

Successful Practices for Environmental Commitments

In Public-Private Partnerships (P3) & Design-Build (D-B) Contracts

Prepared for

AASHTO Committee on Environment and Sustainability

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EXECUTIVE SUMMARY

This report summarizes the activities conducted as part of NCHRP 25-25, Task 109: *Successful Practices for Environmental Commitments in Public-Private Partnerships (P3) and Design Build (D-B) Contracts*. Research activities included the identification of relevant examples in literature and current practice, interviews with state Departments of Transportation (DOTs) and resource agencies, and development of case studies. The research team sought to include a diverse combination of officials in the interview process, including state DOT officials, federal agencies, and state resource agencies. Case studies were similarly diverse and feature an array of projects (i.e., highway expansion, bridge replacements, rest area replacements, and a tunnel) from across the United States. These efforts identified replicable, successful practices for the communication of environmental commitments made by state DOTs in the environmental clearance documents into P3 and D-B contract provisions clearly and consistently and monitoring compliance with those commitments.

The literature review included a review of available literature that addresses alternative project delivery and environmental compliance, as well as a review of current alternative delivery manuals and guidelines published by state DOTs. Interviews with state DOT representatives provided real-world insight into how established policies, procedures, and methods influenced implementation, and what on-the-ground effort was necessary to successfully incorporate environmental commitments into an alternative delivery program. The interviews were used to identify eight case study projects that highlighted a list of replicable successful practices about communicating environmental commitments in a P3/D-B context. This report reviews evidence in literature supporting each of these practices, state DOT experience implementing the practice, and how the practice might be replicated at either a program or project level.

These successful practices include the following:

1. **Establish an interagency coordination protocol for implementation of alternative delivery projects.** The most successful states engaged agency partners early in the process, and typically had an established procedure for engaging those agencies. Engaging agency partners during the National Environmental Policy Act (NEPA) process enabled resource agencies to view a project as a whole and take into consideration many concerns when making a recommendation. Agency partners may also provide useful guidance into the overall implementation of an alternative delivery program and, if possible, extend programmatic agreements and memorandums of understanding to projects issued using alternative delivery methods.
2. **Develop standardized environmental commitments elements for D-B and P3 request for proposals.** Because D-B contractors are required to take on additional responsibility for implementation of environmental commitments, several state DOTs found that taking a programmatic approach to developing RFPs can ensure that all environmental commitments are considered and foster an environment where the D-B contractor can successfully comply with these commitments.
3. **Use database tools to track environmental commitments.** Database tools were a relatively new innovation among the DOTs researched for this project, but the tools were found to be widely applicable to projects regardless of delivery method – given certain expected resource impacts. In most cases, private partners are not yet able to directly access online database tools; they are, however, responsible for tracking commitments independently and reconciling those records later with the state DOT's master database.
4. **Require environmental training for all onsite workers and visitors.** Environmental training was found to be a successful method for providing private partners with a comprehensive overview of the

state DOT's environmental process and procedures. States indicated that requiring training for all staff entering a project site was an effective method for ensuring environmental compliance and indicated that this training should be specific to the project area to ensure that private partners were familiar with environmental concerns specific to the area.

5. **Assign the cost of reevaluation to contractors.** To ensure that private partners confine environmental impacts to those identified during the NEPA process, the technical provisions of the RFP may allocate the responsibility for the cost of reevaluation to the private partner. These technical provisions stipulate that, if the private partner's work results in changes to environmental impacts as outlined in the NEPA document, the private partner is responsible for providing the state DOT with all of the necessary documentation to complete the reevaluation and undertake any additional agency coordination. This practice is somewhat limited, and it can only be implemented if the state DOT has NEPA assignment or if the Federal Highway Administration division will accept contractor or development entity input for the reevaluation process.
6. **Develop incentives specific to environmental commitments.** Incentives related to environmental commitments and compliance with those commitments take two forms: technical credits assigned to contractors during the RFP phase and funding available post-award. Technical credits may be used during the RFP phase when there is a specific environmental impact that must be avoided or minimized; money is not exchanged, but contractors receive environmental "credits" toward the contractor's final bid to recognize the contractor's efforts toward minimizing environmental impacts. Post-award environmental incentives are rarely used, but state DOTs have offered a monetary bonus for going above and beyond contract requirements for environmental compliance.
7. **Assign bottom-line responsibility for environmental compliance monitoring.** The practice of establishing bottom-line responsibility for environmental compliance ensures that a qualified professional oversees commitments. The required qualifications for this individual should be established at a programmatic level, but the use of an environmental compliance monitor can be done on a project-by-project basis. An environmental compliance monitor may be appropriate for projects located in states where resources, such as water quality, are of concern.

It is worth noting that five of the seven replicable, successful practices center on ensuring strong communication among the contractor/development entity, resource agencies, and the state DOT. In general, the approach that many states appear to favor is to ensure compliance with environmental commitments by providing specific directions to the contractor or development entity through the RFP technical provisions.

INTRODUCTION

According to the Federal Highway Administration (FHWA) Office of Innovative Program Delivery, the three main types of public-private partnerships (P3) are design-build (D-B), design-build-finance, and design-build-finance-operate-maintain. Although the term ‘P3’ may refer to a range of contract types (and even lease of existing assets), the case studies described in this document use ‘P3’ to refer to the broadest private role: design-build-finance-operate-maintain (FHWA 2017). The D-B method of project delivery is not exclusive to P3 projects, but it is intended to save time; improve efficiency; allow for greater innovation; and promote effective coordination between the state Department of Transportation (DOT), the designer, and the contractor over the traditional design-bid-build delivery method.

P3 and D-B contracting processes have been addressed in federal transportation legislation and regulations going back to the 1990s. In 23 Code of Federal Regulations (CFR) Part 636: *Design-Build Contracting*, FHWA describes its policies and procedures for approving D-B projects financed under title 23, United States Code (U.S.C.) in satisfaction of the requirement of Section 1307(c) of the *Transportation Equity Act for the 21st Century* (TEA-21, 1998). Section 1503 of the *Safe, Accountable, Flexible and Efficient Transportation Act: A Legacy for Users* (SAFETEA-LU, 2005) requires FHWA to modify its rules to allow state DOT D-B contracts to proceed through the preliminary design stage before completion of the National Environmental Policy Act (NEPA) process. Meanwhile, Section 1303 of the *Moving Ahead for Progress in the 21st Century Act* (MAP-21, 2012) recognizes another project delivery method by allowing state DOTs to enter into “two-phase contracts,” also known as construction manager/general contractor contracts, prior to completing the NEPA process. Section 9001 of the *Fixing America’s Surface Transportation Act* (FAST Act, 2015) established the National Surface Transportation and Innovative Finance Bureau (Bureau) within USDOT. Among other responsibilities, the Bureau works with the USDOT modal administrations, eligible entities, and other public and private interests to develop and promote best practices for innovative financing and P3s.

Despite these and other legislative and regulatory initiatives, and a body of practice that dates back to the early 1990s, concerns continue to be raised over the extent to which the public interest is protected in P3 and D-B arrangements. Among these concerns is that the D-B method may overlook or not adequately address environmental commitments made by the state DOT during the NEPA process, or that revisions to the commitments may be required due to design modifications made by the P3 or D-B contractor. Failure to comply with commitments made during the NEPA process can have profound consequences, such as project delays; detrimental effects on relationships between state DOTs and regulatory, land-managing, and tribal partners; and potential litigation.

P3s are complicated contracts that often differ from project to project and from state to state. Such differences contribute to a lack of consistency and standardization in how P3 concessionaires/development entities or D-B contractors follow through on environmental commitments made by state DOTs during the NEPA process for a particular project. In many cases, state DOTs complete the preliminary design and environmental work to obtain the necessary permit approvals to minimize risk to the D-B contractor and cost to themselves. Alternatively, state DOTs have completed the NEPA process prior to letting the D-B contract and then pass some or all of the permitting responsibilities to the D-B contractor. The D-B contractor is then responsible for post-permitting environmental compliance through completion of construction. P3 arrangements also evolve as public and private entities continually find new ways to innovate.

Although 23 CFR 636.109 (*How does the NEPA process relate the design-build procurement process?*) stipulates that the D-B contract must include appropriate provisions to ensure that all environmental and mitigation measures identified in the NEPA document are implemented, 23 CFR 636.109 does not define “appropriate provisions” or state DOT processes to ensure consistent and unambiguous contract provisions related to environmental commitments and monitoring the implementation of such contract provisions.

The objective of this research project was to identify and evaluate successful practices for incorporating environmental commitments made by state DOTs in the NEPA document into P3 and D-B contract provisions consistently and unambiguously, and for monitoring implementation of the commitments by the P3 development entity or D-B contractor. This report summarizes the research findings and highlights replicable, successful practices currently in use related to the communication of environmental commitments and monitoring of compliance with those commitments in P3 and D-B contracts.

METHODS

The research process included a literature review; interviews with state DOTs; and development of case studies to evaluate replicable, successful practices for communicating and monitoring environmental commitments for P3 and D-B projects. The methodology used for each task is summarized in this section, and the complete methodology and results of these research tasks are appended to this report as follows:

- Appendix A: Literature Review
- Appendix B: State DOT Review Summaries
- Appendix C: Summary of Interviews on Practices and Experiences
- Appendix D: Summary of Follow-Up Interviews
- Appendix E: Case Studies

The literature review included a review of available literature related to D-B and environmental compliance and conducted an assessment of State DOT websites to review alternative delivery manuals and guidelines. This review resulted in the identification of potentially replicable, successful practices with a focus on communicating post- NEPA and permitting environmental commitments and facilitation of compliance with those commitments. These initially identified successful practices were the basis of the state DOT interview questions.

The primary objective of interviewing state DOT representatives with experience on P3 projects or D-B contracting procedures relative to environmental commitments was to build upon the literature review to further identify successful practices and obtain greater detail on the underlying policies, procedures, and

Literature Review - Relevant Publications

Successful Practices for P3s

NCHRP 25-25, Task 12: Design-Build Environmental Compliance Process and Level of Detail: Eight Case Studies

NCHRP Project 25-25, Task 25: Modification and Amendment of Environmental Permits on Design-Build Projects

NCHRP 20-07, Task 172: Recommended AASHTO Design-Build Procurement Guide

Guide for Design Management on Design-Build and Construction Manager/General Contractor Projects (Report 787)

Design-Build Highway Projects: A Review of Practices and Experiences

Effect of Public-Private Partnerships and Nontraditional Procurement Processes on Highway Planning, Environmental Review, and Collaborative Decision Making

methods that contribute to making the practices successful. The interviews were also used to identify candidate projects for case studies. Representatives from the following state DOTs participated in the initial interviews.

- Arizona (ADOT)
- Colorado (CDOT)
- District of Columbia (DDOT)
- Florida (FDOT)
- Georgia (GDOT)
- Louisiana (LaDOTD)
- Minnesota (MnDOT)
- Missouri (MoDOT)
- Montana (MDT)
- New York (NYSDOT)
- North Carolina (NCDOT)
- Pennsylvania (PennDOT)
- Texas (TxDOT)
- Virginia (VDOT)
- Washington (WSDOT)

In addition to identifying successful practices in the context of environmental commitments for P3 and D-B projects and contracting procedures, interviewees were asked to identify and compare approaches to NEPA analysis when completed prior to issuing the Request for Proposal (RFP) versus issuing the RFP while the NEPA analysis is on-going. The interviews also sought to identify process variations for P3 or D-B project development (versus design-bid-build) associated with environmental compliance or implementation of environmental commitments. In addition, interviewees were asked how their DOTs ensured compliance with environmental commitments made during the NEPA and permitting processes.

Initial interviews yielded a more refined list of existing, potentially replicable successful practices. The state DOT-identified successful practices were analyzed by reviewing information gathered from the literature review, which included a review of relevant publications and state DOT websites, information gathered through the state DOT interviews, and supplemental information identified for the case study projects. Additionally, material for the candidate case study projects was reviewed to identify which successful practices may be demonstrated.

Follow-up interviews were conducted with state DOTs to gather more detailed information on potentially replicable, successful practices related to communication of environmental commitments in P3 and D-B projects and compliance with those commitments. The state DOTs that participated in the follow-up interviews include MoDOT, MnDOT, PennDOT, TxDOT, VDOT, and WSDOT. Additionally, interviews with the following resource agencies were conducted to gain their perspectives on environmental commitments and compliance on alternative delivery projects.

- U.S. Army Corps of Engineers, Philadelphia District
- U.S. Army Corps of Engineers, Pittsburgh District
- Pennsylvania Department of Environmental Protection
- North Carolina Department of Environmental Quality, Division of Water Resources
- Washington State Department of Archaeology and Historic Preservation
- Missouri Department of Natural Resources
- U.S. Coast Guard, Atlantic Area, New York Sector

Based on the aforementioned efforts, the research team completed case studies projects that exemplified successful practices for environmental commitments. Ultimately, eight case studies were selected based

on diversity of geographic location, project type, type and significance of impacts, permits and approvals, and variety of contract vehicles. The research team developed the case studies using insights collected during prior tasks and primarily reviewed contracting documents (both Requests for Qualifications [RFQs] and RFPs) and environmental review documents (e.g., Environmental Impact Statements [EISs] and Records of Decision [RODs]) to better illustrate each case study's successful practices.

The case studies include a project overview, environmental considerations (including NEPA and environmental compliance), and case application of the replicable practices revisited over the course of this research effort. Each case study also addresses the allocation of responsibility and management of risk with regard to environmental considerations. The case studies vary in the complexity of environmental impacts and related commitments. Some state DOTs selected projects for alternative delivery because they had limited environmental impacts, while other states identified the level of project complexity as a reason to select projects for alternative delivery. Under alternative project delivery contracting, responsibility is allocated to the party best able to manage the project, but responsibilities that are allocated to contractors or development entities are generally required to be well-defined to minimize contingency pricing of risks and to allow the state DOT to manage risk related to environmental compliance.

SUCCESSFUL PRACTICES

State DOTs can choose from a variety of approaches to communicate environmental commitments for D-B and P3 projects that reflect contractors' level of familiarity with the D-B process in their states, and with the states' level of experience implementing D-B in project delivery. States with more mature D-B programs commonly have established procedures, assembled task forces, developed RFP templates, and updated D-B manuals for contractors' use. In states with less established D-B programs, or where D-B has not been widely implemented, communication methods likely are based on the latest project experience and evolve as needs change.

The following practices identified as successful by state DOTs are considered replicable.

- Establish Interagency Coordination Protocol for Implementation of Alternative Delivery Projects
- Develop Standardized Environmental Commitments Elements for D-B and P3 Request for Proposals
- Use Database Tools to Track Environmental Commitments
- Require Environmental Training for All Onsite Workers and Visitors
- Assign the Cost of Reevaluation to Contractors
- Develop Incentives Specific to Environmental Commitments
- Assign Bottom-line Responsibility for Environmental Compliance Monitoring

The following subsections contain summaries of each successful practice, presence of the practice in reviewed literature, variation among state DOTs implementing the practice, and potential for replicability.

1.1 ESTABLISH INTERAGENCY COORDINATION PROTOCOL FOR IMPLEMENTATION OF ALTERNATIVE DELIVERY PROJECTS

The success of an alternative delivery (i.e., D-B or P3) project depends on a strong and collaborative working relationship between the public and private partners. Frequent and open communication is essential in building this relationship—a collaborative attitude among the people involved, which typically cannot be formally enforced, is essential. However, certain approaches, including the use of partnering sessions, working committees, and a clear dispute resolution process, can stimulate such collaboration and contribute to the long-term success of the D-B/P3 projects. In addition to partnering sessions, structured public-private committees active during all procurement (i.e., during development of the RFP) and project (i.e., during construction, between construction and operation, and during operation) stages can help reduce the risk of unforeseen issues and stimulate open communication. Several of the states interviewed indicated that this interagency coordination proceeded more smoothly when supported by clear guidelines for communication and decision-making and could be used either to support specific alternative delivery projects or the state’s entire D-B program. Typically, this coordination occurs more frequently during either project inception or when a state’s D-B program is less established.

Evidence in Literature

Successful Practices for P3s (FHWA and Build America Transportation Investment Center 2016) cites the Commonwealth of Virginia’s Office of P3s (VAP3), Pennsylvania’s P3 Office, and TxDOT’s Strategic Projects Division (SPD)¹ as successful practices related to creation of a centralized unit with specialized skills to implement P3 transactions.

- The VAP3 mission is to identify, develop, procure, and implement a statewide program for project delivery under the 1995 Public-Private Partnership Transportation Act that is consistent with the transportation goals of the Commonwealth. The Transportation Public-Private Partnership Advisory Committee is briefed on potential P3 projects and makes a recommendation to the relevant agency whether a project should advance to the P3 project development stage.
- Pennsylvania’s P3 office was instrumental in developing policy documentation on how to implement P3s, specifically the “Implementation Manual & Guidelines for P3s.” It describes the organization of the Commonwealth’s P3 unit and its oversight committees and guidelines on project identification, screening, development, and procurement.
- The State of Texas charged TxDOT with implementing the state’s P3 program for the procurement and development of highways. Within TxDOT, this effort was initially led by its SPD with primary assistance for financial analysis from the Innovative Finance and Debt Management office and for legal analysis from the Office of General Counsel. Procurement policies and right-of-way (ROW) acquisition were also overseen by the SPD for P3s. The SPD was involved in P3s from the initial planning stages, including conducting feasibility studies of candidate projects, through procurement, development, and operations. Additionally, the SPD managed turnpike corridor system planning and undertook toll feasibility planning.

NCHRP 20-07, Task 172: *Recommended AASHTO Design-Build Procurement Guide* (University of Colorado 2005) notes that many transportation agencies have found it useful to create a D-B policy

¹ Note that, since the publication of this report, SPD has been disbanded, and its responsibilities have been distributed among other TxDOT divisions and offices.

committee or D-B task force to discuss relevant issues that affect departmental policies and procedures. The recommendation is to meet periodically to discuss global issues related to D-B and to be available to meet as important project-specific issues arise that could affect agency policy. Recommended representation on the task force or committee includes design, construction, procurement, and legal stakeholders. Additionally, some agencies have chosen to include design consultant and contractor representatives as committee members.

As noted in *Effect of Public-Private Partnerships and Nontraditional Procurement Processes on Highway Planning, Environmental Review, and Collaborative Decision Making* (Parsons Brinkerhoff et al. 2015), ADOT's P3 program guidelines require input from the P3 Technical Advisory Committee, which advises on technical issues of candidate projects and during the solicitation process.

NCHRP 25-25, Task 25: Modification and Amendment of Environmental Permits on Design-Build Projects notes that engagement with the sponsoring agency as early as possible helps to ensure successful project delivery and execution. Interagency coordination between the contractor, state DOT, and permitting agencies helps to keep costs and schedule delays to a minimum (Louis Berger 2007). As long as resource agency staff are available, resource agency involvement can help to establish the expectations for addressing or avoiding impacts and proposing mitigation.

