental and permitting processes. The Purpose and Need Statement is considered draft until the NEPA document is approved. Therefore, the

P&N can be updated throughout project development if conditions are altered considerably during the life of the project.

Ultimately, the Purpose and Need Statement:

- Defines the primary and secondary transportation needs to be addressed by the proposed action.
- Establishes the logical termini and
- Demonstrates that the project has independent utility (i.e., it is a functional project and is a reasonable expenditure, even if no additional transportation improvements are made in the area).

Refer to ODOT's Office of Environmental Services' (OES) *Guidance for Developing Purpose and Need* for details on what is included in a P&N Statement, format, review and approval process and additional details on how PBPD plays a role in development of needs.

## **14. Stakeholder Involvement and Public Involvement Plan**

Stakeholder involvement is an essential element for establishing the project's Purpose and Need Statement. Stakeholders are individuals and groups who have an interest in the project. Outside ODOT, stakeholders for a project can include affected property owners, local governments, Section 106 Consulting Parties, resource agencies, and permitting agencies. For many of ODOT's smaller projects, the stakeholders can be limited to individuals from each of ODOT's internal disciplines (for instance, Planning, Environmental, Design, Real Estate, Utilities, Construction, and Maintenance). Due to the broad range of projects, the Project Manager, in consultation with the District Environmental Coordinator, determines the appropriate level and timing of stakeholder involvement.

The Project Manager is responsible for developing a plan to inform and provide opportunities for stakeholder involvement throughout the PDP. During this Phase, the Public Involvement Plan (PI Plan) is developed to guide how the stakeholders and the public will be engaged during project development. The PI Plan can include activities such as an informational meeting, newsletters, project website postings, handouts provided at a local event, or a more formal meeting or public hearing. The project's scope and expected impacts determine what is necessary for each project. Depending upon the environmental document level, the District Environmental Coordinator or the Office of Environmental Services will be required to review and accept the PI Plan. Refer to the [Office of Environmental Service's public involvement website](#) for more information about public involvement.

The Project Manager will need to be familiar with similar projects conducted in the area and note past stakeholder and public communication challenges and successes. If the Project Manager has no previous experience on which to draw, a meeting with the affected local government and experienced District or Central Office personnel might be necessary to determine how to provide information about the project. Refer to the Stakeholder and Public Involvement section (Part 5) in the Introduction chapter of this manual and Section 9 in this chapter for additional information.

### Examples of Stakeholders:

- Ohio Department of Transportation
- Federal Highway Administration
- Federal Transit Administration
- Local transit agency
- Resource agencies
- Metropolitan Planning Organization
- Local public agency
- Civic and community associations
- Section 106 Consulting Parties
- General public
- Special interest groups

## 15. Concept, Scope, and Budget Estimates

Building upon data from the existing conditions, project research, and other analyses, the information can be used to better define which alternatives are carried forward for consideration in the Feasibility Study in the Preliminary Engineering Phase, for those projects needing an alternatives analysis (typically Path 3 and higher). At this point in the process, the project team will want to ensure that the design concept and preliminary design scope are appropriately defined and moving in the right direction.

The design concept is a detailed definition or description of the transportation alternative or strategy that best meets the identified need. This would include a definition of mode(s), general physical design characteristics, optional parameters, and required intermodal linkages (where applicable). The preliminary design scope is the general location, conceptual alternative, logical termini, and service area of the proposed project.

A project budget will be developed in the Planning Phase for all Path 1- 5 projects. The Project Manager may be required to seek budget approval from the appropriate Funds Program Manager. The Funds Program Manager must balance the needs identified by the stakeholders versus the overall work plan need for statewide/district projects.

The cost estimate, including the construction, utility relocation, and right-of-way acquisition estimates, will be refined further as the project progresses through subsequent phases of the PDP.

## **16. Project Management for Planning Phase**

It is imperative to get a project started successfully. Projects that are well-organized from the beginning and have a dedicated team are more likely to stay within their budgets and meet established timeframes. Solid project management will also aid in working with the varying aspects of transportation projects and their stakeholders.

### **16.1 Meetings**

The Project Manager is responsible for holding regularly scheduled meetings. The project team and relevant decision-makers should be invited to meetings to ensure that the project is advancing according to the established scope, schedule and budget. Additionally, it is a time for the project team to evaluate the team's organization, resources and responsibilities. Each meeting should be well organized and documented for the project file. The project team will need to depart from meetings understanding the objectives, goals and tasks scheduled for completion.

### **16.2 General Oversight**

The Project Manager is responsible for oversight of the project and how it progresses over its lifetime. Having a solid plan of action for the longevity of the project is critical to its success. Project Managers should be prepared to make adjustments as necessary due to changes in project priority, funding, staffing, or stakeholder feedback.

Flexibility is important to provide the continuity needed for managing transportation projects over a long period of time. In addition to meetings and schedules, Project Managers may consider other tools such as including well-defined quality control processes, changing management processes, and creating contingency and communication plans for measuring project success and managing risk.

## **17. Transitioning to Preliminary Engineering**

There are several tasks that the Project Manager must ensure are completed during the Planning Phase. These critical elements of overall project development form the basis for the work to be undertaken during the Preliminary Engineering Phase. During the Preliminary Engineering Phase, the project team will begin the process of gathering more detailed information by conducting technical studies, more detailed engineering analysis, and involving and informing stakeholders and the public during project development. This Planning Phase work creates the foundation upon which the later PDP phases depend. A

# Planning Phase

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successful project will proceed through project development, always building upon quality work performed in the preceding phase(s).

- Determine the problem – the “what, when and why”
- Identify the transportation problems and assess existing and future conditions.
- Complete a site visit
- Define the scope of work
- Identify the study area for the project
- Identify stakeholders
- Complete and submit Project Initiation Package (PIP)
- Complete base mapping
- Define roles and responsibilities for the project team members
- Complete Project Management Plan (as appropriate) for project
- Establish milestones and critical path factors for the project
- Identify key stakeholders in the study area
- Conduct Participating Agency Coordination (as appropriate for project)
- Develop the appropriate Public Involvement Plan for the project
- Conduct Public Involvement activities, as appropriate for the project
- Conduct planning-level technical studies
- Develop draft Purpose and Need Statement
- Identify Primary and Secondary Needs
- Update project cost estimate and milestone dates
- Scope for the Preliminary Engineering Phase (schedule, deliverables and budget)

# Preliminary Engineering Phase

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Preliminary Engineering (PE) is the second phase of the PDP. The purpose of PE is to begin the process of collecting more detailed information in order to develop and compare alternatives by conducting field investigations, performing technical studies, and developing preliminary engineering level of plans. This work builds upon and refines the information and analyses produced during the Planning Phase and many tasks can be performed concurrently, as appropriate. A primary product of this phase is the recommendation of the preferred alternative for a project.

## Develop Preliminary Alternatives

### 1. Feasibility Study and Alternative Evaluation Report

The Feasibility Study (FS) and Alternative Evaluation Report (AER) are combined engineering and environmental studies. They are intended for concurrent processing of preliminary engineering and environmental work to identify a preferred alternative. Under the Federal Highway Administration's (FHWA) flexibility regarding the level of engineering that may be done early in project development, ODOT is now able to take advantage of using up to Stage 2 design to aid in the determination of a preferred alternative, in conjunction with NEPA analysis.

A formalized, report style FS is not typically completed for Path 1 or Path 2 projects. For Path 2 projects where the level of environmental documentation does not require an alternatives analysis (C1 or C2), a Safety Study, Structure Type Study, or other specific evaluations will serve as the alternatives analysis and a stand-alone FS is not required. If these types of studies are not required, the FS may be limited to a memo to file that summarizes the need for the project, project constraints, the alternatives considered, the considerations utilized in the decision-making process and the selected alternative.

Path 3 projects typically require a higher level environmental documentation, D1 or higher, which requires an alternatives analysis. For these projects a Feasibility Study is required. In these cases, the Safety Study, Structure Type Study, etc., may provide the basis for the FS. Then these studies are then included by reference and the FS further evaluates the alternatives beyond just a consideration of structure type or a reduction in crashes but includes a consideration of environmental impacts, right-of-way, costs, etc. to determine the Preferred Alternative. This analysis provides that basis of the alternatives analyses required for NEPA.

Typically for Path 3 projects the product of the Feasibility Study is the preferred alternative. Regardless of the project path, developing the Feasibility Study is not intended to be a lengthy process or result in a large document.

# Preliminary Engineering Phase

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For a very few Path 3 and all Path 4 and Path 5 projects, the outcome of the Feasibility Study will be a limited number of feasible alternatives to be further studied in an Alternative Evaluation Report. An AER will never be performed if a FS has not first been completed. Only those components which affect the selection of the Preferred Alternative or the list of feasible alternatives for consideration in an AER will need to be included in the Feasibility Study.

An AER will never be completed for Path 1 and 2 projects. The intent of the PDP is that the AER is primarily used on Path 4 and 5 projects, and a few Path 3 projects which exhibit a higher level of complexity or controversy.

Project related tasks that are important in the development of alternatives include, but are not limited to:

- Field Survey and Aerial Mapping
- Planning Level Traffic or Certified Traffic - Refer to the [ODOT Location and Design Manual, Volume 1, Section 102](#) for design traffic criteria.
- Capacity Analysis of the proposed alternative(s) using ODOT accepted methodologies
- Highway Safety Manual crash analysis of feasible alternatives
- Typical Sections
- Preliminary Alignment and Profile
- Cross-Sections
- Geotechnical Assessments
- Mapping
- Utility Impacts
- Environmental Analysis
- Public Involvement and Stakeholder Coordination

There are times when alternatives cannot be fully vetted using the recommended tasks as identified in the Master Task List ([SAFe System](#)) for a Feasibility Study, Task 2.1.A. In these cases it is appropriate and recommended to pull forward those elements identified within Task 2.3 (AER Design) to facilitate identifying the Preferred Alternative during the development of the Feasibility Study. Furthermore, incorporating a task that is identified as a task within the AER Design subset does not mean that an AER has to be developed.

