

Design-Build

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OVERVIEW

As stated in the GDOT Design-Build Manual, “Design-Build combines preconstruction services with construction services into a single contract. Design-Build projects allow the contractor to participate in the project’s design in an effort to reduce costs, improve communication and expedite project delivery.”

The traditional construction method is Design-Bid-Build, which is a more linear approach to delivery where the engineering and environmental activities are completed prior to let for construction. In a Design-Build (DB) process the designer and contractor form a Design Build Team (DBT) to work jointly under a single contract with Georgia DOT to provide design and construction services. The DBT is typically responsible for tracking that environmental commitments are met and reporting environmental activities during design and construction to GDOT Office of Environmental Services (OES) staff.

From an environmental perspective, the objective is the same to ensure that environmental impacts are assessed and documented per federal and state regulations. The difference in the process may be the level of design detail available for the initial environmental studies, the timing of activities or when updates may be required. As with any project, the Environmental Analyst should be aware of the delivery method being utilized and determine if any of the delivery processes differ at the project kick-off meeting.

Design-Build Manual
Georgia Department of Transportation

DEFINITIONS

This section includes general definitions used in relation to the Design-Build process.

Alternative Technical Concept (ATC): A confidential process in which prospective Design-Build Teams propose changes to GDOT-supplied basic configurations, project scope, design criteria or construction criteria included in a Request for Proposals (RFP). These changes submitted by Proposers to GDOT during the procurement process shall provide a solution that is equal to or better than the requirements in the RFP. ATCs provide flexibility in the design and/or construction of a particular element of the project in order to enhance innovation and achieve efficiency or reduce project cost. ATC's are circulated to the appropriate GDOT staff to review prior to returning to the DBT for continued advancement or rejection.

Costing Plans: Provide an adequate amount of detail necessary to quantify right-of-way, utility and environmental impacts and are developed for most Design-Build projects. Certain exceptions for projects where costing plans are not developed include those with a well-defined scope and/or minimal right-of-way and environmental impacts. As stated in the Plan Development Process (PDP), the level of completeness of the costing plans should be approximately 30 percent. The costing plans are not intended to be the full Design-Build scope of work but are a conceptual plan set used as a basis for the scope of work and the environmental document.

Design-Build: Combining all or some portion(s) of the design, right of way, utilities and construction phases of a project into a single contract.

Design-Bid-Build: A project delivery method where design and construction are sequential and separate steps in the project development process.

Design-Build Team: A combination of contractors, design consultants (or a design consultant team) and other entities selected by GDOT who work together to design and build the project.

Notice to Proceed (NTP): The DBT is issued an NTP during different development phases of the project. The following describes a typical process for issuing NTP.

- > NTP 1 is issued after the notice of award (post-let) and GDOT has executed the Design-Build contract. NTP 1 is intended to release the DBT to perform preliminary design activities. *Note: GDOT's current practice for federally-funded projects is to execute the Design-Build contract only after the environmental document has been approved.*
- > NTP 2 is intended to release the DBT to perform final design activities after the DBT has executed certain Design-Build Management Plans.
- > NTP 3 is intended to release the DBT to perform construction-related activities on all or a portion of the Project. The DBT is encouraged to create opportunities to phase the work, thus, multiple NTP 3's may be issues within a project's construction life. If the DBT does choose to phase the work, they must submit to GDOT a work phasing plan illustrating the respective areas, as well as a checklist for each area illustrating

the necessary elements as set forth in the RFP, which are required before GDOT will issue a conditional NTP 3 for that portion of phased work. Some examples of phasing could be specific bridge work, traffic and erosion control, or work in non-permitted areas/ non-ESAs such as upland areas.

Reference Information Documents (RID): The collection of information, data and documents included as part of the RFP including, but not limited to preliminary design, planning documents, studies, reports and design files for the Project.

Request for Proposals (RFP): All documents, whether attached or incorporated by reference, utilized for soliciting proposals to the consultant and developer community.