State DOT Implementation

Colorado's Innovative Contracting Advisory Committee (ICAC) supports the state's D-B process by sharing successes and lessons learned. The group is supported by a charter that establishes the group's purpose, goals and objectives; membership; meetings; scope; decision-making procedures; and authorized actions.² The group consisted of a facilitator/chairperson, the Innovative Contracting Program, area engineers, FHWA representatives, the Attorney General's office, one representative from each of the six CDOT regions, the CDOT EEO, American Council of Engineering Companies of Colorado, and the Colorado Contractor's Association. Alternate members and specialty groups contribute to the committee on an as-needed basis. According to the charter, the group's purpose was to facilitate organized and efficient communications within CDOT related to all innovative contracting topics. ICAC's authorized actions include three items: (1) review standards, specifications, policies, and procedures; (2) perform research and develop reports; and (3) make recommendations to the CDOT executive management team and the chief engineer. When the state was relatively new to D-B, the committee met

Applicable Case Studies

- I-35W Minnesota River Bridge
- Montana Rest Area Replacement
- I-85 Widening
- Rapid Bridge Replacement
- Harbor Bridge Project

Agency Concurrence Points used in NCDOT Merger Process

- Concurrence Point 1: Purpose and Need and Study Area Defined
- Concurrence Point 2: Detailed Study Alternatives Carried Forward (DSA)
- Concurrence Point 2A: Bridging Decisions and Alignment Review
- Concurrence Point 3: LEDPA/Preferred Alternative Selection
- Concurrence Point 4A: Avoidance and Minimization
- Concurrence Point 4B: 30 Percent Hydraulic Review
- Concurrence Point 4C: Permit Drawings Review

² For more on CDOT's Innovative Contracting Advisory Committee charter, see <https://www.codot.gov/business/designsupport/innovative/enviro-sub/icac-eniv-charter>.

every few months over a period of years (CDOT 2015). As the state has matured with regard to D-B, the committee has met less frequently.

Related to communication of environmental commitments and ensuring compliance with those commitments, ICAC developed a risk assessment decision matrix to determine whether a project should proceed with alternative delivery and templates for CDOT's RFPs, its Environmental Compliance Plan, and its Tracking Mitigation Program (see Section 3.2 for a discussion of the RFP template). The matrix is used to identify projects that would be successfully delivered by alternative methods and is primarily focused on large-scale, complex projects where innovation is needed. The Environmental Compliance Plan tracks environmental commitments to ensure compliance. The template includes resource-specific requirements for environmental resources, which is where the NEPA commitments are conveyed and the process for any NEPA reevaluation is outlined. The last section of the template identifies deliverables.

The MDT Statewide Rest Area Prioritization Plan was also supported by a committee of planners both within the DOT and outside agencies. The committee included representatives from rail, transit and planning, maintenance, highways and engineering, FHWA, and Montana DEQ. The committee meets regularly, and is charged with research, funding recommendations, data management, technology, plan updates, facilities information updates, environmental evaluations, mapping, preparing future projects, monitoring current projects, and assessing past projects. The committee is supported by a committee chair, who facilitates committee participation, engages stakeholders, and is responsible for overseeing decision-making. The rest area coordinator is responsible for coordinating an annual review including input from the Statewide Rest Area Prioritization Plan committee and district administrators.

PennDOT identified the need for agency coordination when developing the scope of work for the Rapid Bridge Replacement Program. PennDOT planned to apply a pre-existing statewide Programmatic Agreement (PA) with the SHPO to the bridge replacement program and developed a Letter of Agreement (LOA) to clarify how the PA would be applied to more than 500 bridge replacement projects. The PA delegates much of the responsibility under Section 106 to pre-qualified individuals who work for PennDOT. This provision was extended to the development entity, which was required to have cultural resources staff, whose qualifications met the Secretary of the Interior's standards. Upon selection, these staff underwent about 160 hours of PennDOT training to ensure the provisions of the PA could be carried out correctly. Additionally, there were provisions for reporting and auditing. PennDOT engaged the SHPO during the development of the scope of work and developed a letter of agreement in coordination with the SHPO and FHWA stipulating the use of the PA for the program. PennDOT also coordinated with USACE to confirm that the provisions for Section 106 would satisfy USACE's compliance requirements for Section 404 permits. PennDOT also developed aesthetic design standards consistent with DOT's PA with the SHPO for bridges located within historic districts (note that bridges that were individually eligible for the National Register of Historic Places were not considered for the program).

The New York State DOT (NYSDOT) project management office recently put together a task force to identify D-B process improvement measures. The task force addressed D-B projects constructed between June 2016 and July 2018 and will make recommendations for improvements to NYSDOT's D-B manuals and procurement procedures. The task force also looks outside the state to assemble information from FHWA and peer exchanges.

Although it is not a task force, MnDOT uses a project delivery selection matrix (spreadsheet) from Colorado to manage discussions related to D-B. There is a 3-hour meeting to discuss specific topics, cost, impacts, risks, schedule, and complexity. MnDOT evaluates if there are third-party commitments (e.g., to a historical society) and other integral items required for consideration to design. MnDOT uses an MOU on the Minnesota River Bridge program that for which external coordination protocols were established for federal agencies, tribal governments, state agencies, and local agencies. Each guidance sheet for these parties includes contact information, authority, agency roles, areas of concern, agreements if applicable, and procedures/requirement. Project interactions vary on a case-by-case basis. For this project, MnDOT also entered into an MOU with the Minnesota Pollution Control Agency that describes the process for obtaining the National Pollutant Discharge Elimination System permit coverage on the D-B project.

Elements of Successful Interagency Coordination

- Chair(s)/lead agency, with a clear chain of command
- A single point of contact to share information with the group
- Established method of communication (e.g., email, meeting, shared website)
- Clearly stated critical points of coordination
- Clearly stated decision-making process

NCDOT communicates directly with resource agencies following environmental review while preparing the RFP. North Carolina DOT (NCDOT) also uses the state's merger process to provide multiple concurrence points throughout the design process.³ The merger process that was designed for projects that were anticipated to require a Clean Water Act Section 404 individual permit from USACE. The premise was to ensure that the environmental review process (NEPA and North Carolina's State Environmental Policy Act) covered all requirements from USACE and other consulting agencies such that the project would not be delayed for let. Although the merger process was originally developed for all types of projects requiring an individual permit, regardless of delivery method, it has been useful on alternative delivery projects to ensure that any design changes proposed by the contractor still met resource agencies' expectations. For example, if a design change would substantively change the impacts and mitigation agreed upon through the merger concurrence points, the merger process has a mechanism for agency consideration of these changes. However, it is important to note that projects that would proceed under a nationwide or general permit under Section 404 of the Clean Water Act would not be subject to this level of agency coordination.

Although this merger process is not limited to D-B projects, it provides concurrence points with resource agencies to be involved beyond the NEPA process, including the review of RFP commitments. For the interstate widening and bridge replacement of I-85, NCDOT also established an MOA among the FHWA, NCDOT, and the North Carolina SHPO with clearly delineated requirements for the contractor to follow in advance of construction.

When developing D-B projects, TxDOT assembles an internal team to help develop technical provisions that are specific to that particular project. For instance, if endangered species are a factor, TxDOT assembles a team with that expertise in addressing issues related to endangered species.

³ For more on North Carolina DOT's merger process, see <https://connect.ncdot.gov/resources/Environmental/Pages/Merger-Process-Guide.aspx>.

Replicability of the Practice

States may take several approaches to implementing interagency coordination. Although the practice of establishing a Memorandum of Understanding (MOU), LOA, or PA is not exclusive to infrastructure built using alternative project delivery, these may be used or developed for D-Bs and P3s. For example, PennDOT developed a LOA with the SHPO to clarify how their statewide PA would be applied to bridges replaced under the state's Rapid Bridge Replacement Program. The LOA also included aesthetic standards bridges that were located in historic districts. Most of the individual bridge replacement projects could be addressed under the State Programmatic General Permit that delegated permitting authority to the State Environmental Protection Agency, which reduced the level of agency coordination for the projects.

For individual projects, a process similar to merger may be warranted depending on the magnitude of environmental impacts. This process appears to be limited to large projects during NEPA, reevaluations, permit applications, and permit modifications. The advantage of this approach is that it allows many resource agencies to review an entire project in context and take into consideration many different concerns (including endangered species, wetland, and others).

The use of a task force was found to be very beneficial for state DOTs seeking to improve the implementation of their alternative delivery program. This approach allowed states to better identify issues that could be better communicated to contractors and development entities in the form of templates and manuals. A few of the states interviewed had set out a protocol for interagency coordination in task forces by developing charters and other guiding documents that clearly stated responsibilities, methods of communication, and points of contact.

1.2 DEVELOP STANDARDIZED ENVIRONMENTAL COMMITMENTS ELEMENTS FOR D-B AND P3 REQUEST FOR PROPOSALS

The D-B RFP package is a set of documents that the agency provides to potential design-builders (proposers). It defines the project through a combination of preliminary design documents and performance requirements. Similar to the bid package (plans and specifications) in design-bid-build delivery, the D-B RFP package serves as the basis of proposal preparation before the award and as the contractual obligations to both parties after award. Because the RFP is the basis for the contract, it is perhaps the most critical element of D-B project success. Contracting agencies should take a strategic approach in preparing the RFP package and commit appropriate resources to it to ensure success.

The D-B RFP includes, among other documents, instructions to proposers, a D-B criteria package (project scope, performance criteria, and preliminary design), survey and geotechnical reports, contract provisions, and references to design manuals and standards. The RFP also covers project information that bidders will need to generate a high-quality proposal, including: general provisions, project scope, anticipated revenue mechanisms, anticipated delivery method, preliminary project schedule, federal and state requirements, output-based performance metrics, and whether alternative technical concepts will be considered.

The contract structure for D-B projects is unique, and therefore the RFP will also be unique. Table 1 shows a summary of the environmental elements included in RFPs. Because D-B contractors are required to take on additional responsibility for implementation of environmental commitments, state DOTs that take a programmatic approach to developing RFPs can ensure that all environmental commitments are

considered and foster an environment where the D-B contractor can successfully comply with these commitments.

Table 1. Environmental Elements within RFP Templates

| Topic Area | Areas of Focus |
|---|---|
| Environmental Manager | <ul style="list-style-type: none"> • Environmental Compliance Manager—Lead for all communication and coordination • Environmental Compliance and Mitigation Training Program • Environmental Task Force • Conditions under which Environmental Manager/Environmental Commitment Monitor may be required |
| Environmental Compliance | <ul style="list-style-type: none"> • Environmental Compliance Work Plan • Environmental Compliance Inspector • Environmental Compliance Status Reports • Environmental Compliance Work Plan Amendment • Equipment/Software • Final Environmental Compliance Work Plan • Independent Quality Assurance Program • Reports and Plans |
| Environmental Resources Requirements | <ul style="list-style-type: none"> • Air Quality • Noise • Cultural Resources (archaeological and historic resources) • Paleontology • Trails, Parks and Recreation • Section 4(f) Resources • Vegetation • Wildlife • Water Resources, including wetlands • Protected Species • Water Quality, Including Stormwater Management and Erosion Control • Hazardous materials • Contaminated Soil and Groundwater • Asbestos and Other Regulated Waste • Contingency Plans |
| Onsite Training | <ul style="list-style-type: none"> • Environmental Protection Training |
| NEPA Reevaluation and Environmental Certification | <ul style="list-style-type: none"> • NEPA Reevaluation • Environmental Certification |
| Permits | <ul style="list-style-type: none"> • Permit Compliance and Modifications |

Evidence in Literature

Although the literature reviewed did not reference RFP templates, it covered other important elements of RFPs.

In *NCHRP 25-25, Task 12: Design-Build Environmental Compliance Process and Level of Detail: Eight Case Studies* (Louis Berger 2005), common successful practices include the selection of the D-B

approach during the EIS phase, followed by a specific, well-written RFP to provide enough detail about environmental conditions and commitments in relation to the finished product, without being too rigid that it would preclude innovation on the part of the contractor. State transportation agencies who obtained early-action permits in advance of the RFP for the D-B contract were generally able to include in the RFP all permit conditions and mitigation measures required and clearly transfer this responsibility to the contractor for compliance and implementation. Project design criteria, as part of the RFP packages, were also developed to include all permit terms and conditions (Louis Berger, 2005).

The NCHRP 20-07, Task 172: *Recommended AASHTO Design-Build Procurement Guide* (University of Colorado, 2005) states that, although RFPs must be project specific, it outlines important elements of an RFP (see text box).

In the Texas A&M Transportation Institute's *Design-Build Highway Projects: A Review of Practices and Experiences* (2016), reviewed D-B procurement in Texas, which involves the issuance of an RFQ followed by an RFP. For example, the RFP issued by TxDOT for State Highway 360 included the following:

- Information on the overall project goals.
- Publicly available cost estimates for the D-B portion of the project.
- Materials specifications.
- Special material requirements.
- Schematic design approximately 30 percent complete.
- Known utilities, provided that TxDOT is not required to undertake an effort to locate utilities.
- Quality assurance and quality control requirements.
- The location of relevant structures.
- Notice of any rules or goals adopted by TxDOT relating to awarding contracts to disadvantaged business enterprises or small business enterprises.
- Available geotechnical or other information related to the project.
- The status of any environmental review of the project.
- Detailed instructions for preparing the technical proposal, including a description of the form and level of completeness of drawings expected.
- The relative weighting of the technical and cost proposals and the formula by which the proposals will be evaluated and ranked.
- The criteria to be used in evaluating the technical proposals, and the relative weighting of those criteria.

D-B RFP Elements

- Announcement of project solicitation
- Project description
- Mandatory requirements
- Procurement schedule
- Prequalification requirements
- Proposal requirements
- Disqualification
- Selection criteria and award method
- Technical criteria
- Pre-submittal conference and evaluation interviews
- Stipends
- Identification of technical require committee
- Submittal and deliverable requirements
- Contacts information and communication method
- Forms

Finally, the *Guide for Design Management on Design-Build and Construction Manager/General Contractor Projects (Report 787)* (Minchin et al. 2014) cautions that users not assume that an existing RFP or contract template will work for their organizations or projects. Rather, it suggests that the following ideas should be incorporated into the RFP and later construction documents: proper level of design, restrictions on design, and risk allocation. Regarding the level of design, the guide notes that agencies should provide a level of detailed design to clearly convey the project scope without hindering the proposer's capacity to introduce innovation. Additionally, agencies should clearly state and define any restrictions to design (e.g., the prohibition of any modifications to bridge length or typical section). Including these restrictions in the RFP allows proposers to assess the consequences of these restrictions and develop their proposals accordingly.

State DOT Implementation

A standard template streamlines the process of preparing the RFP and guarantees inclusion of certain common elements. Below is a description of how some state DOTs implement the use of RFP templates to present environmental requirements.

CDOT takes the decision document from the NEPA process and uses an innovative contracting decision matrix to develop the contract. Although CDOT has an RFP template that was developed, it is not published. The template outlines the duties and requirements of the environmental manager (e.g., the stormwater inspector cannot be the environmental manager), Environmental Compliance Plan, and Tracking Mitigation Program. The template also includes resource-specific requirements for environmental resources, which is where the NEPA commitments are spelled out.

The District DOT uses the environmental document (NEPA) as the guiding document for the D-B contractors. The environmental information from the NEPA document identifying commitments and other supporting environmental documents are provided in the reference of the RFP.

FDOT enters project-specific environmental commitments into a Commitments Module in Project Suite Enterprise Edition and in the design plans. For D-B and other alternative contracting (P3), the RFP includes a specific list of contractor commitments generated by the tracker.

RFPs for the Montana Rest Area Replacement projects were developed using a standard template with eight parts. Environmental considerations are included in Section VI, *Design and Construction Criteria Package*. For projects with substantial environmental impacts, the section includes a requirement for an environmental manager.

MoDOT RFPs include any environmental commitments that have been documented prior to procurement. This is not always completed prior to release of an RFP, but MoDOT believes it is best practice to perform some environmental work before procurement to identify key risk areas. On projects where environmental commitments have been made, they are included in the procurement documents, and, during the procurement, contractors are allowed to propose strategies to meeting the commitments or offer up strategies to minimize impacts. MoDOT has a template for RFPs, but the template can be modified to fit specific projects, as needed. Environmental clearance is not always obtained prior to RFP release, however, a clear path to clearance is generally provided.

Applicable Case Studies

- US 36 Express Lanes
- Montana Rest Area Replacement
- Exit 131 Reconstruction
- Alaskan Way Viaduct

NYSDOT ensures that the authoring of the RFP, which defines both the scope and the requirements of the project—whether it be prescriptive, directed, or open-ended—is in compliance with the environmental documentation. NYSDOT does not issue RFPs in a final format until it has the Record of Decision (ROD), and it uses customizable templates for the D-B process. Obligations from environmental documents are established as requirements in the RFP.

NCDOT's RFP process is the same as D-B. Requirements to follow environmental commitments are provided in the RFP. All environmental documents are referenced there, and direction is provided to contractors on compliance. A basic environmental permitting template, which is then modified per project, is provided in the environmental permitting scope of work in the RFP.

The VDOT process of environmental compliance for D-B projects is an established program with established contract language and template with technical requirements (which spells out responsibilities and requirements stipulated onto the D-B team), in which every discipline in the agency monitors. The template uses standard language on every contract, and then additional details and descriptions vary based on the project specifics. VDOT does not release the RFP until a NEPA decision has been received, which allows the DOT and bidders an understanding of the environmental commitments before moving forward. Environmental commitments are included as performance criteria in the contract.

WSDOT uses an RFP template, and Section 2.8 of the template includes the technical specifications related to environmental issues. The template describes the approach for environmental commitments and an environmental commitment list. The template is included as an appendix in the contract as a contract requirement.

Replicability of the Practice

Several state DOTs found that presenting clear expectations in the RFP, having a well-defined scope, was a useful method for contractors to consider environmental commitments early in the process. CDOT found that a task force of private contractors, state DOT representatives, resource agencies, and FHWA liaisons was useful in the development of the RFP template. Other state DOTs used RFPs from previous alternative delivery projects to develop a template. To update the RFP template, state DOTs can facilitate a debriefing (after procurements and near the end of the contract life) to discuss lessons learned on that project.

Use of an RFP template should be considered on a programmatic level. Although project debriefs can serve as a feedback mechanism to improve the template, having standardized environmental elements within an RFP template ensures that environmental commitments are communicated clearly to contractors and a way to monitor and confirm compliance with these commitments is in place. The use of an RFP template also ensures the environmental categories are listed, considered, and can otherwise be deleted if not applicable. Careful consideration should be applied to the language and any boiler plate text that would need to be updated based on project-specific requirements.

1.3 USE DATABASE TOOLS TO TRACK ENVIRONMENTAL COMMITMENTS

Several state DOTs interviewed use database tools to track environmental commitments. In some cases, online databases are used to produce environmental documents to develop the RFP and the contract. The database is typically maintained by the DOT from project development through completion of construction. In other cases, an ancillary tracking is developed (typically using an Excel® workbook)

following the issuance of the RFP and used primarily by contractors. Use of these tools provides oversight practice and transparency in tracking environmental commitments.

Evidence in Literature

Some of the literature reviewed demonstrated the use of database tools to track environmental commitments. Online database tools such as Texas's online Environmental Compliance Oversight System (ECOS) may be used to track all impacts to resources (e.g., jurisdictional waters). *Successful Practices for P3s* noted that the North Tarrant Express project team received national recognition for its environmental processes including implementation of a comprehensive environmental protection program that resulted in the development and implementation of an EMS that identified, monitored, and minimized environmental impacts (FHWA 2016). *NCHRP 25-25, Task 12: Design-Build Environmental Compliance Process and Level of Detail: Eight Case Studies* (Louis Berger 2005) also acknowledged a TxDOT project, SH 130, where the contractor voluntarily implemented the EMS computer tracking software ISO14001 as a means to ensure compliance with environmental commitments.