This is the flexibility that is intended by the PDP. The Task List is not meant to be interpreted as fully linear. All projects are unique and can range in complexity, therefore it may be prudent to advance or delay tasks in an effort to document the decision-making

# Preliminary Engineering Phase

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process while balancing the level of effort and detail needed to make decisions during project development. Project Managers have the authority to adjust FS tasks in order to align the project needs and deliverables within the project scope. This flexibility with the FS is dependent on the PDP Path designated by the Project Manager.

The initial set of alternatives will need to be broad enough to allow for an appropriate range of reasonable solutions, while at the same time taking into account the project's relative size, scope and previously established Primary and Secondary needs. The alternatives identified and examined at this level should be considered feasible solutions to the transportation problem. The alternatives analysis should consider items such as traffic operations, environmental impacts, maintenance of traffic, pavement type and thickness, geometric improvements, alternate structure types, or possible structure rehabilitation, all depending upon the type of project and path. The no-build alternative will be considered for all projects, as it serves as a baseline condition against which alternative strategies will be measured. In all cases, the alternatives will address the Primary Need identified in the Purpose and Need Statement. Whether or not to address Secondary Needs is based upon what impacts and costs are required. The importance of coordinating these decisions with relevant subject matter experts cannot be stressed enough.

A recommended table of contents, reviews and approval process and additional guidance for the FS and AER can be found in the [Feasibility Studies and Alternative Evaluation Reports Guidance](#) developed by the Office of Environmental Services.

## 1.1. Traffic Data

As discussed during the Planning Phase, the development of traffic data can play a key role in needs analysis. Additionally, the development of traffic data also plays a very important role when comparing alternatives. The level of detail required to compare alternatives affects whether Planning Level or Certified Traffic will be used when comparing alternatives. Typically, Certified Traffic will be used for projects only requiring a FS. Planning Level Traffic can be requested and utilized for comparison among the alternatives being considered in the Feasibility Study for Path 4 and 5 projects. As alternatives become more clearly defined, the Alternative Evaluation Report will need to use Certified Traffic for final decision-making on the Preferred Alternative. These details will need to be discussed at the Preliminary Coordination Meeting as some decision making will require a higher level of detail.

# Preliminary Engineering Phase

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## 1.2. Safety Analysis

Safety considerations during planning are required for most projects as identified in the [ODOT Location and Design Manual, Volume 1, Section 106.2](#). For those projects that identify safety as a need in the project's Purpose and Need Statement an analysis of alternatives using the AASHTO Highway Safety Manual (HSM) will be required to show a comparison of reduction in total crashes or crash severity between alternatives. Additionally, any project where multiple alternatives are being considered but where safety has not been identified as a Need Element, a Highway Safety Analysis will also be required to confirm safety implications regarding alternatives comparison and evaluation. These required analyses will occur during development of the Feasibility Study (FS). Due to the complexities of the required HSM analysis, the District Safety Review Team will be a required reviewer of the FS. Refer to the Safety Analysis Guidelines maintained by the Office of Program Management for procedures to complete alternative analyses and quantitatively evaluate safety performance of the alternatives.

ODOT will only accept quantitative analyses of safety considerations when comparing alternatives. Qualitative statements regarding one alternative being "more safe" than another will not be accepted.

## 2. Perform Environmental Field Studies

Based on the potential for environmental impacts, as documented in the secondary source review and as documented in the Project Initiation Project (PIP) in the Planning Phase, a determination is made on the required level of environmental field studies and agency coordination for each environmental resource.

During development of feasible alternative, field studies are used to quantify, and qualify, the characteristics of the natural and man-made environment. Initial environmental field studies are conducted on the alternatives and documented in the Feasibility Study (FS). Reports generated from these field studies help to determine whether further investigation and agency consultation is warranted. If the District Environmental Coordinator or the Office of Environmental Services (OES) staff concludes that additional environmental field studies are necessary to refine impacts, the work is conducted only within the preferred alternative during the next phase of the PDP, Environmental Engineering. Detailed cultural resource studies are typically only conducted on the preferred alternative. The District must submit a [Section 106 Request for Review](#) to OES prior to having any Phase I field work scoped and initiated.

If warranted, the following studies are conducted during the FS:

# Preliminary Engineering Phase

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- Ecological (**Ecological Survey Report** detailing water resources, plant and animal species, terrestrial habitat, farmland within the study area)
- Phase I History/Architecture survey (following a Section 106 Request for Review)
- **Regulated Materials Review** (hazardous waste, landfills, and other regulated materials)
- Social and Economic Resources (environmental justice, Title 6, community issues)
- Section 4(f) determination (parks, recreation areas, wildlife/waterfowl refuges and historic sites impacts)
- Preliminary analysis of Section 6(f) resources (i.e., identification of presence/absence).
- Preliminary noise analysis

The amount of data collected and coordination will vary based on the impacts associated with the project. For example, some projects may be cleared through one of OES' streamlined agreements, while other projects may require more detailed documentation and additional coordination efforts. OES has established mechanisms for streamlining the environmental process for some resources. These processes exist in the form of Memoranda of Agreement (MOAs), Letters of Agreement (LOAs), and Programmatic Agreements (PAs). The streamlined processes should be evaluated for applicability to the project during this phase. The District Environmental Coordinator (DEC) or OES will make this determination so coordination with the DEC or OES is imperative.

Prior to conducting the field studies, the Project Manager ensures that letters are mailed to property owners and tenants notifying them of ODOT's intent to access their property, per ODOT's Public Involvement Manual.

Individual environmental field survey reports present the results of technical field studies conducted within the feasible alternatives. These results are added to project mapping that began development in the Planning Phase. In addition to the results of the field surveys, the updated project mapping includes all available information regarding the approximate locations of homes and businesses, as well as any other pertinent data from the field. The project management team will need to be aware that there is sensitive data that can be on mapping used by the project team, but will not be included on mapping exhibited or distributed at public meetings. Specifically, the location of archaeological sites and threatened and endangered species cannot be publicly disclosed.

# Preliminary Engineering Phase

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Field checks verify the accuracy of the information prior to submissions of the mapping to the ODOT District and ODOT-OES.

Once the District and OES approve the results of the feasible alternative field studies, the Project Manager coordinates scheduling of public involvement activities, as necessary.

Refer to [ODOT-OES' website](#) for more information regarding environmental studies.

## **3. Preliminary Engineering for FS and AER**

The primary purpose of preliminary engineering is to establish and develop the design parameters to a level of detail comprehensive enough to generate an accurate scope, schedule, and budget for the remainder of the design. On projects with multiple alternatives, preliminary engineering will need to provide a level of design that allows for a better-informed selection of the preferred alternative.

Preliminary engineering aids in the prevention of late-stage design changes. Preliminary design provides a level of plan development that allows for a comprehensive analysis of all design issues and a thorough review, and comparison, by the appropriate stakeholders.

The preliminary engineering will need to provide enough detail so that the intent, design parameters, costs, and impacts of the project are clearly discernable. The detail should be such that a final design Scope of Services can be established. The Scope of Services aids in refining the project schedule and gives the design team a solid base upon which to complete the plans.

As part of the preliminary engineering activities, utility companies are contacted and asked to locate their underground facilities within the project area. Utilities which conflict with the proposed project work are identified for relocation. The District Utility Coordinator is contacted to determine estimated utility reimbursement cost. Early coordination with the ODOT District Railroad Coordinator is important to ensure that railroad companies are involved early in the process.

In addition to the FS and AER, all actions directly related to the project must be included in the environmental document. For example, the new location of a natural gas line that is moved “off-project” must be considered when evaluating the impacts of an alternative for the environmental document.

# Preliminary Engineering Phase

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The Project Manager will determine if a Constructability Review will be conducted concurrent with the FS and AER reviews. The intent of a Constructability Review is to check the potential construction strategies, techniques, and logistical issues. The review also checks construction durations, and alternative designs. It identifies labor and material availability, access for large equipment, project phasing, and the conceptual maintenance of traffic. Refer to [Section 1404.6 of the ODOT Location and Design Manual, Volume 3](#) for more information.

Preliminary Engineering should be conducted on all applicable projects to a level of detail that provides:

- Accurate costs for all feasible alternatives
- An accurate Scope of Services for final plan development
- A comprehensive analysis of design issues
- Preliminary Construction Limits
- Geotechnical data
- Hydraulic detail

Upon completion of the FS or AER, a preferred alternative is chosen. Stage 1 Detailed Design (DD) Staged Design can begin or be refined if already initiated at some level during the FS or AER. Refer to the [ODOT Location and Design Manual, Volume 3, Section 1403.5](#) for typical details included in Stage 1 DD and the review process.

## **4. Stakeholder Consultation and Public Involvement for Alternatives**

An important activity during Preliminary Engineering as a project advances through the development process is coordination with stakeholders and the public of the alternatives under consideration. As stated in the Introduction to this manual, a stakeholders list for a project typically includes Federal, State, and local agencies, community organizations, special interest groups, and the general public.

It is the Project Manager's responsibility to determine the appropriate stakeholders to be involved in project development, as appropriate for the project. The Project Manager also should consider what form of public involvement is necessary and appropriate for a project. If a project requires a public meeting, the Project Manager should work with the District Public Information Officer and District Environmental Coordinator to advertise the date, time, and location of the public meeting.

# Preliminary Engineering Phase

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Stakeholder and public involvement are intended to occur during the development of the FS and AER. The stakeholders and public will be asked to weigh in on the alternatives being considered. The stakeholder and public involvement process and how it affected the selection of the preferred alternative will be documented in the final FS and AER. For large projects (Path 4 and 5) it is recommended to have a draft copy of the FS or AER at the public involvement meetings.

For projects requiring an Environmental Assessment or Environmental Impact Statement, the Office of Environmental Services will coordinate the FS and AER with resource agencies. For more information on resource agency coordination and public involvement and their role in the FS and AER consult ODOT's [Feasibility Studies and Alternative Evaluation Reports Guidance](#).

## 5. Feasibility Study and Alternative Evaluation Report Submittals

All FS and AER submissions are provided first to the District project manager. It is the project manager's responsibility to disseminate the reports for review to the appropriate offices. Refer to ODOT's [Feasibility Studies and Alternative Evaluation Reports Guidance](#) for the review and approval process.