KEY CONSIDERATIONS

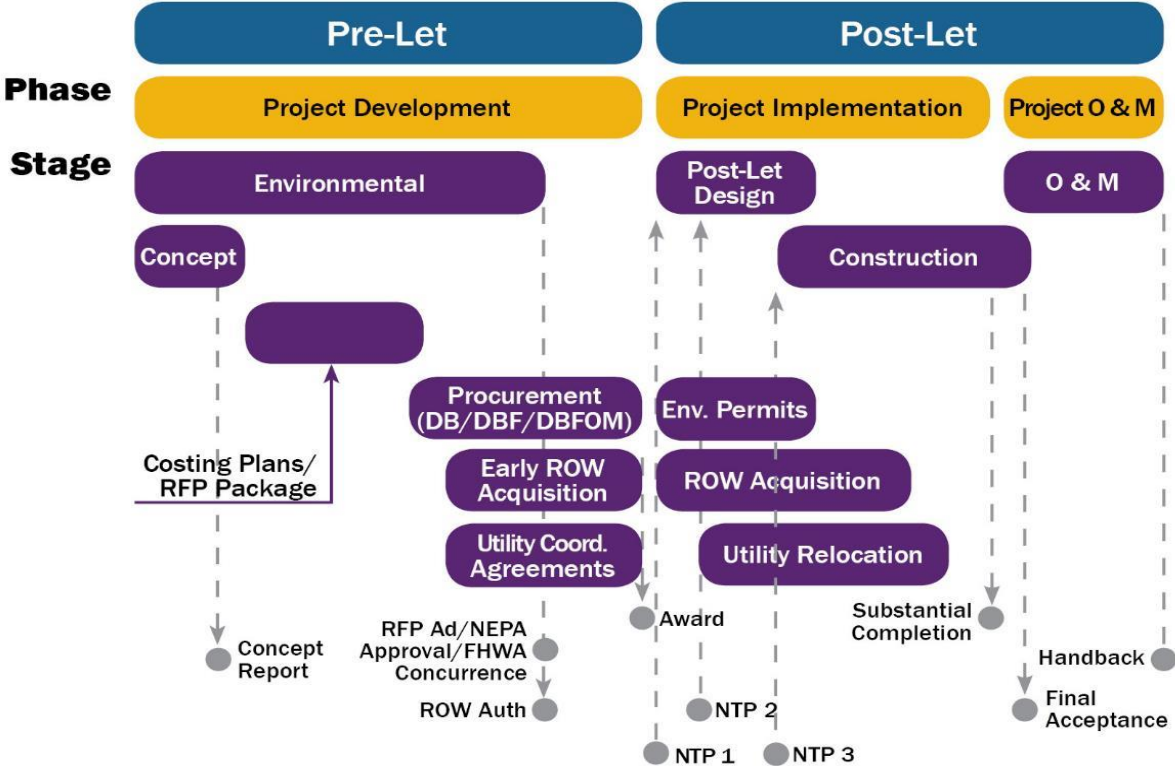
Although the DB delivery process is different from the traditional method, the environmental review process is required and adapted. GDOT OES has coordinated with the federal review agencies and other internal offices to develop strategies to meet the environmental review process within the context of a DB delivery strategy. The following sections describe key considerations and processes to address when preparing environmental evaluations for DB projects.

How does the Design-Build project delivery process differ from the traditional Design-Bid-Build process?

In a Design-Bid-Build process, the steps for project delivery are linear with right-of-way (ROW) acquisition, permitting and final design occurring prior to construction. Once design is finalized, ROW acquired, and permits are obtained – the project is put out to bid (let). Once let, a contractor is selected, and construction begins with minimal deviation from the final design plan set.

The Design-Build process allows ROW acquisition, processing permits, and design to occur concurrently, or in a multi-phased approach, with construction. Figure 1 shows a typical Design-Build Timeline. Because DB is regulated by Georgia statute and specialized FHWA rules and is processed in a different progression of events than the traditional “linear process” as described in the Plan Development Process, all GDOT DB projects are administered and managed in the Office of Innovative Program Delivery.

Figure 1 – General Design-Build Process (actual processes may vary project to project)



Actual processes may vary project to project.

Alternative Technical Concepts

The DBT will develop ATCs after the issuance of the RFP and prior to contract award. Please note that multiple DBT’s may be shortlisted during the procurement process and multiple ATC’s may be produced. Thus, not all ATCs reviewed would be moved forward to construction. ATCs are used to vet potential design changes or construction methods that may reduce costs, accelerate the schedule, improve operations or mitigate impacts.

The Environmental SME is responsible for reviewing ATCs and determining if they would affect the documented impacts, change to environmental commitments and/or changes to the next steps of the environmental review process. An ATC that would change the environmental impacts may be determined viable and the Environmental SMEs would document the process and required actions to update the environmental review process and how those updates would affect the schedule.

Sufficient Construction Envelope (SCE)

In the DB process, the environmental document is completed based on the Costing Plans. Costing plans are normally developed to no more than approximately 30 percent level, depending on risk factors such as ROW, scope complexity, and schedule considerations, but this may vary depending on project specific goals.