State DOT Implementation

Of the 15 state DOTs interviewed, five use online databases to track environmental commitments: FDOT, LaDOTD, PennDOT, TxDOT, and WSDOT. Several states, such as CDOT and MnDOT, have developed spreadsheet tools to track environmental commitments.

FDOT uses Project Suite Enterprise Edition (PSEE), an online multi-faceted application that allows project managers and other project staff to query project information, including environmental commitments. Environmental commitments identified through the NEPA process are entered into the database. FDOT uses this software for all projects, regardless of delivery method, and it has a computer-based training module to educate staff on how to use the environmental commitment tracker within PSEE, generating the *Form No. 650-000-01: Project Commitments Record*. For D-B and other alternative contracting (i.e., P3), a specific list of contractor commitments derived from PSEE is provided in the RFP. FDOT's construction engineering inspectors are responsible for ensuring the contractor builds in accordance with those commitments. Once a project is let and underway, the construction engineering inspector uses the database to confirm compliance with environmental commitments.

Applicable Case Studies

- Rapid Bridge Replacement
- Harbor Bridge Project
- Alaskan Way Viaduct

LaDOTD uses a tracking system that was built by SAP (Project System) to interact with their other project systems to track environmental commitments via a project commitments tab within the system. It is then the DOT project manager's responsibility to ensure the project commitments are included in the RFP and construction contract.

PennDOT uses an environmental commitments and mitigation tracking system for both traditional and D-B projects. The mitigation tracking system matrix (matrix) includes a single line item for each commitment. Each line item includes the responsible research team member (e.g., design engineer, environmental manager, construction inspector, or contractor) and timeframe for completion (e.g., final design, construction, post-construction operation and maintenance). The matrix generates a signature page that logs the commitment, date completed, signature of the contractor, and signature of the construction

inspector. With D-B projects, the contractor is responsible for providing updates to the matrix. PennDOT is currently working on an interface for the matrix so that contractors can access it in the field via iPad.

TxDOT uses an internal system, ECOS, to track projects and commitments regardless of project delivery method. This online database is used to track commitments through the life of the project. For D-B projects, the commitments are taken from ECOS and entered into the RFP and contracting documents. Once the project is in the design phase, environmental permits, issues, and commitments sheets are issued that list all of the commitments made and future activities to be conducted. The D-B contractor uses its own system to manage the compliance with environmental commitments, and TxDOT takes the input from the D-B contractor and construction inspectors to track the project in ECOS.

WSDOT's environmental manual (Section 490.01) mandates the use of a commitment tracking system (CTS), which is a WSDOT database that allows DOT staff to store commitments in a secure computer network server and manage the responsibility (WSDOT or contractor) and implementation method (guidance document or contract) for the commitment. The CTS stores compliance records and provides documentation of the status and reports regarding details about commitments from their inception through project delivery and on to maintenance. During the interview, WSDOT indicated that it is working on making the database a web application so that it is possible to share the CTS with the D-B contractor and manage the commitments electronically.

VDOT uses the Comprehensive Environmental Data and Reporting System (CEDAR) to track and document environmental tasks and commitments. Much of the state's document writing, including environmental clearances, is done through CEDAR, including the form used to file a categorical exclusion. The software itself may be used to produce a report that identifies compliance issues.⁴

In addition to online database use, three of the state DOTs interviewed use ancillary tracking tools that could eventually be converted to an online database system. Minnesota and Colorado DOTs use "green sheets"—in fact, Minnesota adopted Colorado's method to track environmental commitments through the use of green sheets.⁵ The green sheets track environmental commitments as individual line items and include reference documents related to the commitment, DOT contact, comments, and D-B contractor verification fields. MoDOT uses an Excel® file 'Design Green Sheets' to identify and track comments. The Excel® file is used to ensure commitments are listed in the RFP and contracting documents and then monitored through construction. Elements of that spreadsheet tool include the following:

- State, location, and/or descriptor
- Plan, section, number, or special provision number
- Agency, permit, and/or regulation
- Commitment
- Reference document (hyperlinked where possible)

⁴ For more information on how CEDAR is used in project development, see http://www.virginia-dot.org/business/resources/local_assistance/LAD_LAP_manual_final/LAP_Manual_February2018.pdf.

⁵ Note that MnDOT did not establish the practice of using green sheets prior to initiating the Minnesota River Bridge project.

- DOT functional unit lead
- Commitments
- DOT contact
- Contractor verification (for D-B only)

Replicability of the Practice

An EMS is a way of incorporating environmental consideration into daily activities. An EMS assists project development and review as well as office operations for DOTs to be active stewards of the environment. EMS is the organizational structure that defines the responsibilities and procedures to integrate environmental considerations and objectives into the decision-making processes, operations, construction, and implementation of a D-B project. Many states interviewed indicated that the use of database tools was a relatively new innovation and applicable to projects regardless of delivery method – given certain expected resource impacts. The database tools identified are generally program-level databases stored online that could be customized for specific projects. While not database tools, several states use spreadsheets to track commitments.

Typically, the project manager is responsible for entering environmental commitments developed through NEPA into the database tools and similar tracking software. Although the program-level database tools include GIS functionality wherever possible, they necessarily include some descriptive information for certain resources (such as recreational resources subject to Section 4 (f)).

In most cases, the D-B contractor and P3 development entities are not yet able to directly access online database tools; they are responsible for tracking commitments independently and reconciling those records later with the master database. It is recommended to establish a practice of using an environmental compliance monitor (ECM) whom is also granted direct access to the database.

To track commitments, the database (or database module) must focus specifically on environmental commitments—and not on the universe of documents associated with a project. In such cases, the research team found that spreadsheets would often supplement the larger database to support a less onerous tracking system. Although spreadsheet tools may not have the ease of access or version control present in online databases, they also are a less expensive choice for individual projects.

Combined with a strong environmental management plan these database tools are effective at securing compliance.

1.4 REQUIRE ENVIRONMENTAL TRAINING FOR ALL ONSITE WORKERS AND VISITORS

Several states interviewed indicated that environmental training had become an important part of their overall transportation program. Not limited to D-B projects, these environmental training programs are generally developed to be relevant to every contractor on the construction site and include an overview of environmental compliance, NEPA and relevant regulations, the permitting process, and state-specific

Example Database Tools:

- VDOT: Comprehensive Environmental Data and Reporting System (CEDAR)
- FDOT: Commitments Module in Project Suite Enterprise Edition (PSEE)
- TxDOT: Environmental Compliance Oversight System (ECOS)
- PennDOT Mitigation Tracking System Matrix

Supporting Data Tracking:

- CDOT and MnDOT ‘Green sheets’

procedures for tracking environmental compliance. The training programs also typically include the legal foundation for environmental compliance.

Many of the state DOTs interviewed offer general training on environmental tracking and environmental resources that is not specific to a particular project and could be taken online or in-person. However, for D-B, all state DOTs that currently use the practice indicated that onsite training for specific resources ensured stronger compliance. Many of the states that required onsite environmental training also used other practices listed here, including a standardized environmental template (Section 3.2) and database tools (Section 3.3).

Evidence in Literature

NCHRP 25-25, Task 12: Design-Build Environmental Compliance Process and Level of Detail: Eight Case Studies (Louis Berger 2005) highlighted TxDOT's State Highway 130 project, which was the first highway in Texas to be developed under an Exclusive Development Agreement (EDA) between the TxDOT, a D-B contractor, and a variety of regulatory agencies (i.e., federal agencies, state agencies, and the Lower Colorado River Authority). The EDA specifically allowed property acquisition, design, and construction to be undertaken simultaneously and had a goal of "zero violations" for environmental commitments. The EDA provided requirements for onsite ECMs and an extensive environmental training program. Environmental impacts to resources such as wetlands, water quality, wildlife habitat, archeological, and historical resources were aggressively monitored. This ensured that both the design and construction of SH 130 meet all applicable environmental regulations. The environmental training for this project included the following elements:

- Background on environmental issues;
- Overview of specific environmental commitments at the project level;
- Overall importance of environmental protection to the project;
- Contractor's commitments and responsibilities;
- Worker responsibilities;
- Regulatory permit conditions;
- Wetlands identification;
- Overview of the provisions of the Endangered Species Act and project mitigation commitments;
- Best management practices for environmental compliance, including but not limited to, erosion, sedimentation, and dust control measures to maintain water and air quality;
- Required mitigation measures;
- Compliance responsibility and governmental entity authority;
- Procedures and precautions in the event of spills or discovery of hazardous materials, unknown chemicals, or contamination;
- Procedures and precautions in the event skeletal remains or other archeological or paleontological resources are discovered;

- Procedures and precautions in the event of karst void/cave discovery;
- Edwards aquifer rules and groundwater protection requirements;
- Clean Water Act regulations, Rivers and Harbors Act regulations, and surface water protection requirements;
- Overview of noise and residential impact reduction procedures;
- Air quality and dust control requirements; and
- Penalties and/or fines for noncompliance with environmental requirements and laws. Failure to comply could result in termination of employment.

State DOT Implementation

For compliance with environmental commitments, WSDOT requires a full-time environmental compliance manager, a full-time environmental compliance inspector, and environmental training for all staff on the project site before they are allowed to be on site.

CDOT noted, during the interview, that in response to an issue related to disturbance of a historic resource, it added a training element in its standard contract language to educate the D-B contractor about potential resources and what to do when something unknown is discovered.

Applicable Case Studies

- Harbor Bridge Project
- Alaskan Way Viaduct

State DOTs provide access to extensive environmental training; however, for some states these trainings are not required to propose on D-B projects and are not listed in the RFP or D-B contracts.

Replicability of the Practice

All personnel involved in project design and construction should be required to receive environmental training. Trainings can be offered online and with live instructor-led courses for DOT staff, consultants, contractors, and cooperating agencies. Environmental training provides participants with a comprehensive overview of the state DOT's environmental process and procedures.

More specifically, states indicated that it was important that onsite training be specific to the project area. Contractors are required to develop the training plan, which the state DOT would then approve. All staff (including both design and construction staff) entering the project site should understand the sensitive areas and the environmental commitments. The recommended minimum training includes environmental compliance (i.e., mitigation tracking), as well as resource-specific topics including Section 4(f) training to make sure the contractor understands reasons that a park or historic resource must be protected in a certain way (e.g., to maintain the *de minimis* finding).

1.5 ASSIGN THE COST OF REEVALUATION TO CONTRACTORS

Regardless of project delivery method, changes to the proposed project design, project boundaries, configurations, and/or easements can require a reevaluation under NEPA. Nearly all states interviewed noted that reevaluations were common due to the innovative nature of P3 and D-B projects; however, MnDOT was noted as an exception in that its FHWA division discourages reevaluations. In some cases, the reevaluations are required because a project has been cleared and then shelved prior to being identified as a potential D-B or P3 project; in others, the reevaluation is due to changes in environmental

impacts introduced under a contractor’s proposed alternative technical concept. Although the state DOTs interviewed universally stated that RFPs and contracting documents for D-B and P3 projects included provisions for the contractor or development entity to bear the cost of permit modifications, states varied in how reevaluations were conducted and who bore the cost.

Evidence in Literature

Although literature reviewed did not include the identification of state DOT cost allocation for reevaluations, the literature covered important elements of reevaluations. Because state DOTs delegate responsibilities for final design to the D-B contractor, the state DOT may also choose to delegate certain aspects of quality control and/or quality assurance, third-party coordination, and construction oversight, while considering possible risks and associated costs of allocating these additional tasks of the project (University of Colorado 2005). Additionally, *Effect of Public-Private Partnerships and Nontraditional Procurement Processes on Highway Planning, Environmental Review, and Collaborative Decision Making* (Parsons Brinkerhoff et al. 2015) notes that a private partner’s willingness to offer an alternative technical concept may also depend on how the risk of additional environmental analysis is to be allocated. The report acknowledges that the public sector has a high tolerance for the risk of reevaluation compared to private developers because it does not operate within the same financial restrictions. Private-sector partners must operate within a time-constrained environment and consider their tolerance for long project gestation periods or delays that could result from reevaluation (Parsons Brinkerhoff et al. 2015).

State DOT Implementation

TxDOT and FDOT both have NEPA assignment under 23 USC 327.⁶

Based on interviews with TxDOT and FDOT, having NEPA assignment enhances their abilities to assign all of the responsibility for preparing reevaluations to the D-B contractor. Although NEPA assignment is not required to assign the responsibility for preparing reevaluations to the D-B contractor, state DOTs with NEPA assignment do not coordinate with FHWA for approval. The contractor, through its environmental consultant, would generate any technical documents required for a NEPA reevaluation, and the districts would compile the technical content into a reevaluation document and send to their central environmental divisions for approval. FDOT indicated that, although there are times when the district may put in a little more effort to get the document ready for the central environmental division’s review, in general, the D-B contractor undertakes the majority of the work associated with a reevaluation.

Applicable Case Studies

- US 36 Express Lanes
- Montana Rest Area Replacement
- Exit 131 Reconstruction
- Rapid Bridge Replacement
- Harbor Bridge Project

States that do not have NEPA assignment must conduct any reevaluations to be approved by FHWA. Among the state DOTs interviewed, those without NEPA assignment seem to vary in their ability to assign the responsibility for work to D-B contractors or P3 development entities based on direction from their FHWA division. For example, GDOT stated that its division requires all activities associated with

⁶ For this report, “NEPA assignment” refers to a state DOT that has assumed FHWA’s responsibility for compliance with NEPA and other federal environmental laws addressed in the environmental review process. Under NEPA assignment, FHWA no longer has a project-level environmental decision-making role in the administration of the state DOT environmental program, but instead transitions to a program oversight role in ensuring federal requirements and commitments made by the state in the MOU are met through audits and/or monitoring.

NEPA and reevaluations to be conducted by the department, and MnDOT's FHWA division discourages reevaluations under NEPA. WSDOT follows its "Delegation of Environmental Permits and Approvals for WSDOT Design-Build Projects," which states that D-B contractors must not prepare the NEPA document or have any decision-making responsibility with respect to the NEPA process.

Several states indicated that they put some responsibility for the technical content of the reevaluations on the contractor or development entity. For example, MoDOT indicated that it works with FHWA to conduct a reevaluation when there are changes to the environmental commitments. MoDOT requires the contractor to provide technical information so that MoDOT can generate the reevaluation for FHWA approval. Other states, including ADOT, CDOT, MDT, and NYSDOT, stated that the D-B contractor is responsible for additional content that would be submitted to the department to be submitted to FHWA for reevaluation. The D-B contractor is also responsible for putting the content into the appropriate reevaluation format. The DOT's environmental office reviews that content and submits the reevaluation package for FHWA approval.

PennDOT noted that the majority of its program is categorically excluded. PennDOT uses a computer-based system to document categorical exclusions and uses the same system to document reevaluations. VDOT uses a yes/no reevaluation checklist for meeting the NEPA criteria. NCDOT uses a merger process involving various resource agencies to support agency coordination during the NEPA process. If a proposed change on a D-B or P3 project would substantially affect the decisions made during the merger concurrence points, the merger process may have to be reinitiated during the reevaluation process.

The technical provisions of the RFP are the means used to allocate the responsibility for the cost of reevaluations. These technical provisions stipulate that, if the contractor's or development entity's work results in changes to environmental impacts as outlined in the NEPA document, the contractor or development entity is responsible for providing the state DOT with all of the necessary documentation to complete the reevaluation and undertake any additional agency coordination.

Replicability of the Practice

Replicability of this practice may depend on factors outside of the state DOT's control. For example, where FHWA divisions require the state DOT to conduct every aspect of a reevaluation, it is not possible to assign responsibility for generating technical content in support of the reevaluation to contractors or development entities.

This practice could be implemented for the state's alternative delivery program if the state DOT has NEPA assignment or if the FHWA division will accept contractor or development entity input for the reevaluation process. In these cases, state DOTs could determine what level of input to accept from the contractor (e.g., technical reports or reevaluation forms) and include that language in the RFP. For example, requiring the contractors to either provide technical reports in support of a reevaluation or completing reevaluation forms can save state DOTs time and resources.

1.6 DEVELOP INCENTIVES SPECIFIC TO ENVIRONMENTAL COMMITMENTS

Incentives specific to environmental commitments were used in several states with mature D-B programs. These state DOTs highlight the importance of environmental compliance either in procurement or during construction. In RFPs, some states allocate scoring criteria related to compliance with environmental commitments. This practice, which allows contractors to understand how environmental compliance performance is evaluated, may result in proposals that emphasize environmental compliance. Other states

identify money that would be available to the contractor or development entity as a measure of performance related to compliance with environmental commitments. The use of incentives may motivate the contractor or development entity to elevate the importance of environmental compliance.

Evidence in Literature

Implementing monetary incentives has been successful for D-B and other alternative delivery methods (e.g., P3s). Payment mechanisms generally include penalty points, resulting in payment deductions or retentions. State DOTs must balance instituting these penalties that may affect working relationships with their contractors to include a provision for incentive payments to the D-B contractors for reducing impacts to the environmentally sensitive areas within the project boundaries (i.e., to reduce the level of impact previously approved by the regulatory agencies during the permitting process) (FHWA 2016).

An example of using financial incentives/payment mechanisms was found on the I-595 Corridor Roadway Improvements project in *Successful Practices for P3s* (FHWA and Build America Transportation Investment Center 2016). The FDOT project's performance-based availability payments are available monthly with a specified maximum annual availability payment. FDOT has a payment mechanism that includes the formulas that are used to calculate the adjustments and resulting monthly availability payments (FHWA and Build America Transportation Investment Center 2016).

ADOT employed a quality workmanship program during the Davis Dam project with a maximum \$500,000 incentive to be paid to the contractor once the earned amount was determined based on checklist and performance criteria. In the RFP documents, ADOT provided bidders with a detailed construction inspection checklist and assigned a criticality goal percentage to provide a quantitative reference for payment of incentives (Louis Berger 2005). During this project, the contractor earned approximately 96 percent of the available incentive award based on performance and listed expectations.

U.S. Army Corps of Engineers' (USACE) concern for wetlands that would be disturbed by US 113 Dualization (Maryland State Highway Administration) were addressed via the use of a monetary incentive in D-B contracts for \$35,000 per acre for each acre of reduced wetland impacts below the amount allowed by the Section 404 permit, described in *NCHRP 25-25, Task 12: Design-Build Environmental Compliance Process and Level of Detail: Eight Case Studies* (Louis Berger 2005). As a result of this incentive, wetlands impacts were reduced by about 2.34 acres (25 percent of the USACE-approved wetlands impact area).