## 6. Begin Staged Detailed Design

Once a preferred alternative is chosen, Stage 1 Detailed Design (DD) is refined and completed based upon the preliminary engineering done for the FS or AER. Refer to the [ODOT Location and Design Manual, Volume 3, Section 1403.5](#) for typical details included in Stage 1 DD and the review process. After approval of the Stage 1 DD, the project can move into the next phase, Environmental Engineering (EE). During EE, Stage 2 DD can begin concurrently with refined NEPA studies and permits, as appropriate for the project and prior to approval of the environmental document. Understand that moving forward in this manner, while allowed, is done at some assumption of risk that the Project Manager will have to consider. Additionally, consult the [ODOT Location and Design Manual, Volume 3, Section 1401.6](#) for details on combining the staged review submissions to expedite project development.

Regardless of project path, as staged design begins, the project is moving into next phase of the PDP: Environmental Engineering. Note that Stage 1 and Stage 2 Detailed Design will commence concurrently with the refined NEPA studies as defined by the Environmental Engineering Phase and prior to the environmental document being approved. Moving

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forward in this manner is done at some assumption of risk that the Project Manager will have to consider. Note that if an Access Point Request Document is required, then the Interchange Justification/Modification/Operations Study (IJS/IMS/IOS) will need to be approved prior to or concurrently with initiating Staged Design as the IMS identifies the final lane configuration of the interchange area. Refer to [Section 550 of the ODOT Location and Design Manual, Volume 1](#).

Staged Design refines and builds upon the preliminary engineering design completed for the FS or AER. It provides a level of detail necessary to begin Preliminary Right-of-Way Plans, allows for an accurate estimation of required right-of-way acquisition, and allows for a refined estimate of construction costs.

Project managers have the discretion to determine which tasks are needed based on the project scope and when a combined Stage 1/Stage 2 submittal will be preferred. See [ODOT's Location and Design Manual, Volume 3, Section 1400](#) for more information regarding the Staged Review process and elements included in each submission.

## 7. Project Management for Preliminary Engineering Phase

This particular phase of a project entails a tremendous amount of work and effort from a variety of professionals. The Project Manager will need to ensure that regular communication among the project team members occurs. Project Managers should be prepared to make adjustments, as necessary, due to changes in having more project detail available.

Flexibility is important in providing the continuity needed for managing transportation projects over a long period of time. In addition to meetings and schedules, Project Managers may consider other tools such as well-defined quality control processes, change management processes, contingency plans and communication plans for measuring project success and managing risk.

### 7.1. Meetings

The Project Manager is responsible for holding regularly scheduled meetings. The project team and relevant decision-makers should be invited to meetings to ensure that the project is advancing according to the established scope, schedule and budget. Additionally, it is a time for the project team to evaluate the team's organization, resources and responsibilities. Each meeting should be well organized and documented for the project

# Preliminary Engineering Phase

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file. The project team should depart from meetings understanding the objectives, goals and tasks scheduled for completion.

## 8. Cost Estimates and Ellis Milestone Dates

The Project Manager should update the schedule in Ellis to reflect any changes as a result of the alternatives discussion, written design scope, determination of environmental documentation, or other project information. The following costs should be updated:

- Roadway/Interchange costs
- Right-of-Way costs
- Utility cost estimates

## 9. Transitioning to Environmental Engineering

Prior to completing the Preliminary Engineering Phase and moving the project forward to the Environmental Engineering Phase, there are several tasks that the Project Manager will ensure are completed during the Preliminary Engineering Phase. These are key elements resulting from decisions made during the Preliminary Engineering Phase that should be completed before the Project Manager can move the project into the Environmental Engineering Phase.

- Further define goals, roles, and responsibilities for all project team members.
- Understand what commitments are being made for the next PDP phase(s).
- Know milestones and critical path factors for project.
- Conduct technical studies as appropriate for Preliminary Engineering Phase
- Perform environmental field studies and refine impacts.
- Recommend Preferred Alternative via the final FS or, if necessary, AER
- Initiate interchange studies (IJS/IMS/IOS) as necessary for the PA
- Conduct first Value Engineering Study for Preliminary Engineering.
- Conduct first constructability review (if needed).
- Address agency, stakeholder, and public comments.
- Finalize Stage 1 Design for preferred alternative.
- Update project cost estimates (construction, utility reimbursement, environmental studies, and right-of-way acquisition).
- Update milestone dates as appropriate in Ellis.
- Scope for the Environmental Engineering Phase should be in place with contract(s), schedule with deliverables, and budget

## **Preliminary Engineering Phase**

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These critical elements of the overall project plan of action form the basis for the work to be undertaken during the Environmental Engineering Phase. During the Environmental Engineering Phase, the project team will begin the process of gathering more and detailed information regarding the Preferred Alternative by conducting technical studies, developing more detailed engineering, and refining the plan to involve and inform stakeholders and the public.

# Environmental Engineering Phase

Environmental Engineering is the third phase of the PDP. The purpose of Environmental Engineering is to perform detailed environmental analysis of the preferred alternative concurrently with detailed engineering. This work builds upon and refines the information and analyses produced during the Preliminary Engineering Phase.

## 1. Initiate NEPA activities on the Preferred Alternative

Environmental Engineering is the phase of the project which takes a detailed look at the preferred alternative and its associated impacts within the context of the design work that has been completed. The intent of the process is to have refined environmental studies and design work initiated concurrently on the preferred alternative, along with solid decision-making. This chapter will outline several key tasks that are critical to developing a project through this phase.

Environmental field studies are typically conducted within the construction limits of the preferred alternative order to refine the level of impacts associated with the alignment. Based on the understanding of potential environmental impacts, as documented in the Project Initiation Package (PIP), Feasibility Study (FS), Alternative Evaluation Report (AER) and supporting environmental studies, a determination is made by the project team regarding the necessary level of environmental field studies and regulatory agency coordination that are needed. Below is a list of environmental studies conducted during this phase of the PDP. Please refer to the [ODOT-Office of Environmental Services \(OES\) website](#) for more detailed information regarding these studies.

### Environmental Study Areas

- Phase I & II Archaeological Survey
- Phase II History/Architecture Survey
- Section 4(f) Evaluation
- Section 6(f) Evaluation
- Phase I & II Environmental Site Assessments
- Farmland Studies
- Field reviews and research of social and economic resources
- Relocation Assistance Program Survey
- Environmental Justice
- Biological Assessment
- Noise Analysis
- Floodplain Coordination
- Waterway Permit Process & Permits Authorization
- Air Quality Analyses

# Environmental Engineering Phase

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Field studies are used to quantify and qualify the characteristics of the natural and built environment. Reports generated from these field studies help determine whether further investigation is warranted.

Prior to conducting the field studies, the Project Manager ensures that letters are mailed to property owners and tenants notifying them of ODOT's intent to access their property.

Individual field survey reports present the results of the technical field studies for the preferred alternative.

Once the District and OES approve the results of the studies, the Project Manager directs the scheduling of the public involvement activities, as appropriate for the project. Path 1, Path 2, and Path 3 projects typically do not require extensive public involvement activities, but Project Managers should be sensitive to stakeholder interests and concerns, and respond to any stated concerns. Larger Path 4 and Path 5 projects will likely require extensive public involvement activities and these should be closely coordinated with the project sponsor and project team.

## 2. Interchange Studies

As mentioned in the Preliminary Engineering chapter of this manual, moving forward with Staged Design prior to final approval of the Access Point Request Document (IJS/IMS/IOS) is done at some risk. The final configuration of the interchange area is required as identified in the interchange study including interchange type, required turn lane lengths, ramp metering requirements, etc. The Project Manager should be aware of the time necessary to receive final approval of the Access Point Request Document and allow for this time in the project schedule. Certain studies can be approved by the Office of Roadway Engineering while others are required to be approved by the Federal Highway Administration (FHWA), either at the Ohio Division or FHWA Headquarters. Refer to [Section 550 of the ODOT Location and Design Manual, Volume 1](#) for information regarding study requirements and approval authority for each study type (IJS/IMS/IOS).

## 3. Stage 1 Value Engineering

Value Engineering (VE) is a systematic analysis by a multi-disciplinary 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 utility at the lowest overall cost. It is typically performed during the preliminary engineering and early detailed design phases of transportation improvement projects. The goal is to have a VE session early enough in the project development process where enough

# Environmental Engineering Phase

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analyses have taken place to make good value decisions, but not too far along in the process where major modifications to design contracts would be required.

The criteria used to determine if a project qualifies for Value Engineering can be found in ODOT's *Policy No. 21-006(P) Design Value Engineering Policy*. Projects that qualify for Value Engineering, typically require only one Value Engineering Study to be performed, which is usually during preliminary engineering development. More complex Path 4 projects and Path 5 projects will likely require two Value Engineering Studies, as they are typically complex design projects with extensive impacts. Refer to *ODOT's Location & Design Manual, Volume 3, Section 1404.5* for further details on ODOT's Value Engineering process.

## 4. Stage 1 and 2 Detailed Design

As stated in the PE Phase chapter of this manual, once a preferred alternative is chosen, Staged Design can begin concurrently with refined NEPA studies and permits as appropriate for the project. For projects not using a combined Stage 1 and 2 review submission, Stage 1 is approved early in the EE phase. Stage 2 design can commence prior to the environmental document being approved. As stated previously, remember that moving forward in this manner is done at some assumption of risk that the Project Manager will have to consider.

The primary purpose of Stage 2 Detailed Design is to detail and draft the ideas and concepts set forth in the Preliminary Engineering and the Stage 1 Design. Stage 2 detailed design incorporates Stage 1 review comments and further details the Stage 1 design. A primary objective of the PDP is to provide a sufficient level of preliminary design, inclusive of multiple disciplines, in order to anticipate and mitigate all planning, environmental, design, and construction issues in the early stages of project development prior to Stage 2 design. However, it is not always possible to completely anticipate all issues for any given project, and this phase of the PDP might uncover additional concerns. All members of the project team should recognize this fact and be prepared to provide additional data as necessary in order to resolve any latent issues. The Project Manager should consider holding additional meetings, as necessary, to coordinate efforts to resolve concerns that might occur.