Because the Costing Plans being used for environmental documentation are subject to changes, a sufficient construction envelope (SCE) may be set to define an area where construction activities may occur or be anticipated to account for and accommodate any potential design changes later in the process. The Environmental SMEs would determine if an SCE is appropriate for use to account for potential impacts within that area, with an understanding that modifications to design will most likely occur in later phases but effects documented will not exceed what was documented within the SCE. Thus, the DBT is not unduly restricted with the construction flexibility while still maintaining an appropriate environmental compliance review.

Impact Freeze Areas

An Impact Freeze Area is used to determine areas where design changes cannot exceed the impacts documented for specific resources. Impact Freeze Areas will be documented prior to the selection of the DBT and included in the Reference Information Documents (RIDs) as part of the RFP, so that DBTs can understand design constraints during the procurement process.

The Environmental Analyst and discipline specific SMEs will coordinate on the use of an impact freeze area. Examples of an impact freeze area may be a historic resource or sensitive archeological site. Other examples may be to avoid exceeding impact thresholds on streams or wetlands or ensuring compliance with commitments at sensitive areas for protected species. The Environmental SMEs will identify impact freeze areas to be reported in the Assessment of Effects Reports and the NEPA document. A key role in reviewing ATCs would be to determine if a proposal violates the impact freeze area.

Pre-Let and Post-Let Activities

For traditional design-bid-build projects, environmental activities are mainly classified as pre-let activities with post-let activities mainly consistent of commitments to be completed during construction. Pre-let and post-let refers to the time before or after the project is advertised for construction, meaning a construction contract has been awarded and the project will be built. In the DB process, the pre-let activities are generally the same but are completed based on costing plans, and post-let activities include final design. The pre-let and post-let activities may vary for different DB projects and therefore some environmental activities, such as permitting, may occur pre-let or post-let in the DB process but will be specific to the project delivery needs. The DBT may be responsible for the ROW acquisition, processing permits, and final design. However, ROW and permitting may be completed by others to accelerate project delivery and therefore environmental documentation required for ROW or permitting would be completed as part of that process. The DBT's responsibilities can vary in relation to the environmental studies and are detailed in the DBT contract with GDOT. Coordination on project expectations and delivery strategy should be coordinated throughout the pre-let and post-let DB actions.

Environmental Activities Prior to DBT Selection

Environmental Document

- > Approval prior to RFP advertisement is preferred – as with all projects, the proposed funding type should be identified prior to the start of environmental activities.
- > NEPA Document on concept design must be approved before Federal Aid Award
- > Technical studies typically approved prior to State funded Award

Obtain Environmental Certification for Design-Build Advertisement

- > Environmental concurrence to advertise RFP

RFP Development and Advertisement

- > Include Environmental Commitments, Special Provisions (e.g. 107.23H), and other environmental requirements as part of the Technical Provisions. The Technical Provisions is an accumulation of requirements (includes scope of work and desired performance) to be utilized by the DBT to develop their proposal to GDOT
- > Scope of Services for DB Team
- > Reference Information Documents (RIDs) – not contractual
 - Costing Plans
 - Environmental Resource ID (ESA boundaries) and anticipated construction impacts

Alternative Technical Concepts (ATCs) Process

- > Review ATCs for adverse changes to documented environmental impacts and mitigation

Environmental Activities After DBT Selection

Preliminary Design

- > Completed by the DBT
- > Changes from the concept phase are reviewed by Environmental SMEs
- > Environmental documents are updated by the GEC in coordination with the DBT or others as defined by GDOT
 - Technical Studies Addenda (GEC prepares/GDOT SMEs review and accept)
 - Verification of environmental resources (DBT)

Final Design

- > Proceeds upon approval of the environmental document or re-evaluation

- > Environmental documents are updated by the GEC to document changes during Final Design in coordination with the DBT as defined by GDOT
 - Permit submittals (DBT prepares/GDOT is typically applicant)
 - Stream Buffer Variance (DBT)
 - Mitigation (credit purchase if needed) (DBT and/or GDOT)
 - Environmental Compliance Plan (DBT)

Please note the roles and responsibilities for any deliverable is defined in the Design Build Contract and may vary project to project. Upon review and acceptance of the above items GDOT will issue and Environmental Certification - Environmental compliance must be demonstrated including the above items prior to issuance of Notice to Proceed 3 (NTP 3) which allows the construction related activities to begin.