NCDOT added incentives to the D-B RFP for the U.S. 64 Knightdale Bypass and Knightdale Connector/Eastern Wake Expressway that encouraged the further reduction of impacts to the environmentally sensitive areas within the project boundaries. Incentive payments included \$75,000 per acre for any reductions in wetland impacts or impacts to riparian buffer areas as well as \$500 per linear foot for

Criteria and Maximum Possible Award

- Maintaining positive relationships with resource agencies (\$50,000)
- Avoiding and minimizing impacts to sensitive areas (\$150,000)
- Provide needed environmental clearances timely (\$50,000)
- Wash equipment prior to bringing onto project site (\$50,000)
- Implement and maintain best management practices for temporary erosion control (\$150,000)
- Provide additional noise reduction measures during construction (\$50,000)

Source: Caltrans 2008.

reduction of stream impacts (Louis Berger 2005). Incentives were also used during final design to encourage development of innovative approaches to minimize impacts on environmentally sensitive areas, which would qualify for an additional one-time bonus of up to \$50,000 if they could be implemented for future NCDOT projects. During the interview with NCDOT, staff noted that the state has since moved away from using these incentives as its D-B program has matured.

Additionally, a review of the California DOT (Caltrans) D-B program revealed that Caltrans conducted its own assessment of state DOT D-B programs. Table 9 in the Caltrans D-B manual (see text box above) provides a sample breakdown of incentive awards and criteria for environmental compliance.

State DOT Implementation

WSDOT and TxDOT indicated in RFP documents that environmental commitments were important and that bidders who demonstrated innovative techniques to minimize environmental impacts would be rewarded.

For incentives specific to environmental commitment compliance, WSDOT assigns technical credits to proposals that include provisions to reduce environmental impacts beyond the measures identified in the NEPA document. The technical credits, in effect, reduce the overall price proposed by the contractor. When the bids are opened, the price will come in with technical credit, and the technical credits are subtracted from the bid amount.

Applicable Case Studies

- Harbor Bridge Project
- Alaskan Way Viaduct

During the interview, WSDOT noted that it usually incentivizes compliance during construction rather than avoiding previously cleared impacts. If the contractor proposes a dedicated staff to address erosion control issues and correct deficient issues that need attention, the contractor then receives more technical credits. The proposal must be above and beyond what the contract requires. For example, a higher quality erosion blanket or repairing within 24 hours are items that could receive technical credits. This was particularly important on the Alaskan Way Viaduct, where the winning contractor, Seattle Tunnel Partners, proposed a higher price than the competing contractor but succeeded through technical credits. Environmental technical credits on that project were awarded for approaches to management of the project section, which included plans for management of environmental compliance, approaches for excavation and support of bored tunnel, and management of ground deformation impacts.

An incentive award with a maximum allowance that is included in a RFP can be further delineated by assigning a specific amount to a specific criteria for D-B project tasks or goals to achieve environmental compliance and earn extra compensation for those goals.

For the Harbor Bridge project, TxDOT integrated FHWA's Infrastructure Voluntary Evaluation Sustainability Tool (INVEST) program into the bidding process and let that be part of the scoring criteria for developer selection. The RFP indicated that the state DOT would seek a Silver rating on operations and maintenance, but the bidder proposed an approach that would enable the project to receive a Platinum rating. Under TxDOT's best value approach, this contractor was selected. That incentivized the bidding team to support TxDOT's efforts to achieve Platinum status for the project. TxDOT also uses incentives to encourage contractors to avoid certain violations. Contractors may also receive certain small bonuses (e.g., \$200,000) if they meet additional environmental performance metrics above the requirement. These performance metrics apply to highly environmentally sensitive, high-priority projects.

In the technical proposal, NCDOT inquires how the contractor can reduce environmental impacts, and the team is scored on its answer. In the past, incentives were provided if no notice of violations were received (a monetary reward) and then a violation would be reduced from their award amount. However, this approach raised questions about why the agency was rewarding contractors for “doing their job.” Additionally, if a contractor has a history of extensive violations, it would not be considered for future contracts.

Replicability of the Practice

Incentives related to environmental commitments and compliance with those commitments take two forms: technical credits assigned to contractors during the RFP phase and funding available post-award to foster an atmosphere of environmental compliance. Both use of monetary incentives and technical credits would need to be implemented on a programmatic level to establish criteria under which these incentives could be considered and to apply the amount of money in a uniform way (either a certain dollar amount or percentage of the contract) within a DOT.

Technical credits may be used during the RFP phase when there is a specific environmental impact that must be avoided or minimized. These technical credits would not involve the exchange of money, rather be treated as “credits” toward the contractor’s final bid to make it appear as if costs were reduced to make the bid more competitive against other bids that did not undertake the environmental challenge. Where this is in use, the DOT finds the use of technical credits to be effective in that contractors have a financial incentive to demonstrate minimized impacts to environmental resources. WSDOT indicates that regions have flexibility and autonomy to implement the use of technical credits. Technical credits are not used on every project—the use depends on the risks associated with a specific project. Although the use of technical credits is replicable on a project basis, consideration of technical credits would need to be implemented at the program level to establish uniform guidance with regard to RFP language and implementation.

Post-award environmental incentives are more rarely used by DOTs. Under this approach, state DOTs offer a monetary bonus for going above and beyond contract requirements. The support for this approach is mixed. The research team found that one state DOT had moved away from the use of post-award incentives because of the perception of paying contractors additional money to “do their job.” In another case, a state DOT stressed that it sought to incentivize the identification and resolution of non-compliance events to minimize violations or penalties from the resource agencies and would use post-award incentives on high-risk projects, such as those projects that extended multiple seasons or opened soil over several miles at one time. In this case, the use of post-award incentives rewarded the use of a separate environmental inspection crew to address erosion control more often than the permit required. Such use of a post-award incentive may send a message to bidders that particular issues are critical to the state DOT.

1.7 ASSIGN BOTTOM-LINE RESPONSIBILITY FOR ENVIRONMENTAL COMPLIANCE MONITORING

Use of an ECM was recommended by several of the state DOTs interviewed. The ECM is responsible for monitoring environmental commitments and permit requirements, performing site visits, investigating incidents related to environmental commitments, ensuring that appropriate steps are taken when non-compliance is uncovered, and closing out environmental commitments appropriately following construction. Assigning bottom-line responsibility for environmental compliance was recommended as a successful practice even when combined with other tools (including database tools). Assigning a single

point of contact improved communication and ensured that a single point of contact could be held accountable for ensuring that environmental monitoring was appropriately conducted over the life of the project.

Evidence in Literature

In *NCHRP 25-25, Task 12: Design-Build Environmental Compliance Process and Level of Detail: Eight Case Studies* (Louis Berger 2005), many of the design-build projects included in the case studies included an independent entity to ensure environmental compliance and to assume responsibility for reporting to the state DOT on environmental issues in order to minimize violations. For example, CDOT required the contractor to supply an onsite ECM to provide regulatory plans Transportation Expansion (T-REX) Multi-Modal Project. TxDOT required the contractor to provide environmental compliance inspectors to monitor all activities to ensure compliance with environmental permits. Environmental staff from both TxDOT and the contractor also conducted spot checks to ensure construction complied with applicable environmental permits (Louis Berger 2005).

Applicable Case Studies

- US 36 Express Lanes
- I-35W Minnesota River Bridge
- Montana Rest Area Replacement
- Rapid Bridge Replacement
- Alaskan Way Viaduct

Agencies indicated that assigning an independent environmental monitor on D-B projects alleviated agencies' anxiety that contractors may not comply with the conditions of the permit in *NCHRP 25-25, Task 25: Modification and Amendment of Environmental Permits on Design-Build Projects*. Agencies also indicated that a single point of contact was desirable during the permitting process to expedite communication. Agencies expressed some concern about the use of out-of-state contractors because of the contractors' lack of knowledge with regard to local and regional permitting practices, and because an out-of-state contractor may not be as motivated to preserve a positive working relationship with regulatory agencies (Louis Berger 2007).

NCHRP 25-25, Task 25 also highlights the experience of the Maryland State Highway Administration, which hired an independent environmental monitor to be present on the site daily for the US 113 Dualization D-B project. USACE required the environmental monitor as a special condition of the Section 404 permit, and the person was named in contract documents as a conduit between the agencies and the contractor to facilitate permit modifications. The Maryland State Highway Administration indicated that the environmental monitor was a valuable resource during the D-B process, and the agency has adopted regular use of the environmental monitor for other projects (Louis Berger 2007).

State DOT Implementation

Many of the states interviewed indicated that it was common to require contractors to assign an individual to serve as ECM to oversee environmental commitments. Some state DOTs indicated that they would also use in-house staff or hire an independent consultant to ensure compliance.

Both TxDOT and PennDOT have required contractors to provide an ECM with a team of inspectors that specialize in different resources, including biology, hazardous materials, and archaeology. These are often subcontractors, but with substantial oversight from TxDOT. Contractors provide an ECM for D-B projects for both CDOT and WSDOT, the requirements for which are specified in state DOT RFP templates. The template also specifies the duties and requirements for the ECM. MDT generally allows the complexity and the number of the expected environmental commitments to determine whether a specially designated ECM is warranted; representatives indicate that the need for an ECM is the exception rather than the rule.

Key Considerations for an Environmental Compliance Monitor:

- Local experience
- Either DOT or consultants may be used
- Clearly defined responsibilities for the role

On the US 36 Express Lanes project, CDOT required the development entity to hire a full-time environmental manager for all Phase 2 construction work. The environmental manager was required to lead a field review with CDOT environmental staff to discuss environmental issues every month during active construction periods and had the authority to stop construction if work activities violated environmental laws or policy or jeopardized human health and safety. For the I-35 Minnesota River Bridge project, MnDOT identified the ECM as the responsible party for all communications between environmental regulatory agencies and the Minnesota Historic Preservation Office.

DDOT highlighted its use of two points of inspection to ensure compliance; the state DOT provides an ECM to ensure compliance and, for larger projects, the state DOT will also require the contractor to assign staff to oversee environmental compliance. This is similar to the approach identified by PennDOT, which requires the contractor to assign its own environmental contractor; PennDOT typically hires an independent consultant to ensure compliance. NYSDOT also maintains a quality assurance team that performs quality assurance on environmental commitments. In some cases, this level of oversight may result in a double inspection, but the process has helped NYSDOT avoid citations or negative assessments by regulatory agencies. The quality assurance team may include either NYSDOT staff or a consultant. WSDOT similarly requires the D-B contractor to appoint an environmental manager.

VDOT has developed a framework that can be used by the District Environmental Manager to determine whether an environmental commitment inspector is needed to ensure that environmental commitments are followed. These are generally full-time employees, but consultants may also be used. VDOT also requires the contractor to provide an ECM whose responsibilities are specified in the RFP.

Replicability of the Practice

The practice of establishing bottom-line responsibility for environmental compliance can be done on a project-by-project basis, but the qualifications required for an appropriate ECM should be established at a programmatic level. An environmental compliance monitor may be appropriate for projects located in states where resources are of concern, such as water quality. One state that was particularly concerned with water quality permits required an ECM on all reporting permits (including those administered by the Department of Environmental Quality or USACE), and only recommended an ECM on nationwide permits where preconstruction notification to USACE is not required. The role was not required for projects without water quality permits. Other states found that it was useful to assign an ECM when using alternative project delivery methods for the first time because it ensured that environmental commitments

were followed when overseen by contractors new to the process. For entire D-B programs, such as the PennDOT rapid bridge replacement, appointing a single person to be responsible for all environmental compliance can ensure that compliance remains a priority even when operating under an accelerated schedule. In cases where an ECM had been assigned, states indicated that assigning a single point of contact to track communication related to environmental compliance was an effective tool to support D-B projects.

Key functions of ECMs include the following:

- Serve as the project representative and relay pertinent project information as appropriate
- Review project-specific commitments reports, permits, special provisions, permit sketches, plan sheets, maps, miscellaneous guidance documents, project contact information, etc. prior to the pre-construction meeting
- Attend pre-construction meetings for all assigned projects; confirm at the pre-construction meeting that all project environmental commitments are current and accurate and answer any questions related to environmental commitments; and notify the appropriate parties of any discrepancies
- Conduct site visits at an agreed-upon frequency
- Investigate (and/or coordinate with other environmental staff) incidents related to environmental commitments and permitting requirements, including erosion control and stormwater management issues reported on projects
- Communicate findings with construction staff while on site along with necessary steps to remedy any non-compliant findings
- Complete commitments performance reporting in appropriate reporting tools within a set period of time following the actual inspection date (site visit) and request appropriate approval for findings of non-compliance
- Conduct follow-up visits per departmental guidance to confirm corrective action measures are being implemented to address findings of non-compliance
- Provide the DOT and contractor's construction teams with technical assistance when assigned
- Follow all safety protocols
- Participate in regulatory coordination
- Follow established reporting protocol in collaboration with the National Pollutant Discharge and Elimination System
- Coordinate the closure of commitments in the database once inspections are no longer required

In addition to the general function requirements, clearly identifying the necessary experience for a person filling this role is critical. Several state DOTs indicated that they require ECMs to have local experience to enter the role, and they must have a basic understanding of the key resources present in the project area. One representative from a state DOT indicated that non-local personnel sometimes required

additional training in order to successfully fulfil the position requirements, which represented an additional cost in the form of staff time for the state DOT.

ALLOCATION OF RESPONSIBILITY AND MANAGEMENT OF RISK

An important aspect of alternative delivery projects is allocation of responsibility between the state DOT and the development entity or contractor and the management of risk associated with shared responsibility. Regarding environmental commitments, state DOTs vary in the level of responsibility they are willing or allowed to allocate. State DOTs generally retain responsibility for conducting the NEPA process and for coordinating with FHWA to determine when reevaluations are warranted. One exception was the PennDOT Rapid Bridge Replacement program—PennDOT received a special, experimental project designation from FHWA that allowed the development entity to also prepare the NEPA documentation (i.e., categorical exclusions); however, PennDOT and FHWA still had to review and approve the NEPA documents. State DOTs typically assign the contractor or development entity the responsibility of obtaining permits. For alternative delivery projects, the DOT is typically the applicant/owner on the permit applications, and, in most cases, although the contractor or development entity is responsible for obtaining many of the environmental permits, the state DOTs are involved in coordination and communication with the resource agencies. During the interviews, most DOTs stated that the importance of their long-term relationships with resource agencies was a primary driver in their decision to maintain some involvement in the permitting process. PennDOT’s Rapid Bridge Replacement program is an exception in that the development entity was the initial permit applicant for the majority of the bridges and will transfer the permits and environmental approvals back to PennDOT at the end of the operation term. The technical provisions of the RFP note that “the permit/approvals cannot be transferred to the Department until the Development Entity proves that they have documentation that applicable agencies acknowledged/approved the completion of construction and mitigation under the permit and all NOV [notices of violation] /enforcement actions have been resolved.” Note that PennDOT engaged resource agencies as it developed its Rapid Bridge Replacement program to facilitate permit coordination at the program level.

WSDOT uses a “Delegation of Environmental Permits and Approvals for WSDOT Design-Build Projects” matrix to identify what WSDOT “must own” and what the D-B contractor “can own.” For example, even when WSDOT allocates the responsibility of preparing Section 404/401 permit applications to the D-B contractor, it is always listed as the owner/applicant and retains the responsibility to review and sign the applications. With regard to Section 106 coordination, the matrix notes that the contractor can assist WSDOT with project technical content to support WSDOT decision making; however, WSDOT’s programmatic agreement with its SHPO requires that a WSDOT cultural resources specialist either conduct cultural resource studies in-house or review all such studies done by consultants on behalf of FHWA, for approval. Only in three cases—Shorelines & Growth Management Act—Critical Areas; Shorelines & Growth Management Act—Critical Areas, Noise Variance/Exemption; and 402 Construction Stormwater General Permit National Pollutant Discharge Elimination System—may the D-B contractor be the permit owner/applicant. Having a detailed matrix that dictates responsibilities at the programmatic level helps to manage risk on individual projects by outlining what responsibilities may be considered and assigned to the contractor on an individual project basis and what responsibilities may never be assigned to the contractor.

The primary means for allocation of responsibility is the RFP. The technical provisions of the RFP specify the DOT and contractor/development entity responsibilities. This is also the primary instrument for the DOTs to manage risk. The DOT can outline how the contractor or development entity will manage the environmental approval process and demonstrate compliance with environmental commitments. Examples of the ways that DOTs manage risk through the RFP technical provisions include the following:

- Specified experience for the contractor's or development entity's environmental managers and staff
- Requirements for onsite environmental training
- List of deliverables the contractor or development entity must prepare and when they will be provided to the DOT
- Procedures to follow when violations occur
- Identifying bottom-line responsibility for environmental compliance

For example, deliverables identified in the I-35W Minnesota River Bridge RFP included a list of the contractor's environmental team qualifications and responsibilities, the contractor's environmental protection training program and training schedule, completed additional permit applications and permits as issued, resource management plans, schedule of anticipated environmental mitigation, the Environmental Management Plan, environmental notification contact list, and the contractor's health and safety plan for work with contaminated materials.

WSDOT requires onsite environmental training, the elements of which are outlined in text box above, for all staff on all D-B projects prior to allowing them on the project site. TxDOT requires environmental training for some alternative delivery projects. For the Harbor Bridge project, the RFP specified that the contractor is required to develop and implement an environmental protection training program. The program is required to educate every worker to: recognize the overall importance of environmental issues, including: constructing, operating, and maintaining a successful project; knowing the limits of regulated jurisdictional areas within and adjacent to construction areas; and understanding the various environmental sensitivities of the project.

State DOTs also use technical provisions in the RFP to outline how contractors and development entities should deal with permit violations. State DOTs understand that permit violations can occur and putting a process in place supports responsiveness. The technical provisions in the PennDOT Rapid Bridge Replacement RFP clearly place the responsibility of environmental compliance on the development entity, including documentation, identification and correction of violations, and permit closeout with USACE and the Pennsylvania Department of Environmental Protection. Additionally, the development

WSDOT Environmental Training Requirements:

- Permit conditions, performance standards, environmental contract requirements, and regulations
- Specific environmental issues
- Keeping high pH and turbid water from reaching surface water
- Recognizing high-visibility fencing and its purpose
- Erosion and sediment control procedures and certification
- Proper handling and disposal of concrete and waste products
- Environmental compliance monitoring and reporting procedures.
- Noise requirements
- SPCC Plan and location of spill response kits
- Management of known or suspected contamination
- Plan and procedures for management of unanticipated historic or archaeological discoveries
- Emergency response procedures

entity is responsible for all fines and penalties that may be assessed by a governmental entity with jurisdiction in connection with the development entity's failure to comply with applicable laws or environmental approvals, including, but not limited to, permit conditions, environmental commitments, and monitoring commitments listed in the Comprehensive Environmental Protection Plan. The RFP for the I-35W Minnesota River Bridge included a provision for weekly environmental monitoring reports that documented evidence of performance with regard to all environmental commitments, which included any permit violations. Compliance was required with permits and regulations that included the following:

- Clean Water Act Section 401—Water Quality Certification
- Clean Water Act Section 402—National Pollutant Discharge Elimination System
- Clean Water Act Section 404—Permits for Dredged or Fill Material
- Rivers and Harbors Act of 1899—Section 9 and Section 10
- Minnesota Wetland Conservation Act and Executive Orders
- DNR Public Water Permit MS 103G
- Minnesota Rules and Statutes
- Local watershed district or water management organization requirements

Additionally, MnDOT specified that its ECM was the first point of contact for all environmental issues. The technical provisions stated that “MnDOT will provide an Environmental Notification Contact List that includes all contact persons and reporting and notification requirements for unforeseen potential environmental impacts encountered during the course of the project. The MnDOT ECM will make all appropriate environmental notifications.”