Stage 2 design is typically where the majority of the design detailing and plan preparation takes place. In general, Stage 2 plans should be developed to the point where plan preparation, design, and detailing are substantially complete. Some exceptions apply, notably the omission of final pay quantities for roadway, and bridge, and final reinforcing steel details for structures.

# Environmental Engineering Phase

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During detail design development, the designer will need to determine if a temporary or permanent access fills are needed to facilitate construction. The designer shall determine the worst-case scenario impacts, which includes quantities, flow calculations, and a basic footprint of the fill in order to initiate the waterway permitting process. Construction work cannot commence until all waterway permits have been obtained from regulatory review agencies so the importance of starting the permitting process early cannot be stressed enough. Refer to Section 7.1 for additional information.

## Typical Stage 2 Design Elements

In addition to a refinement of those elements included in the Stage 1 design, consider the following:

- Removal items shown on plans
- Quantity balloons (no quantities)
- Pavement details/elevation tables
- Underdrain details
- Signal design/layout
- Lighting design/layout
- Signing and pavement marking
- Maintenance of traffic details
- Complete structure design including substructure and superstructure
- Retaining wall plans
- Noise wall details
- Temporary access fill in waterways

Also during Stage 2 Detailed Design, the Project Manager should critically review the project's schedule and budget and make appropriate changes if necessary. For example, it is important to time the sale of land and removal of trees, in coordination with environmental concerns to minimize project costs and maximize project schedule.

Although it is not the intent of this document to detail all elements in a Stage 2 Detailed Design submittal, the text box above provides general guidelines establishing a reasonable level of detail for a typical submittal. For a more detailed explanation of the requirements for a Stage 2 Detailed Design submittal, refer to ODOT's [Location and Design Manual, Volume 3, Section 1403.9](#).

A second constructability review may be conducted concurrent with the Stage 2 review. This review is intended to cover the following areas: right-of-way, environmental, geotechnical, utilities, site plan and profile, drainage, structures, maintenance of traffic,

# Environmental Engineering Phase

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construction completion date, construction project phasing and access, assessment of the build-ability of the design details (with particular emphasis on the construction methods), and overall bid-ability of the project. The second Constructability Review must be completed prior to the submission of the Final Right-of-Way plans.

## 5. Right-of-Way Plans

Preliminary Right-of-Way Plans are required for all plans that involve acquisition of temporary or permanent right-of-way. They are developed concurrently with Stage 2 Plans and should incorporate all Stage 2 review comments related to right-of-way issues. Preliminary Right-of-Way Plans are prepared in accordance with the Office of Real Estate's [Right-of-Way Plan Manual, Section 3100](#). Also refer to ODOT's [Location and Design Manual, Volume 3, Section 1403.8](#).

### Preliminary Right-of-Way Plans

- Title sheet (generally from construction plans)
- Centerline plat
- Property map
- Summary of additional right-of-way
- Detail Right-of-Way Plan sheets
- Special Plats
- Legal Descriptions
- Closure Calculations
- RW Acquisition Estimate

In general, Preliminary Right-of-Way Plans provide an overall picture of the affected property that will be obtained, either temporarily or permanently, to construct the project. The primary purpose of the Preliminary Right-of-Way Plans is to allow for an accurate location and appraisal of properties affected by a project. Acquisition of property can be a long process that in many cases dictates the overall schedule of a project prior to construction. To facilitate this process, the right-of-way staff should develop Preliminary Right-of-Way Plans concurrently with the roadway design plans.

Final Right-of-Way Plans incorporate Preliminary Right-of-Way Plan comments, any Stage 2 Detailed Design comments that affect the right-of-way, right-of-way tracings, legal descriptions, and calculations. Final Right-of-Way Plans can be developed concurrently with the Stage 2 Detailed Design. 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.

# Environmental Engineering Phase

## Final Right-of-Way Plans

- Complete and submit Final Right-of-Way Plans and tracings
- Begin right-of-way acquisition
- Begin environmental mitigation
- Begin utility relocation
- Update project right-of-way acquisition cost estimate
- Achieve milestone for right-of-way / utility coordination

Right-of-way plans must be accurate as source documents in all cases. They are used to perform title searches and confirm ownership of the properties required. ODOT uses these Final Right-of-Way Plans, and 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.

In some instances (hardship cases), advanced right-of-way acquisition and whole-take acquisition can begin prior to Final Right-of-Way Plan approval; however, this is generally not the case.

## 6. Prepare NEPA Documentation

The Project Manager ensures that the environmental documentation is prepared as a project develops. Numerous studies and investigations are prepared to determine social, economic and environmental impacts, and should be used to document project issues in accordance with the National Environmental Policy Act (NEPA). The environmental document, whether Categorical Exclusion (CE), Environmental Assessment (EA) or Environmental Impact Statement (EIS), requires specific criteria and approval processes through ODOT's and FHWA's processes.

## 7. Environmental Commitments

Environmental commitments (EC) are the link between the environmental phase of the project and the PDP Final Engineering/Right-of-Way and Construction Phases to ensure follow-through of commitments made with stakeholders. They are contained in the environmental document and identify responsible parties and required actions. ECs are developed to mitigate (restore, enhance, avoid, minimize, or compensate) impacts to protected resources. ECs that will be implemented during construction are included in the plans via the design or plan notes, or are incorporated into Special Provisions. Some ECs may remain active beyond final construction as continued mitigation and follow up. Effective communication and documentation are required to ensure that ECs are

# Environmental Engineering Phase

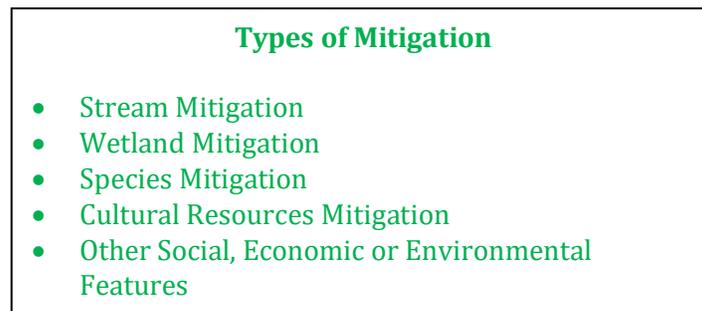
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appropriately carried out. Responsible parties should understand and know their roles for implementing the ECs, and they should document, or provide documentation to District Environmental Staff, that the ECs were successfully implemented.

Non-compliance with ECs can have negative consequences such as fines, project delays, loss of Federal funds or approvals, degraded agency and public relations, criminal charges, and environmental degradation. Refer to the Office of Environmental Services' [Environmental Commitments website](#) for information on writing EC's, an overview for designers, monitoring reports, and more.

## 8. Final Environmental Mitigation Plans Coordination

The Project Manager addresses comments from ODOT's Office of Environmental Services (OES) on draft mitigation plans. Draft mitigation plans are required when projects incur unavoidable impacts that must be compensated, such as wetlands or historic properties. After the Project Manager has addressed all comments on the draft plan, OES will submit these plans to the appropriate agencies and others for review and comment.



### 8.1 Waterway Permits

Projects requiring a 404 or Section 10 Pre-Construction Notification (PCN), 404/401 Individual Permits, Section 9 bridge permit, Section 408 permission or an Isolated Wetland Permit require the completion of the appropriate permit applications for submission to the regulatory agencies. The draft permit applications are submitted to the OES [Waterway Permit Unit \(WPU\)](#) for review. A mitigation plan, if necessary, is developed as part of the waterway permit applications. If the draft permit applications are returned to the district or consultants for revisions, the final permit applications are resubmitted to OES for Director's signature and coordination with the agencies. Final copies of the permit applications should not be submitted to OES-WPU until the permit reviewer has given final approval of the applications.

# Environmental Engineering Phase

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A compensatory mitigation plan, as required by the United States Army Corps of Engineers (USACE) and/or Ohio Environmental Protection Agency (OEPA), for unavoidable impacts to aquatic resources is sometimes a component of a permit application. However, most PCNs do not require mitigation plans, as impacts will not likely result in an adverse effect to the environment. Mitigation is always a component of an application if an individual permit or isolated wetland permit is required. The WPU is responsible for evaluating possible mitigation opportunities and ensuring that an acceptable mitigation plan accompanies the waterway permit applications. The WPU works with the ODOT Districts and other ODOT offices, as appropriate, to determine the appropriate mitigation plan, which is primarily based upon the quality and quantity of impacts, cost, and project schedule.

An Individual 401 Water Quality Certification typically takes six to eight months to obtain after submission of application to Ohio EPA and acquiring individual 404 permits from the U.S. Army Corps of Engineers can take between eight and 12 months. The Project Manager should build sufficient time into the project schedule to allow for permit authorization. Final waterway permits must be obtained and special provisions provided to the District prior to work within waters of the United States or State. Refer to the [OES Waterway Permit Manual](#) for a description of the waterway permit processes.

## 8.2 Cultural Resources

If it is determined that a project will have an adverse effect upon cultural resource properties that are listed in or eligible for listing in the National Register of Historic Places, ODOT and the State Historic Preservation Office (SHPO) will begin the process of evaluating measures to mitigate the adverse effect. Mitigation measures developed through the Section 106 consultation process provide ways to resolve adverse effects to historic properties impacted by projects. These mitigation measures are carried through as commitments in environmental documents which must be completed and accounted for with SHPO and FHWA.

A plan for mitigating an adverse effect is site/property specific and requires a separate research design or approach for each historic property impacted by the project. Approaches vary widely depending on the type of historic property, the qualities that enable the property to meet the National Register Criteria, the location of the historic property with respect to the project, etc. For a more detailed discussion of cultural resource investigation and mitigation requirements, refer to ODOT's [Cultural Resources Manual](#).

# Environmental Engineering Phase

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Please refer to [ODOT-OES' website](#) for more information regarding other social, economic, or environmental features that could require mitigation actions on a project.

## 9. Update Cost Estimates and Milestone Dates

The Project Manager should update the schedule in Ellis to reflect any changes as a result of the Stage 2 engineering, environmental field studies, or other project information. The construction, right-of-way acquisition, and utility reimbursement cost estimates should also be updated.