ROLES AND RESPONSIBILITIES

With a Design-Build delivery method, environmental studies are completed prior to procuring the DBT using the costing plans. The GDOT Division of Public-Private Partnerships (P3) oversees the Design-Build program with projects managed by the Office of Innovative Delivery (OID). Other services required for project delivery may be handled by entities such as the Program Management Consultant (PMC) who assist with the overall project delivery and act as a coordination point between GDOT staff and the DBT. A General Engineering Consultant (GEC) typically is involved and responsible for concept work/costing plans and the initial environmental evaluations. GDOT staff typically maintain their traditional roles of review, oversight, and agency coordination activities. Once a project is let to the DBT team, GDOT staff, PMC, GEC have responsibilities to oversee the DBT through final design and construction. Once the project is let for construction (NTP 3), a Construction Engineering Inspection (CEI) consultant may also be engaged to support GDOT in the project delivery process.

As such, responsibilities for environmental activities may include SMEs from the PMC and GEC in addition to OES. OES SMEs are responsible for approval of reports and documents and for coordination with federal agencies. Consultant Environmental SMEs are responsible for environmental analysis and delivery of high-quality documents. If a DB project is part of a larger program, a PMC may be in place to execute delivery of the entire program and provide Environmental SMEs support delivery of needed environmental documentations for specific projects. A GEC may be assigned for the pre-let activities and is responsible for the costing plans and the development and submittal of environmental documents. GEC Environmental SMEs are responsible for conducting field work, completing analyses, writing reports, responding to comments and maintaining an administrative record. The GEC will report to a PMC if one is in place or to a Project Manager in the OID.

Environmental reevaluations or special studies addendums may be conducted by the GEC or others as determined by GDOT. The DBT may develop a multi-phased construction approach with certain activities occurring concurrently with construction. This differs from traditional project delivery, in which ROW acquisition, Final Design Plans, and environmental permitting occur prior to construction beginning.

GDOT Office of Innovative Delivery Project Manager

- > Serve as Project Manager (concept through construction) – pre and post let Project Manager may differ
- > Guide development of RFP/Design-Build contract
- > Primary point of contact during design phase
- > Facilitate reviews with GDOT SMEs of Design-Build submittals
- > Responsible for RFP development oversight
- > Remain engaged during construction phase

GDOT Program Management Consultant (PMC)

- > Assist OID PM as needed throughout life of project
- > Environmental SMEs assist GDOT with deliverable tracking, reviews, and other tasks as needed

GDOT Office of Environmental Services (Disciplines as appropriate)

- > Attend kick-off and RFP review meetings
- > OES SMEs provide environmental oversight, document review and approval and coordination with resource agencies
- > Provide input into environmental commitments Section of RFP (Vol 2)
- > Draft Special Provisions for inclusion in RFP
- > Environmental commitments and Addendum approvals
- > Agency Coordination
- > Certifications (Environmental Analyst only)
 - Design Build Advertisement
 - Start of construction (may be phased)
- > Mitigation credits purchases tracking

- Can be DBT or GDOT purchase depending on project
- > Review and approve environmental permit applications to Agencies

GDOT General Engineering Consultant (GEC)

- > Conceptual Design/Costing Plans
- > Environmental special studies and NEPA document.
- > Environmental Team includes the following persons (some may serve multiple roles, provided the required qualifications are met):
 - Environmental Analyst
 - Archeologist
 - Historian
 - Ecologist
 - Air Quality Specialist
 - Noise Specialist

DB Team/ Developer

- > Design and construct the project within Contract requirements
- > Designate an Environmental Compliance Manager to lead the Environmental Team to prevent, minimize, and/or correct any violation of or noncompliance with Environmental Approvals.
- > Environmental Team includes the following persons (some may serve multiple roles, provided the required qualifications are met):
 - Environmental Analyst
 - Archeologist
 - Historian
 - Ecologist
 - Water Quality Specialist
 - Air Quality Specialist
 - Noise Specialist
 - Hazardous Materials Manager

- Worksite Erosion Control Supervisor (WECS)

LIST OF REGULATIONS AND REFERENCES

- > GDOT Design-Build Manual
- > GA Code 32-2-81 (2013)
- > Board Rules Chapter 672-18
- > 23 USC 112(b)(3) Design-Build Contracting – 2012 FHWA’s statutory requirements
- > Design-Build Contracting Final Rule (2014)
- > 23 CFR 636 Design-Build Contracting
- > 42 USC 4332 National Environmental Policy Act
- > 23 CFR 771 Environmental Impact and Related Procedures

Guidebook Revision History

Revision Description	Relevant Sections	Revision Date
Initial Publication	All	6/21/2021