TxDOT required the contractor to employ an ECM and environmental compliance inspectors for the Harbor Bridge project. Although the stated goal was zero violations, the technical provisions outlined the process to deal with any permit non-compliance and violations. The technical provisions state that “the ECM shall report immediately to TxDOT and Developer [contractor] any violation or non-compliance and shall include with any such report, the appropriate recommendations for corrective action including stoppage of Work.” TxDOT also specified the assessment of liquidated damages for violations.

One way to ensure the RFP technical provisions protect the DOT's level of risk is to use a template for environmental elements of the RFP. Additionally, use of a database to track environmental commitments can be used to ensure the RFP template is modified appropriately and to confirm compliance with environmental commitments as the project is completed. Finally, depending on the potential environmental impacts associated with a project, a state DOT may elect to have its own environmental staff or consultant stay on the project through design and construction to verify that the contractor or development entity complies with environmental commitments.

SUMMARY

Table 2 provides a summary of the replicability of each successful practice described in this report, including whether the practice is replicable at the program or project level and the approach to implement the practice. The research team developed this list based on feedback from officials from state DOTs and federal and state resource agencies, who highlighted these practices as noteworthy features of their states' alternative project delivery programs. The initial findings were validated based on contracting documents used for alternative project delivery and expanded using evidence from the literature. It is worth noting that five of the seven replicable, successful practices center on ensuring strong communication among the

contractor/development entity, agencies, and the state DOT. In general, the approach that many of the states appear to favor is to ensure compliance with environmental commitments by providing specific directions to the contractor or development entity through the RFP technical provisions. These technical provisions clearly allocate responsibilities between the state DOT and the contractor/development entity and allow the DOTs to manage the risk associated with assigning compliance with environmental commitments to another party.

Table 2. Replicability of Successful Practices for Communicating Environmental Commitments in P3 and D-B Contracts

| Successful Practice | Replicability |
|--|---|
| Establish interagency communication protocol for implementation of alternative delivery projects | This practice could be implemented for programmatic P3/D-B projects, or at the program level for all alternative delivery projects. Clear responsibilities, communication, critical coordination points, and decision-making procedures should be identified. This procedure can be used to ensure that resource agencies concerned are addressed early in the process, and communication proceeds in an orderly fashion. This practice also facilitates communication between many different resource agencies to ensure that all parties’ concerns are addressed at the same time. |
| Develop standardized environmental commitments element for D-B and P3 RFPs | This practice should be implemented at the program level. Standardized environmental elements incorporated into the RFP template would facilitate communication of environmental commitments. Additionally, incorporation of monitoring and reporting language into the RFP provides a way to ensure compliance with environmental commitments. |
| Use database tools to track environmental commitments | This practice should be implemented at the program level to foster communication of and compliance with environmental commitments. Using an online database tool that can be accessed by contractors, resource agencies, and state DOT staff ensures that current information about environmental commitments and compliance can be accessed in real time. It could also be implemented at the project level for projects with complex environmental impacts and related mitigation commitments. Although a spreadsheet tool may not have as up-to-date information, it has the advantage of being easy to deploy where a system is not currently in place. |
| Require environmental training for all onsite workers and visitors | This practice could be implemented at the program level or the project level. The practice would be most successful if implemented at the program level with the requirement for onsite environmental training included in the RFP; however, it could also be successfully implemented on projects where environmental impacts are of particular concern or the potential for permit violations is elevated because of local conditions. |
| Assign the cost of reevaluation to contractors | This practice could be implemented at the program level if the state DOT has NEPA assignment or if the FHWA division will accept D-B contractor input for the reevaluation process. In these cases, state DOTs could determine what level of input to accept from the contractor (e.g., technical reports or reevaluation forms) and include that language in the RFP. |

| Successful Practice | Replicability |
|---|--|
| Develop incentives specific to environmental commitments | This practice should be implemented at the program level. Although the use of technical credits is replicable on a project basis, consideration of technical credits must be implemented at the program level to establish uniform guidance with regard to RFP language and implementation. Similar to technical credits, although post-award incentives would be considered on a project-by-project basis, the use of monetary incentives must be implemented on a programmatic level to establish criteria under which these incentives could be considered and to apply the amount of money in a uniform way (either a certain dollar amount or a percentage of the contract) within a DOT. |
| Assign bottom-line responsibility for environmental compliance monitoring | This practice could be implemented at the project level when specific resource impacts or permit conditions are of particular concern. An Environmental Compliance Monitor may be warranted when certain permits are required, including water quality, cultural resources, hazardous material, air quality, or natural resources—the particular list may vary depending on the priorities in the state. However, the required qualifications for an ECM should be established at a programmatic level. |

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NCHRP 25-25, Task 109

Successful Practices for Environmental Commitments in Public-Private Partnerships (P3) and Design Build (D-B) Contracts

Appendix A: Literature Review

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INTRODUCTION

Many public-private partnership (P-3) projects incorporate the design-build (D-B) project delivery method wherein the architectural/ engineering services are combined with construction services into a single contract. The D-B method of project delivery is not exclusive to P-3 projects, but it is intended to save time, improve efficiency, allow for greater innovation, and promote effective coordination between the state DOT, the designer, and the contractor over the traditional design-bid-build delivery method.

P-3 and D-B contracting processes have been addressed in federal transportation legislation and regulations going back to the 1990s. In 23 CFR Part 636: Design-Build Contracting, FHWA describes its policies and procedures for approving D-B projects financed under title 23, United States Code (U.S.C.) in satisfaction of the requirement of Section 1307(c) of the Transportation Equity Act for the 21st Century (TEA-21, 1998). Section 1503 of the Safe, Accountable, Flexible and Efficient Transportation Act: A Legacy for Users (SAFETEA-LU, 2005) requires FHWA to modify its rules to allow state DOT D-B contracts to proceed through the preliminary design stage before completion of the NEPA process. Meanwhile, Section 1303 of the Moving Ahead for Progress in the 21st Century Act (MAP-21, 2012) recognizes another project delivery method by allowing state DOTs to enter into “two-phase contracts,” also known as construction manager/general contractor (CM/GC) contracts, prior to completing the NEPA process. Section 9001 of the Fixing America’s Surface Transportation Act (FAST Act, 2015) established the National Surface Transportation and Innovative Finance Bureau (Bureau) within USDOT. Among other responsibilities, the Bureau works with the USDOT modal administrations, eligible entities, and other public and private interests to develop and promote best practices for innovative financing and P-3s.

Despite these and other legislative and regulatory initiatives, and a body of practice that dates back to the early 1990s, concerns continue to be raised over the extent to which the public interest is protected in P-3 and D-B arrangements. Among these concerns is that the D-B method may overlook or not adequately address environmental commitments made by the state DOT during the NEPA process, or that revisions to the commitments may be required due to design modifications made by the P-3 or D-B contractor. Failure to comply with commitments made during the NEPA process can have profound consequences, such as project delays; detrimental effects on relationships between state DOTs and regulatory, land-managing, and tribal partners; and potential litigation.

P-3s are complicated contracts that often differ from project to project and from state to state. Such differences contribute to a lack of consistency and standardization in how P-3 concessionaires or D-B contractors follow through on environmental commitments made by state DOTs during the NEPA process for a particular project. In many cases, state DOTs complete the preliminary design and environmental work to obtain the necessary permit approvals to minimize risk to the D-B contractor and cost to themselves. Alternatively, state DOTs have completed the NEPA process prior to letting the D-B contract and then pass some or all of the permitting responsibilities to the D-B contractor. The D-B contractor is then responsible for post-permitting environmental compliance through completion of construction. P-3 arrangements also continue to evolve as public and private entities continually find new ways to innovate.

Although 23 CFR 636.109 (*How does the NEPA process relate the design-build procurement process?*) stipulates that the D-B contract must include appropriate provisions to ensure that all environmental and mitigation measures identified in the NEPA document will be implemented, 23 CFR 636.109 does not define “appropriate provisions” or state DOT processes to ensure consistent and unambiguous contract provisions related to environmental commitments and monitoring the implementation of such contract provisions.

METHODS

To identify potentially successful and replicable practices for ensuring that environmental commitments made in NEPA documents are kept by P-3 or D-B entities, the Louis Berger team reviewed available literature related to D-B and environmental compliance and conducted an assessment of State DOT websites to review alternative delivery manuals and guidelines. Table 1 presents the literature reviewed.

Table 1. Literature Reviewed

| Resource Title | Author/Entity | Publication Year |
|--|---|------------------|
| <u>Successful Practices for P3s</u> | FHWA and Build America Transportation Investment Center | 2016 |
| <u>NCHRP 25-25, Task 12: Design-Build Environmental Compliance Process and Level of Detail: Eight Case Studies</u> | NCHRP / Louis Berger | 2005 |
| <u>NCHRP Project 25-25, Task 25: Modification and Amendment of Environmental Permits on Design-Build Projects</u> | NCHRP / Louis Berger | 2007 |
| <u>NCHRP 20-07, Task 172: Recommended AASHTO Design-Build Procurement Guide</u> | NCHRP / University of Colorado | 2005 |
| <u>Guide for Design Management on Design-Build and Construction Manager/General Contractor Projects (Report 787)</u> | TRB / Edward Minchin, et al. | 2014 |
| <u>Design-Build Highway Projects: A Review of Practices and Experiences</u> | Texas A&M Transportation Institute | 2016 |
| <u>Effect of Public-Private Partnerships and Nontraditional Procurement Processes on Highway Planning, Environmental Review, and Collaborative Decision Making</u> | SHRP2 / PB with Nossman LLP HS Public Affairs | 2015 |

The Louis Berger team reviewed State DOT websites for the 50 states and the District of Columbia for the presence of a dedicated webpage for D-B, P-3, or alternative delivery and the presence of D-B, P-3, or other alternative delivery manuals or guidebooks. Where manuals, guidebooks, or guidelines were found, a key word search was conducted using the following terms: NEPA, environment, cultural (resource), historic, archaeological, paleontological, noise, species, stormwater, erosion, permit, commitment, compliance, monitor, and mitigation. Instances of these terms in the manuals, guidebooks, and guidelines were catalogued and used to identify practices and processes related to communication of post-NEPA and permitting commitments to the contractor and to monitoring contractor follow-through related to environmental commitments. Finally, the information gathered through the State DOT reviews, in combination with the researchers' familiarity with those states with current or recent notable P3 or D-B projects or programs, was used to identify potential interview candidates and to generate draft interview questions.

SUMMARY OF FINDINGS

LITERATURE REVIEW

Based on a review of the literature identified in Table 1, potentially replicable, successful practices with a focus on communicating post-NEPA and permitting environmental commitments and facilitation of compliance with environmental commitments have been identified.

- Solicitation of the assistance of environmental agencies early in the design process for their approval and coordination (interagency coordination), including merging the NEPA and 404 permitting processes.
- Selection of the D-B approach during the NEPA phase, followed by a Request for Proposals (RFP) that provides sufficient detail regarding the environmental conditions and commitments in relation to the finished product, without precluding innovation by the D-B Contractor.
- Selection of the D-B contractor based on best value to account for D-B contractor qualifications related to environmental compliance.
- Acquisition of the most critical permits by the State DOT for the highest risk activities prior to the issuance of the RFP, with responsibility transferred to the D-B contractor for any amendments and changes that must be approved by the sponsoring or regulatory agency.
- Inclusion of the conditions of the initial permits included in contract documents.
- Facilitation of positive working relationships among the State DOT, the resource agencies, and the D-B contractor.
 - Use of locally-based D-B contractors is typically preferred by regulatory agencies as they perceive out-of-state contractors lack local/regional knowledge and may not have a vested interest in maintaining a good relationship.
 - Establishment of a single point of contact between all agencies and the D-B contractor to facilitate communication during the permitting process.
 - Frequent meetings between the DOTs, contractors, and agencies is a positive way to keep agencies informed of changes and update to the projects, and regulatory agencies appreciated these open lines of communication.
- Co-location of staff to improve responsiveness, coordination, and interaction.
- Provision for a qualified on-site construction engineer or manager by either the State DOT, the D-B Contractor, or an independent entity to ensure environmental compliance and to be responsible for reporting to the State DOT on management plans and environmental issues to minimize violations and maximize compliance.
- Provision for incentive payments to the D-B contractor for the reduction of impacts to the environmentally sensitive areas within the project boundaries (i.e., in an effort to reduce the level of impact previously approved by the regulatory agencies during the permitting process).
- Stipulation in the RFP that environmental violation costs are the responsibility of the D-B contractor.

In addition to the overarching best practices, several unique (project-specific), potentially replicable practices related to communication of environmental commitments and monitoring contractor follow-through were identified. While these practices were employed on individual projects, they could be used to develop a “tool kit” for State DOTs to consider once a project has been identified as D-B.

- For projects identified as D-B early in the NEPA process, a predevelopment agreement can be used to incorporate suggested design changes from the private partner into the NEPA evaluation before the final decision. In this case, impacts from the design change and mitigation are addressed up front, which may ultimately reduce the need for expensive and time-consuming reevaluations.
- For projects with significant environmental impacts, include regulatory agency personnel in the preparation of the D-B RFP.
- Funding by the D-B contractor of a dedicated agency staff member to serve as the day-to-day agency permit coordination.
- Development of a “Mitigation Notebook” in advance of the RFP to further clarify mitigation measures defined in the NEPA document.
- Submittal of individual roadway segments to a regulatory agency for approval (and related permit modification as applicable), rather than waiting to complete the entire design. This allows for faster reviews and a “rolling” construction sequence.
- Use of an Environmental Management System, which mandates the D-B contractor to keep track of all impacts to resources (e.g., jurisdictional waters).
- Development of incentives for each resource encourage further reduction of impacts to environmentally sensitive areas within the project boundaries (e.g., \$75,000 per acre, or portion thereof, for reduction in wetland impacts) with special consideration for innovative approaches that could be implemented on future projects.
- Identification of measures that would support a goal of “zero violations”, such as requirements for on-site environmental compliance monitors, training, proactive communication with regulatory agencies.

These practices have been considered in the identification of State DOT interview candidates and the development of the State DOT interview questions to gather additional details related to transferability of these practices among other D-B projects.

STATE DOT REVIEW

State DOT guidance generally found that, in states where D-B and other alternative delivery was practiced, a Design-Build manual was generally present. In some limited cases, the D-B Manual would be supplemented by a shorter manual for alternative project delivery.

Alternative delivery manuals are generally rare. Where they do exist, they generally focus on contract provisions or identifying an optimal project for a project delivery method. Environmental considerations are not present in these manuals. In isolated cases, the DOT’s policy on incentives or disincentives is addressed.

Following are general observations from the key word search in the manuals, guidebooks, and guidelines.

NEPA – NEPA is referenced in approximately half the manuals. When it is referenced, it is typically included under sections that reference the DOT’s responsibility with regard to D-B. DOT typically retains responsibility for re-evaluation but makes the contractor responsible for those costs. Most states require the NEPA process to be complete prior to seeking federal authorization or issuing the RFP unless otherwise authorized by the FHWA.

Environment – Environmental compliance does not appear to be considered as an individual component of the D-B process. Environmental considerations are generally factored into project delivery selection; for example, where environmental impacts are known to be small or where environmental impacts are well understood, D-B may be recommended. Some states do not recommend D-B in cases where environmental impacts are not well-understood or where environmental impacts may be significant. DOT D-B manuals infrequently recommend the use of an Environmental Manager to oversee environmental compliance.

Cultural (resource), historic, archaeological, paleontological, noise, species, stormwater, and erosion – Resource terms are mentioned infrequently in the manuals. When technical requirements for the RFPs are mentioned, they may be listed when describing the DOT’s responsibility to identify mitigation requirements.

Permit – The responsibilities for permitting are frequently specified in D-B manuals. Generally, the responsibility for permitting falls to the DOT, which generally has a stronger relationship with local resource agencies. The contractor is often identified as being responsible for modifications to existing permits, along with any expense incurred as a result of the modifications.

Commitment – Environmental commitments are not well-characterized in D-B manuals. In isolated cases, the responsibility for fulfilling environmental commitments is identified as part of a risk allocation matrix (where such a matrix is present).

Compliance – Compliance is discussed in relation to meeting permit requirements. The manuals mention compliance related to the RFP and contracting documents in that they must provide sufficient detail about environmental conditions, commitments, and permit status to convey to the D-B contractor the risk associated with environmental compliance. Additionally, some manuals mention environmental compliance monitors and environmental compliance plans, which indicates a more robust D-B program that could include replicable practices to effectively communicate environmental commitments and monitor environmental compliance. In some cases, the manuals will identify the person or persons responsible for overseeing environmental compliance within the DOT and/or the contractor team.

Monitor – Monitoring is mentioned infrequently in the manuals, guidebook, and guidelines in relation to environmental compliance or contractor follow-through on environmental commitments. As noted above, while some manuals mention documentation of environmental compliance during project close-out, most manuals do not include a procedure for monitoring environmental compliance. As before, the manuals do occasionally identify the person or persons responsible for monitoring environmental concerns within the DOT and/or the contractor team.

Mitigation – Mitigation is discussed primarily in relation to risk assessment or transmittal of mitigation requirements outlined in the NEPA and permitting processes. The mitigation requirements are typically identified in the RFP, and communicated to the D-B contractor through the contract. When incentives are mentioned in relation to mitigation, they focus on a reduction of environmental impacts and mitigation requirements. Again, the manuals occasionally identify the person or persons responsible for implementing mitigation measures both during the project and after the project acceptance.

While the State DOTs generally do not include strong language with regard to communicating environmental commitments post-NEPA, there are several practices regarding environmental commitments that should be explored further through interviews:

1. Several states appear to more explicitly consider environmental guidance either in an RFP template or in RFP technical requirements. Several states provide these templates, which include the designation of an environmental team, requirements for an environmental compliance program, establishing thresholds for noise impacts, identifying cases where failure to submit mitigation plans, final documentation for the project, and the expectation for communicating environmental commitments.
2. Programmatic agreements (used for the Pennsylvania Rapid Bridge Replacement Project) and project-specific agreements communicate environmental commitments more explicitly than manuals. While this approach may reserve some flexibility for project- or program-specific environmental considerations, it would not lend itself to replicability (either within the DOT or among DOTs). These provisions include designation of an environmental team, required experience for key staff members, transfer of permits, requirements for an environmental program, and the responsibility for mitigation requirements.
3. The DOTs may apply expectations related to environmental commitments, compliance, and monitoring in other documents commonly used in project development (e.g., environmental manuals). In some cases, the D-B manuals reference environmental manuals typically used for design-bid-build.

State DOT review summaries are provided in Appendix B of the Final Report.