## 10. Project Management for Environmental Engineering

By this time, a significant portion of the project has been developed. The Project Manager should continue to conduct regular team meetings and ensure that Ellis milestones are updated.

## 11. Transitioning to Final Engineering/Right-of-Way

Prior to completing the Environmental Engineering Phase and moving the project forward to the Final Engineering/Right-of-Way (FE/RW) Phase, there are several tasks that the Project Manager must ensure are completed during the Environmental Engineering Phase. These are key elements resulting from actions made during the Environmental Engineering Phase that must be completed before the Project Manager can move the project into the FE/RW Phase.

These critical elements of the overall project plan of action form the basis for the work to be undertaken during the FE/RW Phase. During the Environmental Engineering Phase, the project team will finalize the NEPA document and Stage 2 design, conduct a Value Engineering Study, and perform other technical and engineering tasks.

- Further define goals, roles, and responsibilities for all project team members
- Understand what commitments are being made for the next PDP phase(s)
- Know milestones and critical path factors for project
- Conduct technical studies as appropriate for Environmental Engineering Phase
- Complete environmental field studies and refine impact analyses
- Complete NEPA Document
- Complete waterway permit application(s)
- Complete conceptual mitigation plans, if necessary for waterway permits
- Conduct Value Engineering Study and report for Environmental Engineering

# Environmental Engineering Phase

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- Conduct constructability review (if needed)
- Address agency, stakeholder, and public comments
- Finalize right-of-way plans
- Ensure all environmental commitments requiring action by the Contractor are included as plan notes in the project plans
- Ensure all interchange studies (IJS/IMS/IOS) have been approved by the Office of Roadway Engineering and, where applicable, FHWA, and that plans reflect the appropriate configuration for the interchange area
- Finalize Stage 2 Design
- Begin right-of-way acquisition
- Begin environmental mitigation
- Begin utility relocation
- Update project cost estimates (construction, utility reimbursement, environmental studies, and right-of-way acquisition)
- Update Ellis milestones
- Scope for the FE/RW Phase should be in place with contract(s), schedule with deliverables, and budget

# Final Engineering/Right-of-Way Phase

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Final Engineering/Right-of-Way is the fourth phase of the PDP. The purpose of FE/RW is to perform the final (Stage 3) detailed engineering design of the preferred alternative. This work builds upon and refines the Stage 2 design work completed during the Environmental Engineering Phase.

## 1. Right-of-Way Acquisition

The purpose of right-of-way (RW) acquisition is to obtain sufficient control of the rights of way needed for the project allowing the construction phase to proceed unaffected by RW issues. Sufficient control consists of:

- Issuance of a Certification of RW Control Letter 1 or 2 by the clear date; and,
- All occupants have vacated lands and improvements and the district has physical possession and the right to remove, salvage, or demolish these improvements and may enter on all land; and,
- No RW issues should affect Federal authorization to advertise for construction bids.

The process of acquiring RW is flexible. Acquisition can occur early (before environmental review is completed), can occur piecemeal as part of a design-build project, or can occur traditionally after the environmental review is completed and the right of way plans are completed. The acquisition of RW is heavily regulated by numerous federal and state laws and codes. The ODOT Real Estate Manual implements these regulations into its acquisition process. In most instances, ODOT may exercise its power of eminent domain (also known as appropriation) when it acquires RW for its highway projects. RW acquisition/obtaining control of RW consists of: 1) Acquiring RW per the RW Plan; 2) Relocating people/businesses out of the project area; 3) Obtaining an executed railroad agreement when the project affects an active rail line; 4) Relocating utilities and having a completed utility note; and, 5) Clearing encroachments within the RW boundaries of the project.

The general process to acquire rights of way is:

- As right of way plans are being completed and with an understanding of the dates/timelines affecting RW control such as Clear Date, date RW is to be certified, Funding Complete Date, Date for Notification of Proposal of Bids and the Sale Date, the district real estate staff determines the size and complexity of the RW acquisition phase of the project. Staff determines if consultants are to be used and if so, that contracts are in place, funds are encumbered and notices to proceed can be issued; that funds are encumbered to pay property owners; and, that a proactive acquisition plan is developed. If Highway Trust Funds are to

# Final Engineering/Right-of-Way Phase

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reimburse acquisition costs, the district will need Federal authorization to proceed with acquisition. This authorization generally starts the active process of acquiring RW.

- Prepare a Title Report of the property to be acquired to determine ownership.
- Prepare an appraisal report (or if appropriate, a waiver valuation) to estimate compensation for the part taken, damages, if any, to the part not taken, and any temporary easements.
- Review the appraisal as required by code to determine if it can be recommended as the basis for the fair market value estimate (FMVE). The relocation comping process may occur at this point.
- An ODOT official establishes the FMVE. This is compensation that will be offered to the owner. The offer is made using the NIAGFO form to preserve ODOT's power of eminent domain.
- Once FMVE is established, negotiations may be initiated and an offer can be made to the owner. Residential owners and tenants, business owners and tenants, farms and not for profit organizations determined as displaced may be eligible for relocation benefits and may receive relocation offers at this point.
- Negotiations continue until an agreement on price and terms is reached with the owner. If time is running out with the clearance date for right of way control looming, the district may negotiate a right of entry and then continue with the acquisition process until an agreement is reached. If an agreement cannot be reached, the district may turn the parcel over to the Ohio Attorney General's Office to appropriate the property needed for the project.
- The relocation process must be ongoing and concurrent with the negotiation process. Relocation is time consuming and project managers should monitor the relocation process to assure displacees have moved from the project area by the clearance date. Relocation agents must work with displacees helping them find properties to move into, assisting with the move into their replacement properties and to make sure they have received all benefits due under regulation and procedure.

## Final Engineering/Right-of-Way Phase

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- When there is agreement to price and terms, a closing occurs and the owner conveys the real property needed for the project to ODOT by an instrument prepared by the Ohio Attorney General's Office. When agreement cannot be reached and parcels are appropriated, ODOT obtains possession of vacant land when FMVE is deposited with the court (known as quick take). ODOT may not obtain control of appropriated structures until the court issues an order of possession.
- The entire acquisition process must be well-documented as required by federal and state codes. Utilities may continue to be relocated. Often the coordination for these relocations may extend into the construction phase of the project. The following must be completed by the date RW is to be cleared:
  - All Railroad Construction Agreements are to be executed by ODOT and the railroad ownerships.
  - All encroachments within the construction limits of the project are to be removed or identified as a plan note.
  - All displacees identified as relocation eligible are to be moved from the project area.
  - All rights of way identified in the RW plans are to be controlled by purchase/acquisition with ODOT having the right of possession, by right of entry, or by appropriation with possession of any improvements needed by ODOT granted by the court.
  - Utility relocation has been completed or is in process and the Utility Note has been updated.

As of the clear date, ODOT should have adequate control of the rights of way identified in the RW plans and has the right to remove, salvage, or demolish any necessary improvements and may enter on all land.

Once RW is controlled, the District Real Estate Administrator may issue a Certification of RW Control Letter. This Letter, which includes the Utility Note, is part of the PS&E Package sent to the ODOT Office of Estimating. Estimating finalizes its review by the Funding Complete Date, and the Certification of RW Control Letter becomes part of the Plan Submittal Package sent to the Office of Accounting. This information is then input into FMIS where it is reviewed and approved by FHWA. This approval authorizes ODOT to prepare the "Notification for Proposal of Bids".

# Final Engineering/Right-of-Way Phase

## 2. Stage 3 Detailed Design Plans

Stage 3 Detailed Design should complete the design and detailing of the project. The NEPA document must be completed prior to commencing Stage 3 design. These plans must contain all details and quantities required to bid and construct the proposed project, including a final cost estimate. The text box below contains some of the elements included in Stage 3 design plans. Refer to ODOT's [Location and Design Manual, Volume 3, Section 1403.9](#) for further details.

- Design Elements to Be Considered for the Stage 3 Design Plans**
- Project Site Plan
  - All final quantities
  - Construction estimate
  - General notes
  - Pavement calculations
  - FAA clearance notification
  - Wiring diagrams
  - Pole orientation and signal timing charts
  - Reinforcing layout and computation
  - Environmental Commitment Plan Notes
  - Special Provision Package

After the plans are completed, a Stage 3 Detailed Design Review Submission is prepared. The submission must be reviewed and approved by the District. It is recommended that a second Stage 3 Detailed Design Review be conducted if more than two years have elapsed since the first Stage 3 Detailed Design Review, and the Final Tracing Package has not been submitted to Central Office.

The plans are reviewed to ensure they reflect current field conditions, design standards, policies, specifications, and to confirm their compliance with all environmental commitments and mitigation plans. This compliance is formalized on the Environmental Consultation Form. This form is signed by the District Environmental Coordinator and submitted with the Plan Package to ODOT's Office of Contracts.

The project-specific waterway permits are listed as Special Provisions on the plan title sheet. The permits are affixed to the plans as a Special Provisions package; this alerts the

# Final Engineering/Right-of-Way Phase

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bidding contractors and ODOT construction personnel to the existence of the permits and all permit provisions and conditions.

## 3. Procedure to Determine Contract Time

Contract time is the maximum time allowed in the contract for completion of all work contained in the plans. Contract time often arises as an issue when the traveling public is being inconvenienced and the contractor does not appear to be aggressively pursuing the work. There may be a number of reasons for a project to appear dormant, such as weather limitations, concrete curing times, materials arriving late, etc. However, all too often the causes are traceable to excessive time originally established by the contracting agency to complete the project or poor contractor scheduling of construction operations.

In many instances, the duration of highway construction projects is more critical today than it was in the past. Several of the reasons are listed below:

- There are an increasing number of resurfacing, restoration, and rehabilitation type projects being constructed under traffic, resulting in an increase in the exposure of construction workers and motorists.
- Traffic volumes on most highways are significantly greater and are continuing to increase, thereby creating a greater impact on the motoring public in both safety considerations and cost.
- Proper selection of contract time allows for optimization of construction engineering costs and other resources.