NCHRP 25-25, Task 109

Successful Practices for Environmental Commitments in
Public-Private Partnerships (P3) and Design Build (D-B)
Contracts

Appendix B: State DOT Review Summaries

Alabama

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. Nothing was found on the ALDOT page, and the Alabama Toll Road, Bridge and Tunnel Authority does not have a website.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Alaska

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes

http://dot.alaska.gov/comm/design_build.shtml

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes

<http://dot.alaska.gov/comm/assets/DB/Chapters.pdf>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------|--|
| NEPA | <p>Under FHWA involvement: DOT&PF (Department of Transportation & Public Facilities), through FHWA stewardship, is responsible for projects. NEPA processes are required to be finalized and approved by FHWA prior to project advertisement. However, under certain circumstances, FHWA will authorize design and construction for the project, and obligate the funds, before advertisement as long as these federal activities are conditioned on getting final NEPA action before awarding the contract and acquiring any right-of-way. The amount of funding obligated will be based on DOT&PF's best estimate. DOT&PF has determined that federal funding obligations are not required to advertise the project; however, it will be required to prior to requesting Final Proposals.</p> <p>Under Noise: The NEPA process may require a noise study to describe project impacts and required mitigation measures. Acquiring environmental approvals is the Department's responsibility and determining the noise impacts of the project may be part of that process. Maintaining a balance between fulfilling regulatory requirements, allocating risk, and losing innovation benefits requires modification to the typical DOT&PF environmental process. One means of accomplishing this balance involves using an assumed alignment, rather than a final alignment configuration, for the noise study and environmental applications. Calculate the impact to receivers based on an assumed alignment and document the required mitigation based on the assumed parameters. Prepare the Noise Technical Report, which documents the allowable impact to receivers, the analysis assumptions (including profiles and alignments), and the required mitigation measures to gain NEPA approval.</p> <p>Under Conduct NEPA Processes: The NEPA process requires definition of major project features. In the design-bid-build process, the Department conducts the studies, prepares the documents, and applies for the appropriate clearances. This ensures that the clearances are received and general mitigation requirements are known before the project proceeds. The role of the Department does not change when using the design-build delivery method. FHWA has defined the approval of the environmental document (EA/EIS) to be the formal approval for design-build.</p> |

| Keyword | Presence |
|-------------|--|
| Environment | <p data-bbox="488 233 1179 260">Under DOT&PF's Position on Basic Design-Build Elements:</p> <ul data-bbox="537 270 1435 1226" style="list-style-type: none"> <li data-bbox="537 270 1435 758">• Environmental. DOT&PF will obtain environmental clearances required for permanent project features, or for known temporary construction impacts. DOT&PF is responsible for complying with state and federal requirements and must be signatory on many documents, such as records of decision and permit applications. Although design-builders must provide information to support a permit application, they cannot control the actions or timing of third party regulatory agencies. For most projects, DOT&PF should provide allowances for the required application time as the resulting risks to the design-builder could be significant and could result in higher proposal prices. However, permits required for construction trades or for temporary construction impacts of convenience will be assigned to the design-builder. The intent is to provide sufficient permits to construct the department's conceptual design. <li data-bbox="537 768 1435 974">• Detail. In general, DOT&PF should have minimal involvement in project design. Environmental requirements and risk definition may require DOT&PF to carry some portions of the design further than others. If DOT&PF develops the project too far, then the opportunity to innovate and/or save time and possibly money may be reduced significantly or lost. <li data-bbox="537 984 1435 1226">• Unforeseen Conditions. Unexpected conditions arising during contract execution will remain DOT&PF's responsibility and should be treated as changed conditions. Examples include differing site conditions, hazardous materials, cultural resource sites, endangered species, or other environmental issues. The department will develop, direct, manage, and monitor the performance of any mitigation plans required by the discovery. <p data-bbox="488 1268 672 1295">Under Process:</p> <p data-bbox="488 1306 1435 1512">As shown on the process chart, DOT&PF will usually retain such high-risk areas as environmental studies, public involvement, right-of-way acquisition, and interagency agreements. By allocating these risks to the department, all tasks associated with the preparation of the basic project conceptual design (design decisions) still belong to the department. Thus, design-builder creativity options are normally limited to final design and construction.</p> <p data-bbox="488 1554 834 1581">Under Completion Schedule:</p> <p data-bbox="488 1591 1435 1724">If there are outside constraints which could impact project delivery (environmental permits, extensive right of way acquisition, complex third party agreements) then it is possible that delays in addressing these constraints could eliminate any potential schedule advantage from design-build.</p> <p data-bbox="488 1766 813 1793">Under Assess Project Risks:</p> |

| Keyword | Presence |
|---------|---|
| | <ul style="list-style-type: none"> • High-risk items that will usually remain the responsibility of DOT&PF and must be addressed prior to awarding a design-build contract include: Environmental studies • DOT&PF will also normally maintain responsibility in high-risk areas during execution of the contract. If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required. <p>Under the example risk allocation matrix: Suspension of any environmental approval (included under 'Force majeure/acts of god')</p> <p>Under Plan the Project:</p> <ul style="list-style-type: none"> • Research and confirm the availability of DOT&PF specialty groups, such as geotechnical exploration, environmental, and right of way acquisition, as these areas are important and may be critical to the execution of the project. • Some of the required project technical areas may not be easily expedited or reduced in scope (for example, environmental processes and right of way procurement) as they involve outside parties. • When considering the time to prepare a project for advertisement using design-build contracting, start with a typical duration of four to six months. The technical and administrative functions of creating the RFP package should be manageable within this timeframe using the generic documents and the processes defined in this guidebook. However, environmental processes and acquisition of right of way must be considered separately. <p>Under Collect Base Data:</p> <ul style="list-style-type: none"> • Mapping and preliminary surveys, environmental studies, hydraulic analysis, and geotechnical investigations, among others, will address significant unknown issues of a project. <p>Under Traffic:</p> <ul style="list-style-type: none"> • DOT&PF will perform some of the tasks described as part of the environmental process or allocate them to the design-builder. <p>Under Noise:</p> <ul style="list-style-type: none"> • The NEPA process may require a noise study to describe project impacts and required mitigation measures. Acquiring environmental approvals is the Department's responsibility and determining the noise impacts of the project may be part of that process. Maintaining a balance between fulfilling regulatory requirements, allocating risk, and losing innovation |

| Keyword | Presence |
|---------------------|---|
| | <p>benefits requires modification to the typical DOT&PF environmental process.</p> <p>Under Environmental:</p> <ul style="list-style-type: none"> • Project permits present another project delivery hurdle. Even after receiving official approval of the environmental document, it is necessary to obtain a variety of permits for project impacts and construction activities • These provisions require that the design-builder be responsible for compliance with all permits and environmental regulations • In addition to data collection for specific design elements, a minimum level of development is required in support of the environmental process to provide a complete description of the final project, using conceptual designs if needed. • In place of submitting a completed design or study to obtain the environmental approvals, provide a description of the design criteria that define the contract requirements in the Scope Of Work of the RFP that the design-builder has to meet <p>Under Conduct NEPA Processes:</p> <ul style="list-style-type: none"> • FHWA has defined the approval of the environmental document (EA/EIS) to be the formal approval for design-build. <p>Under Formulation of RFP Package:</p> <ul style="list-style-type: none"> • Project Specific Reference Materials defined in the Scope of Work and included in the RFP Package to define project requirements or provide gathered data. Types of references materials may include: maps, traffic forecasts, technical reports, design details, and environmental documentation. <p>Under Prepare Project Description:</p> <ul style="list-style-type: none"> • Describe third party issues such as right-of-way acquisition, utility relocations, environmental mitigation, railroad facilities, and public information to provide the Proposers with a complete view of the Department’s expectations. |
| Cultural (resource) | <p>Under DOT&PF’s Position on Basic Design-Build Elements:</p> <ul style="list-style-type: none"> • Examples include differing site conditions, hazardous materials, cultural resource sites, endangered species, or other environmental issues. <p>Under Assess Project Risks:</p> <ul style="list-style-type: none"> • If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, |

| Keyword | Presence |
|-----------------|--|
| | direct, manage, and monitor the performance of any mitigation plans required. |
| Historic | No |
| Archaeological | Under assignment of risk, 'force majeure' category |
| Paleontological | Under assignment of risk, 'force majeure' category |
| Noise | <p>Accurate traffic data is necessary for: Noise studies</p> <p>Under Noise:</p> <ul style="list-style-type: none"> • The NEPA process may require a noise study to describe project impacts and required mitigation measures. Acquiring environmental approvals is the Department's responsibility and determining the noise impacts of the project may be part of that process. • One means of accomplishing this balance involves using an assumed alignment, rather than a final alignment configuration, for the noise study and environmental applications. • Prepare the Noise Technical Report, which documents the allowable impact to receivers, the analysis assumptions (including profiles and alignments), and the required mitigation measures to gain NEPA approval. • Make the Department's noise analysis model available to design-builders in order to maintain consistency of design-builders' conceptual designs. • In situations where the design-builders are allowed to deviate from DOT&PF's conceptual design, include the noise study as an attachment and provide scoring criteria during the RFP process to assist them in making design decisions. |
| Species | <p>Examples include differing site conditions, hazardous materials, cultural resource sites, endangered species, or other environmental issues.</p> <p>DOT&PF will also normally maintain responsibility in high-risk areas during execution of the contract. If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required."</p> |
| Stormwater | No |
| Erosion | Under assignment of risk under 'construction' |
| Permit | <p>Introduction</p> <ul style="list-style-type: none"> • DOT&PF's responsibilities for contract administration involve monitoring contract compliance and schedules, processing progress payments, performing quality assurance activities, assisting in permitting and right-of-way acquisitions, negotiating contract amendments, and resolving disputes. <p>Design Documents Preparation</p> |

| Keyword | Presence |
|---------|---|
| | <ul style="list-style-type: none"> • The critical path elements of the project will most likely be centered on the right-of-way and permit processes of the project. • Acquiring certain permits is another task that is officially the responsibility of the Department. However, preparation of complete permit application packages, based on the impacts of the actual design, will be the responsibility of the Design-Builder. Required adjustments in the permit applications or the mitigation requirements will remain with the Design-Builder. • In certain cases, the Design-Builder could be made responsible for obtaining certain permits as DOT&PF's agent. • Provisions for the anticipated time for permit acquisition are written into the Scope of Work Section 420.02 Permits (Appendix F). <p>Preconstruction Conference/Meeting</p> <ul style="list-style-type: none"> • Prior to the start of construction, the Design-Builder will conduct a preconstruction conference. The traditional preconstruction conference activities associated with design-bid-build construction will occur with design-build contracting however, some parts of construction could take place while design is still under way. With a phased design of the project, phased construction could occur very near the start of the contract time. The preconstruction conference is required to discuss contract administration and work coordination with outside parties, such as local agencies, utilities and permitting agencies. Under design-build, the Design-Builder will be responsible for these activities and thus will be responsible for holding the preconstruction conference. <p>DOT&PF's Position on Basic Design-Build Elements:</p> <ul style="list-style-type: none"> • DOT&PF is responsible for complying with state and federal requirements and must be signatory on many documents, such as records of decision and permit applications. • Although design-builders must provide information to support a permit application, they cannot control the actions or timing of third party regulatory agencies. • For most projects, DOT&PF should provide allowances for the required application time as the resulting risks to the design-builder could be significant and could result in higher proposal prices. However, permits required for construction trades or for temporary construction impacts of convenience will be assigned to the design-builder. The intent is to provide sufficient permits to construct the department's conceptual design. <p>Completion Schedule</p> <ul style="list-style-type: none"> • If there are outside constraints which could impact project delivery (environmental permits, extensive right of way acquisition, complex third party agreements) then it is possible that delays in addressing |

| Keyword | Presence |
|---------|---|
| | <p>these constraints could eliminate any potential schedule advantage from design-build.</p> <p>Assess Project Risks</p> <ul style="list-style-type: none"> Other issues related to design-build contracting that should be reviewed and considered in the decision to use design-build contracting include: Permit requirements <p>Assign the Project Manager</p> <ul style="list-style-type: none"> The ultimate size and makeup of the project team will depend on project requirements (conceptual design level, technical design elements required, permit acquisition, MOU acquisition, etc.). <p>Example risk allocation matrix</p> <p>Obtaining Initial local agency permits</p> <p>Geotechnical Conditions</p> <ul style="list-style-type: none"> The geotechnical data should provide enough information to permit the design-builder to perform a preliminary assessment of geologic features and to address key engineering issues such as foundation type. <p>Environmental</p> <ul style="list-style-type: none"> Project permits present another project delivery hurdle. Even after receiving official approval of the environmental document, it is necessary to obtain a variety of permits for project impacts and construction activities. Some statutes, such as the Shoreline Management Act and the Clean Water Act, specifically define the party responsible for obtaining permits. The DOT&PF Standard Specifications require the contractor to indemnify DOT&PF for any fines imposed on DOT&PF for violations caused by the design-builder. These provisions require that the design-builder be responsible for compliance with all permits and environmental regulations. When DOT&PF is required to be a permit applicant for elements of work controlled by the design-builder, require the design-builder to generate the required permit applications for DOT&PF's review and processing. When it is not reasonable to assign the schedule risk to a design-builder, DOT&PF should provide a guaranteed schedule to obtain a given permit. <p>Corps of Engineers 404 permit (header with no text)</p> <p>Department of Ecology Water Quality 401 permit (header with no text)</p> |

| Keyword | Presence |
|------------|--|
| | <p>Shoreline Permits (header with no text)</p> <p>Evaluation Team Description</p> <ul style="list-style-type: none"> The Evaluation Team consists primarily of DOT&PF staff. However, participants from other stakeholders or agencies (contractors, consultants, FHWA, local and permitting agencies) may be appropriate and beneficial and should be considered on a project-specific basis <p>Prepare Scope of Work If the item/product is irrelevant, based on the Project Team’s concept, are there factors or project concepts that could make it relevant? For example, certain permits are not applicable unless the Design-Builder’s proposed delivery method requires work in the water.</p> |
| Commitment | No |
| Compliance | <p>Environmental</p> <p>These provisions require that the design-builder be responsible for compliance with all permits and environmental regulations.</p> |
| Monitor | <p>DOT&PF’s Position on Basic Design-Build Elements</p> <ul style="list-style-type: none"> The department will develop, direct, manage, and monitor the performance of any mitigation plans required by the discovery. <p>Assess Project Risks</p> <ul style="list-style-type: none"> If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required. |
| Mitigation | <p>Assess Project Risks</p> <ul style="list-style-type: none"> If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required. <p>Example risk allocation matrix</p> <ul style="list-style-type: none"> Performance of defined mitigation measures <p>Noise</p> <ul style="list-style-type: none"> The NEPA process may require a noise study to describe project impacts and required mitigation measures. Calculate the impact to receivers based on an assumed alignment and document the required mitigation based on the assumed parameters |

| Keyword | Presence |
|---------|---|
| | <ul style="list-style-type: none"> • Prepare the Noise Technical Report, which documents the allowable impact to receivers, the analysis assumptions (including profiles and alignments), and the required mitigation measures to gain NEPA approval. • Development of the project concept should balance variations in the alignment, set by the roadway geometric design criteria, with effects on required mitigation measures. • In the RFP, clearly define changes in the alignment that will require an adjustment to the prescribed mitigation measures. <p>Local Agencies</p> <ul style="list-style-type: none"> • DOT&PF is responsible to identify initial impacts to a community and to develop preliminary agreements regarding site access and mitigation requirements. • When an improvement project has a direct impact on a local agency, establish all mitigation requirements and limitations between DOT&PF and the local agency prior to sending out the final RFP. <p>Environmental</p> <ul style="list-style-type: none"> • However, the overall responsibility for these impacts and timeline should rest with the design-builder whenever possible, as the mitigation and timing requirements will be directly related to the design-builder's design. • In place of submitting a completed design or study to obtain the environmental approvals, provide a description of the design criteria that define the contract requirements in the Scope Of Work of the RFP that the design-builder has to meet. For example, to meet NOAA Fisheries requirements for mitigation, describe the drainage criteria required for mitigation in the Biological Assessment in lieu of developing a full Storm Water Site Plan. <p>Conduct NEPA Processes</p> <ul style="list-style-type: none"> • This ensures that the clearances are received and general mitigation requirements are known before the project proceeds. <p>Prepare Project Description</p> <ul style="list-style-type: none"> • Describe third party issues such as right-of-way acquisition, utility relocations, environmental mitigation, railroad facilities, and public information to provide the Proposers with a complete view of the Department's expectations. <p>Design Documents Preparation</p> <ul style="list-style-type: none"> • Required adjustments in the permit applications or the mitigation requirements will remain with the Design-Builder. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

“Describe third party issues such as right-of-way acquisition, utility relocations, environmental mitigation, railroad facilities, and public information to provide the Proposers with a complete view of the Department’s expectations.”

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

“Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required.”

More information needed on monitoring contractor follow-through.

Arizona

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes

- ADOT has an Alternative Delivery page that focuses on Design Build and Construction Manager at Risk:
 - <https://www.azdot.gov/business/engineering-and-construction/construction-and-materials/alternative-contracting>
- ADOT also has a P3 page here:
 - [https://www.azdot.gov/business/programs-and-partnerships/Public-PrivatePartnerships\(P3\)/overview](https://www.azdot.gov/business/programs-and-partnerships/Public-PrivatePartnerships(P3)/overview)
- Good overview of P3 in AZ (<https://www.azdot.gov/docs/business/public-private-partnerships-information-sheet.pdf?sfvrsn=0>), excerpt below:

On July 13, 2009, Governor Jan Brewer signed into law HB 2396, which allows the Arizona Department of Transportation to use publicprivate partnerships as a tool to address Arizona’s transportation requirements. This new law grants the Department broad authority to partner with the private sector to build or improve Arizona transportation facilities.

Public private partnerships include new contracting concepts, such as design-build, which allows a single proposer to both design and build a facility rather than the traditional approach of bidding out one contract for design, another for engineering, and another for construction. It also allows for the possibility that the private sector may design, build, maintain and operate a new facility, leaving ADOT in an oversight role only. In that scenario, the private proposer could be paid for its work with public funds, through tolls or fees from users, or some combination of the two. If tolls are to be part of a project, the toll setting process is required to be included in the project agreement.

The new law grants the Department the authority, after a competitive procurement process, to award a project based on best value to the State, or to reject all proposals. The best value can be based on price, financial proposal or other factors, though the Department is required to disclose its criteria as part of the project procurement. Public private partnerships can be initiated either by the Department or through an unsolicited proposal. In the case of unsolicited proposals, if the Department feels the proposal has merit, then it is required to go through a competitive procurement process. ADOT has developed broad criteria for evaluating projects. These criteria will help to identify projects for which a P3 procurement is potentially warranted, assist both governmental and private entities wishing to pursue a P3 project in selecting projects to discuss with ADOT, and serve to protect Arizonans by ensuring that only viable projects are moved forward for further consideration and implementation.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes

<https://www.azdot.gov/docs/default-source/construction-group/designbuildguide.pdf?sfvrsn=0>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------|----------|
| NEPA | No |

| Keyword | Presence |
|-------------|--|
| Environment | <p data-bbox="488 233 605 260">PURPOSE</p> <ul data-bbox="537 268 1474 548" style="list-style-type: none"> <li data-bbox="537 268 1474 548">• The purpose of this document is to establish and explain the Department’s process for procuring and administering both the design and construction of a highway facility with a single contract. The process should clearly communicate all known information to the Design-Builder regarding site conditions, environmental issues, regulatory concerns, community and political interests, right-of-way constraints, utility conditions, and other design and construction issues to keep the risk transfer to the Design-Builder to a minimum, thereby producing the most economical project. <p data-bbox="488 590 732 617">PROJECT SELECTION</p> <ul data-bbox="537 625 1479 940" style="list-style-type: none"> <li data-bbox="537 625 1479 730">• a good candidate for D-B must have minimal right-of-way impacts and minimal or readily resolvable utility relocations. Environmental documents don’t need to be complete to advertise the RFP, but it is advisable. <li data-bbox="537 737 1479 940">• Environmental Issues: the preparation of all environmental documents and the obtaining of required 8 environmental and regulatory clearances shall be performed by ADOT. The scope of any remedial actions such as environmental mitigation measures, site cleanup, or hazardous materials abatement shall be clearly identified in the environmental documents and the D-B Package. <p data-bbox="488 982 1190 1010">ROLE OF THE DEPARTMENT’S PROJECT LEADERS (PM & RE)</p> <ul data-bbox="537 1018 1468 1339" style="list-style-type: none"> <li data-bbox="537 1018 1468 1123">• The PM should also be involved in the necessary environmental studies, permits, and assessments required for the project including reviewing environmental documents. <li data-bbox="537 1129 1468 1234">• The objective is to have a well-informed, involved PM who can accurately communicate the Department’s scoping, right-of-way, and environmental concerns when developing the D-B Package. <li data-bbox="537 1241 1468 1339">• The PM should be in a direct management role to ensure the D-B Package is prepared in accordance with the scoping and environmental documents and meets the needs of ADOT management and key project stakeholders. <p data-bbox="488 1381 1474 1444">ANNOUNCEMENT OF THE SHORT-LISTED FIRMS AND THE MANDATORY TECHNICAL PROPOSAL PRESUBMITTAL MEETING</p> <ul data-bbox="537 1453 1403 1558" style="list-style-type: none"> <li data-bbox="537 1453 1403 1558">• ADOT controlled D-B activities such as ROW acquisition, utility identification, environmental agreements, and regulatory permitting should be discussed and updated at the meeting. <p data-bbox="488 1600 678 1627">INTRODUCTION</p> <ul data-bbox="537 1635 1451 1808" style="list-style-type: none"> <li data-bbox="537 1635 1451 1808">• The D-B Package should include the design requirements, the design standards, the allowable design exceptions, the design services required, the project constraints related to traffic, utilities, the environment and right-of-way, the construction requirements, and the construction management services required. <p data-bbox="488 1850 727 1877">Technical Proposals</p> |

| Keyword | Presence |
|---------------------|--|
| | <ul style="list-style-type: none"> • This may include environmental mitigation measures, public information management, transit features, or freeway management systems. <p>Price Proposal</p> <ul style="list-style-type: none"> • Anticipated contingency items like pavement repair, prior rights utility work, hazmat remediation, or environmental mitigation measures should also be included in the bid schedule as lump sum pay items to be performed as contingent items or by force account work. <p>GENERAL REQUIREMENTS</p> <ul style="list-style-type: none"> • The General Requirements may include incentives/disincentive specifications, traffic restrictions, noise limitations, special environmental regulations, and other special contracting regulations. <p>DESIGN SCOPE</p> <ul style="list-style-type: none"> • Any studies, DCRs, PAs, and environmental reports shall also be referenced. <p>DESIGN SCOPE</p> <ul style="list-style-type: none"> • Environmental Services The Department will prepare for the project all environmental documents normally prepared during the design and development stages. This would include environmental assessments, environmental impact statements, and TIPs. These documents should be included or referenced in the D-B Package. Any special environmental considerations to be addressed by the Design-Builder must also be included. • The Department will also obtain all the necessary environmental permits such as 404 permits and clearance letters. However, any special environmental remediation work that needs to be performed during construction as part of these permits should be specified in the D-B Package for the DesignBuilder to perform. • The Design-Builder is still responsible for obtaining all the environmental permits specified in the Standard Specifications such as dust control and hauling permits as well as the National Pollution Discharge Elimination System’s Notice of Intent (NOI) and Notice of Terminations (NOT). |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>GENERAL REQUIREMENTS</p> <ul style="list-style-type: none"> • The General Requirements may include incentives/disincentive specifications, traffic restrictions, noise limitations, special environmental regulations, and other special contracting regulations. |
| Species | No |
| Stormwater | No |
| Erosion | No |

| Keyword | Presence |
|------------|--|
| Permit | <p data-bbox="488 233 1187 260">ROLE OF THE DEPARTMENT’S PROJECT LEADERS (PM & RE)</p> <ul data-bbox="537 268 1438 369" style="list-style-type: none"> <li data-bbox="537 268 1438 369">• The PM should also be involved in the necessary environmental studies, permits, and assessments required for the project including reviewing environmental documents. <p data-bbox="488 415 1474 478">ANNOUNCEMENT OF THE SHORT-LISTED FIRMS AND THE MANDATORY TECHNICAL PROPOSAL PRESUBMITTAL MEETING</p> <ul data-bbox="537 487 1438 730" style="list-style-type: none"> <li data-bbox="537 487 1438 621">• The Technical Proposal shall include a schedule, schematic design plans and specifications, technical reports, calculations, permit requirements, applicable development requirements, and other data requested in the request for proposals. <li data-bbox="537 630 1438 730">• ADOT controlled D-B activities such as ROW acquisition, utility identification, environmental agreements, and regulatory permitting should be discussed and updated at the meeting. <p data-bbox="488 772 667 800">DESIGN SCOPE</p> <ul data-bbox="537 808 1471 1014" style="list-style-type: none"> <li data-bbox="537 808 1471 1014">• The design scope must clearly define both the design services and the design requirements. Design services are any tasks that support the design of the facility. These tasks include geotechnical investigations, surveying, permitting, mapping and DTMs, utility coordination/relocation, engineering drawings, plans, and construction specifications, and as-built plans. <p data-bbox="488 1056 667 1083">DESIGN SCOPE</p> <ul data-bbox="537 1092 1471 1730" style="list-style-type: none"> <li data-bbox="537 1092 1471 1268">• The Department will also obtain all the necessary environmental permits such as 404 permits and clearance letters. However, any special environmental remediation work that needs to be performed during construction as part of these permits should be specified in the D-B Package for the DesignBuilder to perform. <li data-bbox="537 1276 1471 1411">• The Design-Builder is still responsible for obtaining all the environmental permits specified in the Standard Specifications such as dust control and hauling permits as well as the National Pollution Discharge Elimination System’s Notice of Intent (NOI) and Notice of Terminations (NOT). <li data-bbox="537 1419 1471 1587">• The D-B Package should include a provision requiring the Design-Builder to assign both a utilities coordinator and a construction utilities coordinator. The job of both coordinators is to work with the utilities during design and construction to verify utilities locations, obtain permits and oversee utility relocation work and adjustments. <li data-bbox="537 1596 1471 1663">• The D-B Package should make the Design-Builder responsible for obtaining ADOT permits for all utility relocation work. <li data-bbox="537 1671 1471 1730">• On design-build projects, it’s the Department’s policy to have the PM and their staff approve all permit work. |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | PROJECT SELECTION |

| Keyword | Presence |
|---------|---|
| | <ul style="list-style-type: none"> The scope of any remedial actions such as environmental mitigation measures, site cleanup, or hazardous materials abatement shall be clearly identified in the environmental documents and the D-B Package. <p>STATEMENT OF QUALIFICATIONS AND TECHNICAL PROPOSAL REQUIREMENTS</p> <ul style="list-style-type: none"> Special Considerations: This section is left for the PM to include any special characteristics that are unique to the project that need to be considered and graded separately. This may include environmental mitigation measures, public information management, transit features, or freeway management systems. Anticipated contingency items like pavement repair, prior rights utility work, hazmat remediation, or environmental mitigation measures should also be included in the bid schedule as lump sum pay items to be performed as contingent items or by force account work. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

“The Project Manager shall be responsible for conducting a performance evaluation of the Design-Builder at the end of the project. This evaluation should be conducted through the use of the Partnering Evaluation Program.” Standard evaluation goals do not include environmental concerns:

<https://www.azdot.gov/docs/default-source/partnering/14-300-pep-guidelines-flyer.pdf?sfvrsn=8>

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

Partnering Evaluation Program does not explicitly name environmental, but it might be listed under ‘additional goals’ and scored according to the table below:

| Additional Goals | Evaluation Criteria and Scores | | | | |
|------------------|---|---|---|------------------------------|--------------------------|
| (6) | Select Score | | | | |
| | Significant Problems | Performed Below Expectations | Met Expectations | Exceeded Expectations | Don't Know |
| | <input type="checkbox"/> 0.5 <input type="checkbox"/> 1.0 <input type="checkbox"/> 1.5 | <input type="checkbox"/> 2.0 <input type="checkbox"/> 2.5 | <input type="checkbox"/> 3.0 <input type="checkbox"/> 3.5 | <input type="checkbox"/> 4.0 | <input type="checkbox"/> |
| | Comments: <input type="checkbox"/> Take Action <input type="checkbox"/> Neutral <input type="checkbox"/> Provide Recognition | | | | |

Arkansas

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes

<http://www.arkansashighways.com/contracts/designbuild.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes

http://www.arkansashighways.com/contracts/alt_delivery_program/Design_Build%20Procedures_Final.pdf

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------|---|
| NEPA | <p>DEFINITIONS AND ACRONYMS</p> <ul style="list-style-type: none"> • “Project Environmental Documents” (PED) refers to the cumulative documents, usually completed by the Department prior to the issuance of the RFQ and RFP, required to meet the NEPA requirements and any other Federal or State environmental obligations required of the Project. <p>ENVIRONMENTAL DOCUMENTATION</p> <ul style="list-style-type: none"> • The preparation of Project Environmental Documents (PED), and the subsequent obtaining of required environmental and regulatory clearances, should normally be performed by the Department in accordance with the regulations for implementing the National Environmental Policy Act (NEPA) as promulgated by the Council on Environmental Quality (CEQ). The RFQ may be released prior to the conclusion of the NEPA review process as long as the RFQ informs Proposers of the general status of the NEPA process. The NEPA review process is concluded with a Categorical Exclusion (CE) classification, an approved Finding of No Significant Impact (FONSI), or an approved Record of Decision (ROD). Specialty environmental requirements for the Project and/or the Proposer to consider may be identified in the Procurement Documents. Implementation of any environmental commitments and mitigation measures identified during the NEPA process should be specifically included as requirements in the Procurement Documents and should make clear the allocation of cost and schedule risk if a Proposer suggests any design features that would require a change or reevaluation of the PED. In general, the Proposer should retain any risk for modifications to the Project Scope initiated by the Proposer which is not consistent with the PED and any approvals provided by the Department in the Procurement Documents. <p>RIGHT-OF-WAY COORDINATION</p> <p>Right-of-way acquisition will normally be the responsibility of the Department. In order to prevent Proposers from arbitrarily pricing uncertainty of ROW availability, right-of-way acquisition will typically be initiated upon completion of the NEPA process prior to completion of the Procurement Phase.</p> |

| Keyword | Presence |
|-------------|--|
| | <p>Environmental Services</p> <ul style="list-style-type: none"> The preparation and processing of the Project Environmental Documents (PED) required to comply with NEPA should normally remain the responsibility of the Department and the resulting documents and approvals should be provided to the Short-List Proposers as part of the Reference Information Documents (RID) included with and referenced in the RFP. |
| Environment | <p>DEFINITIONS AND ACRONYMS</p> <ul style="list-style-type: none"> “Project Environmental Documents” (PED) refers to the cumulative documents, usually completed by the Department prior to the issuance of the RFQ and RFP, required to meet the NEPA requirements and any other Federal or State environmental obligations required of the Project. “Project Timeline” refers to the overall schedule that includes all of the Project activities from initial programming to completion of the Project including the environmental document process, right-of-way acquisition, Preliminary Design, Final Design, and construction. “Technical Score” (TS) refers to the compilation of various factors required to evaluate the Technical Proposal, typically including, but not limited to, (a) the overall time needed for completion of the Work, (b) innovative design included in the Proposal, (c) the scope and quality of the Work, (d) quality of the project management, (e) project aesthetics (f) environmental compliance and (g) other criteria. The factors are determined on a project-by-project basis to reflect the important scope items, goals of the project, elements the Department has determined to be most important in delivery of the project and to differentiate the 17 September 2015 Short-List Proposers. The Technical Score is determined by the PET at the end of the evaluation of the Technical Proposal. <p>OVERVIEW</p> <ul style="list-style-type: none"> The project development process for D-B projects is generally the same as that used for traditional DB-B projects until approximately the 20%-30% level of Preliminary Engineering and associated studies and the environmental process. <p>PROJECT SCOPE</p> <ul style="list-style-type: none"> Work product examples to be reviewed include, but are not limited to, preliminary reviews, environmental surveys, photogrammetric surveys, topographic maps, existing soil borings, previous construction plans, and right-of-way maps. <p>PROJECT TIMELINE AND PROJECT SCHEDULE</p> <ul style="list-style-type: none"> The Project Timeline, which includes the entire project period from initial development through the Project Final Acceptance, must allow sufficient time for all required tasks outside of the D-B period, including |

| Keyword | Presence |
|---------|---|
| | <p>environmental work, right-of-way acquisition, permitting, and utility relocation.</p> <p>PROJECT RISK OVERVIEW</p> <ul style="list-style-type: none"> • Some examples of high-risk items include: • Environmental studies • If unanticipated issues or unforeseen conditions arise during the Project, such as differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department should, unless specified otherwise in the DBA, develop, direct, manage, and monitor the performance of any mitigation plans required of the Design-Builder to address those issues. • An example of this approach would be where the Department accepts the risk of any environmental discoveries by agreeing to reimburse the Design-Builder for remediation costs in order to reduce the overall costs submitted in the Proposals. Conversely, in a corridor in which the Department has an increased confidence that environmental discoveries are less likely, the Department could pass on to the Design-Builder all risks for unanticipated environmental discoveries. <p>ENVIRONMENTAL DOCUMENTATION</p> <ul style="list-style-type: none"> • The preparation of Project Environmental Documents (PED), and the subsequent obtaining of required environmental and regulatory clearances, should normally be performed by the Department in accordance with the regulations for implementing the National Environmental Policy Act (NEPA) as promulgated by the Council on Environmental Quality (CEQ). • Specialty environmental requirements for the Project and/or the Proposer to consider may be identified in the Procurement Documents. • Implementation of any environmental commitments and mitigation measures identified during the NEPA process should be specifically included as requirements in the Procurement Documents and should make clear the allocation of cost and schedule risk if a Proposer suggests any design features that would require a change or reevaluation of the PED. <p>INTER-AGENCY AGREEMENT</p> <ul style="list-style-type: none"> • An Inter-Agency Agreement (IAA) between the Department and another State or local agency, such as the Arkansas Department of Environmental Quality (ADEQ), Union Pacific Railroad, BNSF Railway, or a City or County Government, is often required for projects the size which are attractive as a D-B Project. <p>REFERENCE INFORMATION DOCUMENTS</p> <ul style="list-style-type: none"> • As noted in an earlier section, the outcomes of the Preliminary Engineering and environmental processes for a D-B project provide important information and requirements 31 September 2015 to be relayed to the Short-List Proposers as part of the RFP. |

| Keyword | Presence |
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| | <p data-bbox="492 268 976 296">REFERENCE INFORMATION DOCUMENTS</p> <ul data-bbox="537 306 1474 405" style="list-style-type: none"> <li data-bbox="537 306 1474 405">• The RID provided to the Short-List Proposers with the RFP should generally include, but is not limited to, the following: Project Environmental Documents <p data-bbox="492 449 722 476">PROJECT DIRECTOR</p> <ul data-bbox="537 487 1458 657" style="list-style-type: none"> <li data-bbox="537 487 1458 657">• A Project of the size and importance that will be attractive to the Department as a D-B project, will extend several years from initial project identification through all the stages of the project, i.e. preliminary engineering, environmental, procurement, and subsequently design/construction. <p data-bbox="492 701 898 728">Prepare the Request for Proposals</p> <ul data-bbox="537 739 1430 909" style="list-style-type: none"> <li data-bbox="537 739 1430 909">• The RFP should include the design requirements, the design standards, allowable design exceptions, design services required, the project constraints related to traffic, utilities, the environment, right-of-way, construction requirements, and the construction management services required. <p data-bbox="492 953 760 980">Components of an RFP</p> <ul data-bbox="537 991 1289 1056" style="list-style-type: none"> <li data-bbox="537 991 1289 1056">• The general components of the RFP include: Environmental Issues/Requirements and Hazardous Materials <p data-bbox="492 1100 902 1127">Reference Information Documents</p> <ul data-bbox="537 1138 1393 1203" style="list-style-type: none"> <li data-bbox="537 1138 1393 1203">• Types of RID materials may include maps, traffic forecasts, technical reports, design details, and environmental documentation. <p data-bbox="492 1247 716 1274">Project Description</p> <ul data-bbox="537 1285 1471 1413" style="list-style-type: none"> <li data-bbox="537 1285 1471 1413">• Any Third party issues should be described, such as right-of-way acquisition, utility relocations, environmental mitigation, railroad facilities, and public information to provide the Short-List Proposer with a complete view of the Department goals and expectations for the Project. <p data-bbox="492 1457 1097 1484">Agreement and Technical Provisions: Project Scope</p> <ul data-bbox="537 1495 1463 1738" style="list-style-type: none"> <li data-bbox="537 1495 1463 1560">• The Project Scope may include, but not be limited to, the following items: Environmental constraints and permitting issues <li data-bbox="537 1570 1463 1669">• Project specific information typically contained in Preliminary Engineering and Project Environmental Documents can be included to the RFP or transferred directly into the relevant Project Scope section. <li data-bbox="537 1680 1463 1738">• The technical provisions may include, traffic restrictions, noise limitations, special environmental regulations, and other technical requirements. <p data-bbox="492 1782 768 1810">Environmental Services</p> <ul data-bbox="537 1820 1455 1885" style="list-style-type: none"> <li data-bbox="537 1820 1455 1885">• The preparation and processing of the Project Environmental Documents (PED) required to comply with NEPA should normally remain the |

| Keyword | Presence |
|---------------------|---|
| | <p>responsibility of the Department and the resulting documents and approvals should be provided to the Short-List Proposers as part of the Reference Information Documents (RID) included with and referenced in the RFP. Any special environmental considerations to be addressed by the selected Short-List Proposer must also be included in the RFP. Construction activities are regulated by environmental rules and regulations that are administered by Federal, State, Local and special district governing agencies. The time when these permits can be obtained vary with the type of project, its impacts, and the requirements of a specific permitting agency; therefore, the party responsible for obtaining required environmental permits and mitigation may vary depending on the type of project. The description of the various parties and their respective responsibilities required for the Project should be clearly defined in the RFP.</p> <p>DEPARTMENT IMPLEMENTATION TEAM</p> <ul style="list-style-type: none"> • The DIT required for the Project should be similar to the Department group typically assembled for a DB-B construction project to monitor construction with additional members to monitor the Final Design development, perform plan reviews, monitor the environmental compliance, quality monitoring/verification, public involvement and to provide legal advice. • Depending on the size of the Project, the primary DIT members may include: Environmental Specialists <p>RE-ESTABLISH SURVEY CONTROL/CONSTRUCTION SURVEYING</p> <ul style="list-style-type: none"> • The Design Builder should maintain responsibility for the survey control and required staking for construction; however, the Department should conduct necessary quality assurance checks on the control and staking, if determined to be required, in particular, in the vicinity of residential or other environmentally or publicly sensitive areas prior to any construction activities in the impacted area. |
| Cultural (resource) | <p>PROJECT RISK OVERVIEW</p> <p>If unanticipated issues or unforeseen conditions arise during the Project, such as differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department should, unless specified otherwise in the DBA, develop, direct, manage, and monitor the performance of any mitigation plans required of the Design-Builder to address those issues.</p> |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>Agreement and Technical Provisions: Project Scope</p> <ul style="list-style-type: none"> • The technical provisions may include, traffic restrictions, noise limitations, special environmental regulations, and other technical requirements. |