In addressing the need for completing critical construction projects where it is important to minimize traffic inconvenience and delay, the Ohio DOT has applied alternative contracting methods including time-based contractual provisions for early completion.

Written procedures for the determination of contract time is important so that production rates and other considerations are applied uniformly throughout the Department. Experience and judgment should be used in the final determination for which projects are critical. The fact that some types of work can or cannot be undertaken during certain times of the year should also be addressed.

The reasonableness of the contract time included in contracts is important. If time is insufficient, bid prices may be higher and there may be an unusual number of time overruns and contractor claims. Contractors should be provided the ability to schedule work to maximize equipment and labor, and if contract time is too short, these efficiencies are more difficult to obtain resulting in higher prices. If the time allowed is excessive, there

# Final Engineering/Right-of-Way Phase

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may be cost inefficiencies by both the state and the contractor. The public may be inconvenienced unnecessarily and subjected to traveling on a roadway where safety is less than desirable for an extended period of time. In establishing contract time, the Department should strive for the shortest practical traffic interruptions to the road user. If the time set is such that all work on a project may be stopped for an extended period (not including necessary winter shutdowns) and the contractor can still complete the project on schedule, it means the contract time allowed was excessive. The determination of the contract time explained below shall be completed prior to submitting the Plan Package Submission to the Office of Estimating.

## 3.1 Contract Time Determination Techniques

### Construction Duration Estimation Tool

This method uses an application to perform a statistical analysis on 3,804 past projects of similar type, costs, road type, traffic volume and location. The application will provide a mean contract time and an estimated contract interval.

The project manager should select the appropriate cost and project type and run the application. The project manager should look at a duration between the lower interval and the mean contract time. Some past projects had plan errors, poor site conditions and time extensions that stretched the project beyond its original duration. These project were not scrubbed from the statistical analysis. Durations between the mean and the upper interval reflect a worst case scenario.

The Construction Duration Estimation Tool can be found at <http://www.dot.state.oh.us/Divisions/ConstructionMgt/Admin/Pages/default.aspx>

### Construction Duration Determination Tool

This method uses production rates for controlling items of work to determine a contract duration.

The project manager should follow the instructions in the first tab of the spreadsheet. This method requires the user to input items of work and plan quantities into an Excel spreadsheet. The spreadsheet contains a library of production rates to determine the time necessary to construct the items of work. A graphical bar chart is created to assist the user in sequencing the work to calculate a total construction duration. The production rates can be adjusted for Location, Traffic, Complexity, Soil Conditions, and Quantity.

The Construction Duration Determination Tool can be found at <http://www.dot.state.oh.us/Divisions/ConstructionMgt/Admin/Pages/default.aspx>

# **Final Engineering/Right-of-Way Phase**

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## **Critical Path Method Progress Schedule**

This method should be used for more complex projects that cannot be calculated using the above two techniques.

This method requires the project manager or design consultant to use Primavera P6 or Microsoft Project Manager to develop and prepare a baseline construction schedule. The working day schedule should show the various activities of work in sufficient detail to demonstrate a reasonable workable plan to complete the project. Baseline construction schedules should include interim completion dates and the final completion date.

The project manager will use the above tools to determine a project timeline. Consideration should be made to the amount of time is necessary for the Department to execute the contract. It is strongly recommended that the project manager discusses the contract duration with experienced construction personnel who have “hands on” experience with a particular project. Discussions should include materials with long lead times, maintenance of traffic, seasonal limitations for certain work types, conflicting operations on adjacent projects, time to review shop drawings and submittals, utility coordination and other pertinent items.

## **4. Cost Estimates**

Districts, consultants, or municipalities prepare planning estimates to budget funds for a proposed project. As the project progresses through the Project Development Process from planning and programming to final design, a design estimate is prepared. This estimate verifies that the proposed design is within the original budgeted amount and if the design or budget needs to be revised. Planning and design estimates are tools Districts use to manage individual project construction budgets as well as their overall District construction budgets for each fiscal year. In addition, ODOT uses these estimates to manage District allocations and to create economic forecasts to plan the Department’s highway program.

The Project Manager should update construction, right-of-way acquisition, and utility reimbursement cost estimates in Ellis throughout the life of the project.

# Final Engineering/Right-of-Way Phase

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## 5. Plan Package

Once plans are ready to be advertised, Districts submit a plan package to the Office of Contracts. The information contained in the plan package is used by the Office of Contracts and the Office of Estimating.

A plan package must contain the following items:

- Plan Package Submittal Form (Prepared by the District)
- Estimated Quantities Form (Prepared by the consultant) – Refer to [Appendix D of the ODOT Location and Design Manual, Volume 3](#) OR
- ODOT District personnel shall use the [ODOT Plan Package Submittal SharePoint site](#)
- Design Estimate (Prepared by the District, municipality, or consultant)
- RW, Utility and Environmental Consultation Forms
- Proposal Note List (Prepared by the District)
- Construction Plans (Prepared by the District, municipality, or consultant)

The plan package may also contain other information relevant to the project, such as the Innovative Contracting Notification Form (ICNF), which is prepared by District and submitted as part of the plan package if innovative contracting is used on a project. For more details on the requirements of innovative contracting, see ODOT's [Innovative Contracting Manual](#). The decision to use innovative contracting on a project will be made well in advance of the submission of the plan package to Central Office. The innovative contracting procedures are governed by [Policy 27-013\(P\) - Innovative Contracting Policy](#).

After the project is awarded, the Innovative Contracting Notification and Tracking Form (ICNF) is included in the contract award notification to the Office of Construction Administration.

## 6. Final Legislation

For projects proposed for construction within the jurisdictions of local public agencies, whether or not the local agency is participating financially, preliminary consent must be obtained from the affected local public agencies early in the PDP. This consent should include broad language to the effect that the local agency granted ODOT permission to perform work at a specific location within its jurisdictional boundaries.

# Final Engineering/Right-of-Way Phase

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In cases where local agencies partner financially with ODOT, preliminary legislation should establish participation levels and provide details for the transfer of local funds toward the financing of the project. The final legislation contains details of the agreement by the local agency to specific funding levels, amounts, and method of funding transfers for the project. The Office of Estimating prepares the final legislation package. It then is sent to the District for coordination with the Local Public Agency (LPA) in order to obtain the required consent.

Once the appropriate consent is obtained, as well as required monies, the District then returns the final legislative package to the Office of Estimating for final processing. The Office of Estimating completes the final legislation package and includes it in the Plan, Specifications, and Estimates (PS&E) Package.

## 7. Federal Authorization

For federally funded projects, the Office of Estimating requests review and authorization of the PS&E Package from the Federal Highway Administration (FHWA) to advertise the contract for bids.

## 8. Advertisement

Once the final legislation is approved, the Office of Contracts assembles the final bid documents. Bid documents include a notice to bidders, project-appropriate proposal notes, quantity estimates, final plans and other documentation necessary for legal submission of project bids. The Office of Contracts then schedules a bid letting, a timeframe for distribution of addenda, and a bid date. All dates are set either by ODOT policy or by law. The Project Manager should submit all contract addenda to ODOT's Office of Estimating prior to the bid date to ensure proper distribution to all potential bidders. More specifics of the process are in the ODOT [Construction Administration Manual of Procedures](#).

## 9. Prebid Questions

Bidders are required to submit Prebid questions online. Since the bidding of a construction project is a time-sensitive process, rapid and coordinated responses are required from multiple offices within ODOT. Some examples are shown below:

- The Central Office Prebid Coordinator is responsible for managing the Department's Prebid Question and addenda process, and ensures a timely response to all prebid questions. In addition, the Prebid Coordinator monitors prebid questions and answers, ensures the publication of any addenda or notices

# Final Engineering/Right-of-Way Phase

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issued to Bidders, and posts all necessary information to the Prebid Question Tracking System (PQTS).

- The District Prebid Coordinator is responsible for ensuring all prebid questions are properly addressed for projects administered by the District. They also monitor the PQTS for prebid questions applicable to the District.
- The District Planning and Engineering Office is responsible for responding to all Prebid questions submitted for district projects.
- The Office of Contracts creates and maintains a Prebid Question Tracking System (PQTS) and publishes addenda and notices issued to bidders.
- The Office of Estimating analyzes addenda, coordinating the update of all specific item changes.

Coordination is also often necessary between estimators, designers, and the right-of-way acquisition team in responding to prebid questions.

An addendum is a contractual document issued by ODOT, modifying the bid documents of a project subsequent to authorization by the Office of Contracts and prior to the project's sale. It is issued when changes are required to correct plan errors or omissions, or to enact other changes necessitated by ODOT and is made available to all potential bidders. If necessary, the Central Office Prebid Coordinator notifies FHWA for concurrence and approval.

Prebid questions that only require the clarification of facts already in the bid documents do not require an Addendum. They may be answered in the form of a written response posted for public viewing and do not become a part of the contract. For additional information, refer to ODOT [Standard Procedure 510-020\(SP\)](#), *Prebid Question and Addenda Standard Procedure*.

## 10. Contract Award

The Ohio Department of Transportation is authorized to contract with the lowest competent and responsible bidder for work described by bid documents prepared for construction projects. A detailed review checks the bid for accuracy, responsiveness, and compliance with all conditions. All bid documents become part of the contract between ODOT and the successful bidder. After ODOT certifies a bid as proper, the successful bidder receives a contract award letter from ODOT. Notification of the contract award must also be made to utility service providers to coordinate pre-construction schedules and all field activities.

# Final Engineering/Right-of-Way Phase

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## 11. Project Management for Final Engineering and Right-of-Way Phase

The Project Manager is responsible for ensuring that the project has been fully developed and that the Plan Package is submitted on time and meets all construction schedule deadlines. The Project Manager should continue to meet with team members, as appropriate, to ensure that the project advances without complications.

## 12. Transitioning to Construction Phase

Prior to completing the Final Engineering/RW Phase and moving the project forward to the Construction Phase, there are several tasks that the Project Manager must ensure are completed during the Final Engineering/RW Phase. These are key elements resulting from actions made during the Final Engineering/RW Phase that must be completed before the Project Manager can move the project into the Construction Phase.

During the Final Engineering/RW Phase, the project team will finalize and submit the project plan package, complete all necessary legislation, finalize the PS&E package, and perform other technical and engineering tasks in order to award the contract to a successful bidder for construction.

- Approved Final Right-of-Way Plans and Tracings
- Right-of-way acquisition underway (acquisition must be completed before submission of the plan package)
- Utility relocation underway (disposition of utility conflicts must be resolved prior to submission of the plan package)
- Completed and submitted Plan Package
- Updated construction cost estimate
- Finalize the PS&E package
- Obtain final legislation
- Address all pre-bid questions and issues
- Contract addenda prepared
- Federal authorization obtained (if needed)
- Conduct construction contract sale
- Contract awarded to successful bidder

Construction is the fifth phase of the PDP. The purpose of the Construction Phase is to perform the final step of the PDP: Construct the project and perform all necessary pre- and post-construction tasks. Requirements for the management of the Contract after award can be found in the *Construction Administration Manual of Procedures* and the *ODOT Construction & Materials Specifications (C&MS)*.

## **1. Partnering, Preconstruction Meeting and Progress Meetings**

### **1.1. General**

The Contractor awarded the Contract has the responsibility to perform the work as detailed in the Contract Documents. Although it is the Contractor's responsibility to perform within the scheduled milestones and for the agreed-upon cost, it is ODOT's responsibility to administer the Contract. ODOT monitors, manages, and documents the Contractor's activities to ensure compliance with the plans, proposal, and specifications.

Conferences, meetings, and general coordination are tools of contract administration. The responsibility of ensuring ODOT performs proper project management after award of a construction contract falls on the project's Engineer as defined in ODOT's *Construction and Materials Specifications (C&MS) Section 101.03*.

The project Engineer is the duly authorized agent of the Department acting with the scope of its authority for purposes of engineering and administration of the Contract. The Project Manager may also function as the project Engineer after award, or this responsibility of managing the Contract may be handed to another responsible party. The Project Manager shall continue to be involved with the project, assisting the project Engineer as needed to ensure continuity.

### **1.2. Preconstruction Meeting**

The project Engineer should conduct a preconstruction meeting before the start of physical construction. The purpose of the preconstruction meeting is to review the various items of work as set forth in the detailed construction plans, bid proposal, specifications, and the Contractor's work schedule, as well as to establish the partnering relationship among project personnel. The primary goal of the preconstruction meeting is to introduce all of the project participants and discuss actions necessary for a successful start, execution, and completion of the contract work.

# Construction Phase

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The preconstruction meeting provides a forum to convey details of mutual interest and concern about the execution of the Contract Documents. It allows the opportunity to clarify and respond to any questions, or potential misunderstandings, regarding the upcoming work to be performed. The project Engineer, with Contractor input, coordinates the meeting details, list of attendees, and agenda topics after being contacted by the Contractor.

Following is a list of possible attendees:

- ODOT County Manager, Equal Employment Opportunity (EEO) personnel, Prevailing Wage Officer, Testing, Production, Utilities, and Environmental personnel
- Subcontractors and suppliers
- Participating agencies or any agency impacted, including the FHWA
- Utility and railroad companies
- Maintaining and Funding agencies
- Environmental Monitors

The pre-construction meeting uses the [Preconstruction Meeting Agenda/Minutes](#) form (CA-D-14) to document the meeting.

In addition, the Project Manager should conduct coordination meetings with the contractor's Project Manager on a weekly or bi-weekly basis depending on the project's size and complexity.

## 1.3. Partnering

The purpose of partnering is to develop a proactive effort and spirit of trust, respect, and cooperation among all stakeholders in a project. Project personnel are to adopt partnering concepts on each project. Self-facilitated partnering is the standard on all projects and is to be performed by the Engineer and Contractor. Once the contract is awarded, the District Construction Administrator (DCA), or designee will initiate partnering activities by discussing with the Contractor how partnering will be implemented on the project. At this stage, the DCA, the Project Engineer, and Contractor will identify and define major issues and project concerns and share relevant information to help determine the scope of the partnering efforts and to establish the agenda for the Preconstruction Meeting.

Partnering will be an important part of the Preconstruction Meeting and shall have its own agenda with specific time set aside to develop the necessary partnering protocols.

The DCA or designee, the Engineer, and the Contractor will jointly conduct the partnering meeting. The meeting will cover administrative requirements. The meeting minutes will be documented on the Initial Partnering Session Agenda/Minutes form. The Engineer and the Contractor should review the list of stakeholders and send an invitation to all stakeholders involved in the project. Depending on the size and complexity of the project, the initial partnering meeting may become part of the Preconstruction meeting. At the initial partnering meeting, all parties should:

- Discuss and obtain agreement on the meaning of any ambiguities identified in the Contract Documents include the proposal, any special provisions, and any general plan notes.
- Establishment of a Request for Information (RFI) process on the project. The RFI process is typically written transmittals between the contractor's construction management staff and the project Engineer (or designee) concerning contractual issues. The RFI transmittals become official Project documentation and are often very important components of the project record. At the initial partnering meeting, an understanding to whom an RFI must be addressed, acceptable format (letter, e-mail), and standard response time needs to be discussed and agreed upon by the Department and the Contractor.
- Empower the District staff to quickly resolve issues in steps 1 or 2 of the Dispute Resolution and Administrative Claims Process.
- Review the chains of commands of the Department and Contractor.
- Obtain understanding and agreement that ignoring an issue or making no decision is not acceptable.
- Individuals are not expected to make a decision with which they are uncomfortable, but should escalate upward in the dispute resolution process.
- Both parties should agree to finalize-as-you-go.
- Obtain contact information for all stakeholders.

Distribute the meeting minutes to all stakeholders for review and commitment to the plans developed.

## **1.4. Progress Meetings**

The project Engineer should conduct progress meetings with the Contractor on a weekly or bi-weekly basis depending on the project's size and complexity. The Project Manager should make every attempt to attend the progress meetings if they are not the project Engineer. Progress meetings are very productive tools for enhancing communication, discussing issues, and solving problems, thus, furthering progress on the project. The

# Construction Phase

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project Engineer must invite the appropriate personnel to attend the progress meetings. The status of the project must be discussed with the Contractor. Before the progress meetings, the project Engineer should prepare an agenda. An agenda should cover all items pertinent to the success of the project and be similar in format to the standard Progress Meeting Agenda/Minutes form. Agenda items to be considered include:

- Verify prior meeting minutes and announce future meeting schedule
- Review completed, ongoing, and soon-to-start activities
- Review status of environmental commitments and compliance, permit requirements, Value Engineering Change Proposals and outstanding Requests for Information, contractor proposals, submittals, and shop drawings
- The partnering relationship on the project
- Discuss the Project Schedule
- Identify conflicts and potentials for delays
- Discuss any known ongoing delays
- Report any issues that have been discovered on the project and how resolution has been approached, including timing with respect to the raising and consideration of the claims at all levels
- Discuss maintenance of traffic issues, safety concerns, and public relations
- Review the status of claims/disputes, change orders, and estimates
- Discuss testing/material issues, EEO/prevailing wages issues
- Hold open discussions
- Develop any additional, necessary strategies to improve project performance

Report all findings in the project minutes with copies sent to the senior personnel team for the review.

Coordination should also include public involvement. The public should be made aware of construction schedules and be included in decisions that will affect the local community's daily activities. For example, the local community should be involved with scheduling road closures or detours around high-traffic areas, daily high traffic times, or special events. For specific information on how to involve the public, refer to ODOT's [Public Involvement Manual](#).

## Coordination Meeting Agenda Topics

- Verify prior meeting minutes and announce future meeting schedule
- Attendee list
- Review completed, ongoing, and soon-to-start activities
- Identify conflicts and potentials for delays
- Review status of environmental commitments and compliance, permit requirements, Value Engineering Change Proposals and outstanding requests
- Discuss maintenance of traffic issues, safety concerns, and public relations
- Review the status of claims/disputes, change orders, and estimates
- Discuss testing/material issues, EEO/prevaling wages issues
- Hold open discussion

## 2. Notice of Intent/Storm Water Pollution Prevention Plan

A Notice of Intent (NOI) must be prepared for all projects with a Total Earth Disturbed Area (EDA) equal to or greater than one acre. The NOI is an application requesting coverage under a National Pollutant Discharge Elimination System (NPDES) general permit for storm water discharges from the Ohio EPA. It may be prudent to increase the estimated EDA acreage for projects just under one acre in case the acreage increases as the level of design detail increases. Refer to the [ODOT Location and Design Manual, Volume 2, Section 1112](#) for the definition of EDA, projects exempt from this process and the NOI Acreage Calculation Form used to estimate the Contractor's disturbance and activity area.

A Project Site Plan is required for all projects requiring the submittal of a NOI. The Project Site Plan is prepared as part of the Contract documents. The Contractor is responsible for modifying the Project Site Plan to prepare a Storm Water Pollution Prevention Plan (SWPPP) as part of the submission of the NOI. The Contractor shall develop the SWPPP in accordance with ODOT Supplemental Specification 832 prior to any construction activity. Refer to the [ODOT Location and Design Manual, Volume 3, Section 1308](#) for additional guidance and Site Plan requirements.

## 3. Value Engineering Change Proposals

During the Construction Phase, the Contractor may submit Value Engineering Change Proposals (VECP). The VECP is a written proposal submitted by the Contractor that, through a change in the Contract, which will reduce construction costs and possibly time on projects that do not contain Design Build provisions or incentive provisions based on time. The purpose of this provision is to encourage the use of the ingenuity and expertise of the Contractor in arriving at alternate plans, specifications or other requirements of the

Contract. Savings in construction costs and possibly time will be shared equally between the Contractor and ODOT.

The VECP must not impair any of the essential functions and characteristics of the project such as service life, reliability, economy of operation, ease of maintenance, safety and necessary standardized features.

Value Engineering Change Proposals are detailed in ODOT [Construction & Materials Specifications, Section 105.19](#).

## 4. Acceptance of Materials

Materials incorporated into the construction project must meet all requirements of the applicable material specification. Control of materials is a necessary and important part of every construction project. The intent is to ensure that only quality (specification) materials are incorporated into the work.

The Contractor must order materials sufficiently in advance of related work to allow enough time for sampling and testing. Materials should be field sampled to ensure they meet applicable standards. Where field sampling is not feasible, the method for accepting materials must be determined by the Administrator of the Office of Materials Management. The material specification is used in conjunction with the material sampling and testing program manual to provide the proper procedure for material acceptance.

In the event that unacceptable materials are incorporated into the work, these materials must be monitored to determine if they will function properly in the judgment of the project Engineer. If so, the project Engineer must follow the process to modify the Contract to allow these materials to remain in place. Options available when materials do not reasonably conform to the appropriate specifications for incorporation into the construction project are outlined in [Supplement 1102, Acceptance of Non-specification Material on Construction Projects](#). More information on controlling accepted material is available in ODOT's [Construction and Material Specifications](#) and in ODOT's [Construction Administration Manual of Procedures](#).

## 5. Construction

Construction can be defined as the execution and administration of the Documents. At the construction stage, the Contractor begins to perform the tasks detailed in the Contract. The Contractor is responsible for constructing the work as detailed in the Contract Documents. The project Engineer is responsible for ensuring that the terms of this

# Construction Phase

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construction contract, including changes, are fulfilled. The responsibilities of the project Engineer in managing the Contract can be found in ODOT's [Construction Administration Manual of Procedures](#).

The project Engineer needs to be aware of the requirements of the Contract. The Contract is the written agreement between ODOT and the Contractor setting forth the obligations of the parties, including, but not limited to, the performance of the work and the basis of payment. The Contract consists of multiple documents including the Invitation for Bids, Addenda, Proposal, contract form and required bonds, Specifications, Supplemental Specifications, Special Provisions, general and detailed plans, plan notes, standard construction drawings identified in the plans, notice to contractor, Change Orders, Supplemental Agreements, Extra Work Contracts, and any other document designated by ODOT as a Contract Document, all of which constitute one instrument.

The project Engineer is responsible for monitoring and documenting construction activity in the project diary to ensure the intent of the Contract is reflected in the final product delivered to the ODOT. As the on-site representatives of ODOT, the ODOT inspectors and engineers are authorized to observe all work being performed to ensure compliance with the Contract. Additionally, resource agencies which may have issued permits for the project, such as the United States Army Corps of Engineers or the Ohio Environmental Protection Agency, are also authorized to make on-site inspections.

As the required inspection activity occurs, ODOT has an obligation to inform the Contractor on a regular basis regarding the quality and compliance of the work performed. Conversely, the Contractor also shares in the responsibility to provide information regarding construction problems or issues to ODOT for timely resolution consistent with joint issue mitigation responsibilities. To verify that these conditions are met, certain documentation is essential. See ODOT's [Construction Administration Manual of Procedures](#) for more detail.

The text boxes below highlight some of the activities, incidentals, or requirements of the Construction Phase that become part of the project documentation.

## Construction Phase Includes:

- Contract Enforcement
- Material Acceptance
- Construction Process Documentation & Inspection
- Wage Reporting Documentation
- Assessment of liquidation damages
- Postponement of Contract completion date
- Critical Path Method scheduling
- Disputes and claims
- Change orders
- Project estimates
- Value Engineering Change Proposal

## Construction Activities to Monitor and Document

- All contractor and department correspondence
- The environmental commitments and permit requirements
- The contractor's use of public roads, workers, and public safety
- Change orders and force account work authorizations
- Prevailing wage compliance records
- Approved shop drawings and logs
- Transmittal and correspondence logs

## 6. Final Acceptance

The project Engineer shall evaluate the project when nearing completion and shall create an Engineer's punch list. The punch list shall consist of small work items needing performed prior to the Department's acceptance of the Work.

The Contractor will notify the project Engineer when all of the engineer's punch list items are complete. The District final inspector will then inspect the project for approval. If there are any outstanding minor work items, the inspector provides these items on a final punch list to the Contractor. If the final inspector finds the work substantially complete or substantially complete with punch list items, then the Contractor's maintenance responsibilities end on the day of the final inspection, except for any maintenance related to unfinished punch list items.

This does not relieve the Contractor of responsibility to correct defective work or repair damage caused by the Contractor or waive any other remedy to which ODOT is entitled at law or in equity. The Final Inspector will issue a Final Inspection Report that will document the findings of the inspection and start any warranty period. The Contractor must

complete the punch list and all necessary documentation before receiving the inspector's final approval, acceptance, and payment.

The Contract is complete, except for items covered by the required bonds, when the Contractor receives final payment. Final payment will not be issued until all materials are certified as meeting the specifications or accepted to be within close conformance of the specifications as determined by the project Engineer. All required documentation of proper wage requirements must also be met.

The District Construction Administrator will issue a letter confirming completion of the Contract, noting any exception as provided in Items 659 and 661 of ODOT's [Construction and Materials Specifications](#), and any warranty. The date the final payment is approved by the District and constitutes acceptance for the purpose of [ORC 5525.16](#). Neither completion of the Contract nor substantial completion relieves the Contractor of any responsibilities to properly perform or correct the work, to repair damage, or waives any remedies to which ODOT is entitled at law or in equity.

At the completion of the project and for each year of the duration of the project, the project Engineer shall evaluate the performance of Contractor by performing a C95 Evaluation. This is required by the Ohio Administrative Code. Evaluations shall be objective, shall be performed in a timely manner, use consistently applied rating guidelines, and be well documented.

## 7. Post-Construction Meeting and Activities

The Post-Construction stage involves documentation, coordination, and meetings to finalize the project.

A post-construction meeting is held during the Post-Construction stage. During this meeting, the project personnel and the Contractor review all aspects of the project to determine its challenges and successes. Probable participants include: the Project Manager, the ODOT design engineer, District Construction Administrator, project Engineer, invested project personnel, District Design Utility Coordinator, District Environmental Coordinator, Construction Area Engineer, and OES staff. Contractor personnel and management consultant are also likely participants.

The post-construction meeting uses a specific [agenda and checklist form](#) to document the meeting (under Section A of the linked list).

Topics for the post-construction meeting can include reviewing the value engineering changes, project change orders, project dispute-claims and negotiations settlements, and critical path schedule. Meeting participants also might discuss adherence to environmental commitments and permits, the accuracy and completeness of Contract Documents, and the partnering relationships with the contractors, field staff, management, and engineers.

Documentation created throughout the Construction Phase creates a history of the project and is a source of information for future construction, resolution of potential claims, and assurance of properly managed public funds. For more details on these construction activities, see ODOT's [Construction and Material Specifications](#).

The activities in the post-construction stage may include post-construction monitoring required by environmental commitments. Stream and wetland mitigation sites have a five year monitoring period for which annual reports are submitted to the U.S. Army Corps of Engineers (USACE) and the Ohio Environmental Protection Agency (OEPA). Environmental commitments should be reviewed to determine if other mitigation efforts require further action or coordination needs to occur for post-construction mitigation activities.

## 8. Construction Phase Products

- Pre-construction meeting and regular coordination meetings
- Approved Storm Water Pollution Prevention Plan
- Response to Contractor's Value Engineering Change Proposals
- Project Progress Reporting and Documentation
- Materials acceptance
- Documentation of compliance with environmental commitments
- Completed construction
- Final project acceptance documentation
- Documentation of post-construction meeting



# ODOT's Project Development Process (PDP) – Phased Approach



## PDP Project Paths

<b>Path 1</b>	Path 1 projects are defined as “simple” transportation improvements generated by traditional maintenance and preventive maintenance. They may involve structure and roadway resurfacing. These projects have no ROW or utility impacts. These projects are typically low level Categorical Exclusion NEPA documents.
<b>Path 2</b>	Path 2 projects are also simple projects that may be similar in work type to Path 1 projects. They involve non-complex structure and roadway work such as culvert rehabilitations/replacements, in kind bridge replacements, resurfacing, shoulder widening, signal installations and improvements (coordination) and isolated intersection improvements, such as turn lane installations, roundabouts or restricted crossing U-turns (depending upon ROW impacts). These jobs can include minor ROW acquisition (strip takes, temporary easements, and or channel easements). These projects are typically low level Categorical Exclusion NEPA documents.
<b>Path 3</b>	Path 3 projects involve a higher level of difficulty than projects in Path 1 or 2. They involve moderate roadway and/or structure work and may include capacity additions. Some examples are minor realignments and/or reconstruction, corridor capacity improvements such as Two Way Left Turn Lane installations or additional through lanes, interstate reconstruction and/or widening, auxiliary lane additions, interchange reconstruction or construction of a new interchange at an existing overpass/underpass. They can involve utility relocations and ROW acquisition including relocations. Path 3 projects may be higher level Categorical Exclusion NEPA documents.
<b>Path 4</b>	Path 4 projects include roadway and structure work that add capacity and involve consideration of complex and competing interests. Path 4 projects may have multiple alignment alternatives and can include extended highway widening (typically not within the median) in <b>suburban settings</b> , new alignments in <b>rural settings</b> , or implementing corridor wide access management. These projects involve impacts to ROW, access and the environment which will require a higher level of sensitivity regarding the effects of the project. These projects have substantial utility and/or ROW relocations/impacts. They typically require a higher level Categorical Exclusion, Environmental Assessment, or Environmental Impact Statement NEPA document.
<b>Path 5</b>	Path 5 projects have the highest complexity due to their <b>urban</b> setting and add capacity. These projects also involve consideration of complex and competing interests. Path 5 projects may have multiple engineering alternatives for highway widening, or new capacity-adding alignments in <b>urban</b> centers. An interstate reconstruction project would normally be considered a Path 3 project. However, when that interstate is in an urban center and the impacts of reconstructing that interstate affects access, businesses, neighborhoods, recreational and/or historic resources, the project should be scoped as Path 5 to ensure all impacts and their complexities are considered. These projects will have substantial ROW relocations/impacts, complex utility issues, multiple alternatives and/or access management considerations. These projects typically require Environmental Assessment or Environmental Impact Statement NEPA documents, but could in some instances be processed as a high level Categorical Exclusion.