| Keyword | Presence |
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| | <p>REFERENCE INFORMATION DOCUMENTS</p> <ul style="list-style-type: none"> The RID provided to the Short-List Proposers with the RFP should generally include, but is not limited to, the following: Noise Studies |
| Species | <p>PROJECT RISK OVERVIEW</p> <ul style="list-style-type: none"> If unanticipated issues or unforeseen conditions arise during the Project, such as differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department should, unless specified otherwise in the DBA, develop, direct, manage, and monitor the performance of any mitigation plans required of the Design-Builder to address those issues. |
| Stormwater | <p>Geotechnical Investigation</p> <ul style="list-style-type: none"> The goals of the geotechnical investigation should include, but not be limited to, the following: Assess potential stormwater infiltration or detention sites with regard to their feasibility, and to gather ground water data in accordance with storm water regulations. |
| Erosion | No |
| Permit | <p>PROJECT TIMELINE AND PROJECT SCHEDULE</p> <ul style="list-style-type: none"> The Project Timeline, which includes the entire project period from initial development through the Project Final Acceptance, must allow sufficient time for all required tasks outside of the D-B period, including environmental work, right-of-way acquisition, permitting, and utility relocation. <p>Design Services Requirements</p> <ul style="list-style-type: none"> The Project Scope must clearly define the design services required and any requirements for right-of-way acquisition not performed by the Department. Design services may include geotechnical investigation/design, surveying, permitting, utility coordination, etc. Most elements of the DB-B design process will typically be relevant and included in the D-B process. <p>Agreement and Technical Provisions: Project Scope</p> <ul style="list-style-type: none"> The Project Scope may include, but not be limited to, the following items: Permitting, Environmental constraints and permitting issues For example, certain permits are not applicable unless the DesignBuilder’s proposed delivery method requires work in the water. Environmental Services: The time when these permits can be obtained vary with the type of project, its impacts, and the requirements of a specific permitting agency; therefore, the party responsible for obtaining required environmental permits and mitigation may vary depending on the type of project. Utilities and Permits: The Department, through its preliminary investigation of existing utility facilities in the corridor, should provide available information relative to the location and ownership of existing utilities to the Short-List Proposers in the RID included with the RFP. |

| Keyword | Presence |
|------------|---|
| | <p>DESIGN BUILD CONTRACT ADMINISTRATION</p> <ul style="list-style-type: none"> The responsibilities of the Department for contract administration will involve monitoring contract compliance and schedules, processing progress payments, performing quality assurance activities, assisting in permitting and right-of-way acquisitions, negotiating contract amendments, and resolving disputes. <p>DESIGN AND CONSTRUCTION DOCUMENT PREPARATION</p> <ul style="list-style-type: none"> The critical path elements of the Project will most likely be centered on the Project right-of-way and permit processes. Acquiring certain permits is another task that is typically the responsibility of the Department; however, preparation of complete permit application packages, based on the impacts of the actual or Final Design, should be the responsibility of the DesignBuilder. Any required adjustments in the permit applications or the mitigation requirements will remain with the Design-Builder throughout the Project. In certain cases, the Design-Builder could be assigned the responsibility for obtaining certain permits as an agent of the Department. Provisions for the anticipated time for permit acquisition should be written into the RFP Scope of Work. <p>PRE-CONSTRUCTION CONFERENCE/MEETING</p> <ul style="list-style-type: none"> The pre-construction conference is required to discuss contract administration and work coordination within the parties and with outside parties, such as local agencies, utilities and permitting agencies. T |
| Commitment | <p>PRELIMINARY DESIGN & ENGINEERING</p> <ul style="list-style-type: none"> The level of Preliminary Design and Engineering provided by the Department for a D-B project can vary from project to project but a “20-30 percent” level of design completed prior to the release of the RFP is not uncommon. A similar level of completion would enable the key decisions regarding the Project Scope, Project Limits, Project Schedule, Project Budget, along with impacts and mitigations, as well as other Project requirements and commitments, to remain directly under the control of the Department. <p>ENVIRONMENTAL DOCUMENTATION</p> <ul style="list-style-type: none"> Implementation of any environmental commitments and mitigation measures identified during the NEPA process should be specifically included as requirements in the Procurement Documents and should make clear the allocation of cost and schedule risk if a Proposer suggests any design features that would require a change or reevaluation of the PED. <p>INTER-AGENCY AGREEMENT</p> |

| Keyword | Presence |
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| | <ul style="list-style-type: none"> The IAA required for completion of the Project will, in most cases, be obtained by the Department prior to issuance of the RFP to ensure all commitments and requirements of the agencies are known when the Short-List Proposer prepares the Proposal in response to the RFP. |
| Compliance | <p>DEFINITIONS AND ACRONYMS</p> <ul style="list-style-type: none"> “Design-Build to a Budget”, also known as Fixed Price-Best Design, refers to a particular variable scope D-B method where the Department establishes the Project “Baseline Project Cost”, and subsequently evaluates the Proposals for both (1) compliance with the RFP requirements and (2) maximizing the scope to be delivered by the Proposer, above the requirements of the Baseline Project Documents (BPD) provided by the Department as part of the Procurement Documents. “Technical Score” (TS) refers to the compilation of various factors required to evaluate the Technical Proposal, typically including, but not limited to, (a) the overall time needed for completion of the Work, (b) innovative design included in the Proposal, (c) the scope and quality of the Work, (d) quality of the project management, (e) project aesthetics (f) environmental compliance and (g) other criteria. <p>Agreement and Technical Provisions: Project Scope</p> <ul style="list-style-type: none"> The performance specifications may address capacity, life span, toughness, ride quality, durability, appearance, conformance with standards, and other measurable features or tenets of the Project. Project requirements should be described completely and in a manner that will be easily interpreted and understood. The Project requirements should also include how the Department will measure compliance with the requirement. In some cases, the Department may continue with its normal independent assurance and compliance monitoring and auditing programs outside the limits of the four roles described above. <p>DEPARTMENT IMPLEMENTATION TEAM</p> <ul style="list-style-type: none"> The DIT required for the Project should be similar to the Department group typically assembled for a DB-B construction project to monitor construction with additional members to monitor the Final Design development, perform plan reviews, monitor the environmental compliance, quality monitoring/verification, public involvement and to provide legal advice. <p>DESIGN AND CONSTRUCTION DOCUMENT PREPARATION</p> <ul style="list-style-type: none"> PRT comments provided to the Design-Builder should be consistent with the Department oversight role on the Project to monitor and verify compliance with the DBA (Design-Build Agreement). <p>CONTRACT COMPLETION</p> |

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| | <ul style="list-style-type: none"> Any warranty requirements will extend beyond the Project construction completion and should be monitored by the Department for compliance on the specific objectives, conditions, and term of the warranty. |
| Monitor | <p>DEFINITIONS AND ACRONYMS</p> <ul style="list-style-type: none"> “Department Implementation Team” (DIT) refers to the group of individuals with the collective responsibility to perform contract administration, design reviews, and monitor, or oversee, the Design-Builder during the Implementation Phase of the Project. <p>PROJECT RISK OVERVIEW</p> <ul style="list-style-type: none"> If unanticipated issues or unforeseen conditions arise during the Project, such as differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department should, unless specified otherwise in the DBA, develop, direct, manage, and monitor the performance of any mitigation plans required of the Design-Builder to address those issues. <p>DEPARTMENT IMPLEMENTATION TEAM</p> <ul style="list-style-type: none"> The DIT required for the Project should be similar to the Department group typically assembled for a DB-B construction project to monitor construction with additional members to monitor the Final Design development, perform plan reviews, monitor the environmental compliance, quality monitoring/verification, public involvement and to provide legal advice. |
| Mitigation | <p>PROJECT RISK OVERVIEW</p> <ul style="list-style-type: none"> If unanticipated issues or unforeseen conditions arise during the Project, such as differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department should, unless specified otherwise in the DBA, develop, direct, manage, and monitor the performance of any mitigation plans required of the Design-Builder to address those issues. <p>PRELIMINARY DESIGN & ENGINEERING</p> <ul style="list-style-type: none"> The level of Preliminary Design and Engineering provided by the Department for a D-B project can vary from project to project but a “20-30 percent” level of design completed prior to the release of the RFP is not uncommon. A similar level of completion would enable the key decisions regarding the Project Scope, Project Limits, Project Schedule, Project Budget, along with impacts and mitigations, as well as other Project requirements and commitments, to remain directly under the control of the Department. <p>ENVIRONMENTAL DOCUMENTATION</p> |

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| | <ul style="list-style-type: none"> • Implementation of any environmental commitments and mitigation measures identified during the NEPA process should be specifically included as requirements in the Procurement Documents and should make clear the allocation of cost and schedule risk if a Proposer suggests any design features that would require a change or reevaluation of the PED. <p>GEOTECHNICAL CONSIDERATIONS</p> <ul style="list-style-type: none"> • Preliminary assessment of other existing or potential geologic hazards such as landslides, rockfall, debris flows, etc., as well as the feasibility of mitigation strategies. • A preliminary assessment of the feasibility of potential mitigation schemes should be provided, as well as an assessment of the impact of liquefaction on the existing and proposed Project features. • The potential mitigation schemes for liquefaction hazards could affect the decision on whether to widen or replace an existing bridge or similar structure. <p>Project Description</p> <ul style="list-style-type: none"> • Any Third party issues should be described, such as right-of-way acquisition, utility relocations, environmental mitigation, railroad facilities, and public information to provide the Short-List Proposer with a complete view of the Department goals and expectations for the Project. <p>Agreement and Technical Provisions Project Scope</p> <ul style="list-style-type: none"> • The time when these permits can be obtained vary with the type of project, its impacts, and the requirements of a specific permitting agency; therefore, the party responsible for obtaining required environmental permits and mitigation may vary depending on the type of project. <p>Design Documents Preparation</p> <ul style="list-style-type: none"> • Any required adjustments in the permit applications or the mitigation requirements will remain with the Design-Builder throughout the Project |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The communication of commitments would be identified in the Design Build Agreement; however, communication of environmental commitments is not specified in this manual.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No explicit follow through is apparent in the guidance. "Implementation of any environmental commitments and mitigation measures identified during the NEPA process should be specifically included as requirements in the Procurement Documents."

California

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes

<http://www.dot.ca.gov/design/idd/>

Subjects covered include:

- Alternative Procurement Guide (PDF)
- Construction Manager / General Contractor (CM/GC)
- Design-Build Demonstration Program
- Innovative Procurement Practices (PDF)
- Project Acceleration
- Project Look Ahead Database
- Value Analysis

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes

<http://www.dot.ca.gov/design/idd/AlternativeProcurementGuide.pdf>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

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| NEPA | <p><u>Project Approval and Environmental Document (0-Phase)</u> To facilitate the design-build decision process, the Department’s standard Project Approval and Environmental Document phase can be expanded to include a concerted effort to:</p> <ul style="list-style-type: none"> • Identify and rank the project’s goals and objectives; • Identify, evaluate, and allocate project risks; and • Select the appropriate delivery method given the goals and risks identified for the project. <p>These additional activities are not necessarily sequential and will likely require some iteration as project data is refined through subsequent investigations and design efforts. The preliminary engineering performed to support the preparation of the draft Project Report and draft Environmental Document can be tailored to support these design-build activities as well. With regard to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) processes, the Department’s role will likely remain unchanged under design-build delivery. Note, however, that the FHWA’s Final Design-Build Rule under SAFETEA-LU (amended August 14, 2007) does allow agencies to issue RFPs, execute agreements with the selected design-builder, and issue the notice-to-proceed with preliminary design work prior to the completion of the NEPA process. Such early involvement of the design-builder could further accelerate the delivery process by advancing the preliminary design of the preferred alternate in parallel with the NEPA process. To avoid conflicts of interest under such a procurement strategy, the Design-Build Final Rule does preclude the design-builder from preparing the NEPA documents and from having any decision-making</p> |

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| | <p>responsibility with respect to the NEPA process. The design-build contract under these conditions would also require appropriate provisions (e.g., through the use of contract hold points) to prevent the design-builder from proceeding with the final design and any physical construction prior to conclusion of NEPA. Similarly, the contract would have to include termination provisions in the event that the no-build alternative is ultimately selected. Although federal regulations allow the RFP and design-builder selection to occur prior to completion of the CEQA and NEPA processes, the Department would not, at least initially, issue solicitation documents until after the NEPA process is complete and the necessary environmental clearances have been received. The preliminary engineering and preparation of the appropriate environmental documents will therefore remain the Department's responsibility, just as with the design-bid-build process.</p> <p><u>Environmental Studies, Permitting, and Compliance</u></p> <ul style="list-style-type: none"> • Under design-build delivery, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The preliminary engineering and environmental studies, definition of major project features, selection of the preferred alternative, and preparation of the appropriate environmental documents will therefore remain the Department's responsibility, requiring little change to the Project Report and Environmental Document phase of the Department's traditional design-bid-build process. • In addition, responsibility for obtaining any other environmental clearances required outside of the NEPA/CEQA process can also be shifted to the design-builder, particularly if they relate to more construction-specific permits and approvals, such as those required for soil disturbing operations. However, prior to shifting this risk to the design-builder, the Department should carefully consider the appropriate level of conceptual design needed to convey environmental conditions and mitigation requirements to the design-builder. <p><u>Preliminary Engineering</u></p> <ul style="list-style-type: none"> • Some additional guidelines to help establish the appropriate level of preliminary engineering are as follows: <ul style="list-style-type: none"> • Obtain the information needed to support the NEPA process. <p><u>Project Scope and Technical Criteria</u></p> <p>Once the NEPA process has been finalized, the PDT can use the information gathered through the preliminary engineering effort to finalize the project scope and technical criteria package for inclusion in the RFP.</p> <p><u>RFQ Composition</u></p> |

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| | <ul style="list-style-type: none"> • The project description serves to provide a summary-level introduction to the project. Topics addressed in a typical project description include the following: Status of the project, including the NEPA process; • Areas that would be of particular interest to prospective design-builders include: • the NEPA process, <p><u>Preliminary Project Development</u></p> <ul style="list-style-type: none"> • Under CM at-Risk delivery, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). |
| Environment | <p><u>What is a Project Delivery System?</u> Project delivery involves the steps and processes required to implement a project from initiation to final completion. This includes environmental clearance, right of way acquisition, design and construction of the project. For the purposes of this guide, project delivery systems refer to the processes that are used by the Department to design and construct a project. A project delivery system may also include some elements of environmental clearance and right of way acquisition.</p> <p><u>Why Should We Use Design-Sequencing?</u> Final Environmental Document/Determination Complete: Because design-sequencing provides the opportunity to reduce construction time by procuring at 30 percent complete design, ensure that all environmental documentation, clearances, and determinations are final and complete. Incomplete documentation will hinder the potential time reducing benefits of design-sequencing. Note: The Department must have environmental approval to advertise.</p> <p><u>Statutory Authority</u> FHWA requires an approved environmental document/determination for the entire project prior to the award of any phase or sequence of the project.</p> <p><u>Project Development</u> Steps included in the project development process develop preliminary documentation (Environmental, Utilities and Right of Way) and develop design documents to a level that best prepares for procurement of a contractor for the selected delivery method (see Section 3.2.3).</p> <p><u>Project Development: Identify Goals and Objectives / Eligibility Criteria</u> At a minimum, projects must satisfy all of the following conditions to be considered as a candidate for design-sequencing: Final Environmental Document/Determination</p> <p><u>Assemble Project Selection Team / Roles & Responsibilities: Environmental</u></p> <ul style="list-style-type: none"> • Prior to right of way acquisition and utility relocation, all design-sequencing projects must have an approved environmental document or |

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| | <p>determination, except in cases where advance acquisition has been approved by Headquarters Right of Way.</p> <ul style="list-style-type: none"> • No scope changes will be allowed after issuance of the Project Approval and Environmental Document. <p><u>Assemble Project Selection Team / Roles & Responsibilities: Right-of-way</u></p> <ul style="list-style-type: none"> • Use the early acquisition process prior to Project Approval & Environmental Document with Headquarters right of way approval, if the project fits criteria identified in Right of Way Early Acquisition Guidelines dated December 9, 2002. • Use the advance utility design process with prior Headquarters R/W approval, if the project meets the Department’s criteria and the design has progressed (i.e. utility locations verified and conflicts identified, utility relocation plans prepared and approved, and utility agreements prepared). Do not issue relocation notices before the environmental clearance is obtained. • Authorize long lead-time materials orders with state funds only after environmental approval. • NOTE: R/W will not issue a Notice to Vacate (30 or 90 days) until environmental clearance has been obtained. <p><u>Preliminary Project Development: Environmental</u> All design-sequencing projects must have an approved environmental document or determination. All mitigation measures must be identified. All necessary permits must be identified, obtained, and executed by the responsible resource agencies. No scope changes will be allowed after issuance of the Project Approval and Environmental Document.</p> <p><u>Preliminary Project Development: Utilities</u> Authorize long lead-time materials orders with state funds only after environmental approval. Identify and acquire, or possess, any necessary utility replacement easements.</p> <p><u>Planning and Charging Practices</u> Project Report and Environmental Document – expenditure authorization phase 0</p> <p><u>Coordination with Federal Highway Administration (FHWA)</u> FHWA requires an approved environmental document/determination for the entire project prior to the award of any phase or sequence of the project.</p> <p><u>Overview of the Design-Build Procurement Process</u></p> <ul style="list-style-type: none"> • For example, under design-build, the environmental permitting and ROW acquisition processes could begin and approach completion as a result of the Department’s preliminary design efforts, but, responsibility for permit modifications and additional ROW acquisition may be a design-builder responsibility to accommodate its final design. |

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| | <ul style="list-style-type: none"> • These activities are not necessarily design-build specific and can be integrated into the early stages of the Department’s existing Project Report and Environmental Document stage of project development (WBS Phase 0). • In fact, for most projects, the possibility of using design-build will not substantially alter the Department’s existing Project Report and Environmental Document phase. The need for the Department to perform preliminary engineering studies, obtain input from stakeholders, prepare a project report, and prepare (and, in most cases, finalize) the environmental documents, will also be required under design-build delivery. • Instead, if contractor innovation is a primary goal, the Department should only perform the level of engineering and design necessary to support the environmental process, advance right-of-way acquisition, and identify the full scope, needs, and technical criteria for the project in accordance with the risks to be allocated to the design-builder. <p data-bbox="488 842 1295 873"><u>How Does Design-Build Affect Caltrans’s Traditional Project Phases?</u></p> <ul style="list-style-type: none"> • Project Approval and Environmental Document (0-Phase): To facilitate the design-build decision process, the Department’s standard Project Approval and Environmental Document phase can be expanded to include a concerted effort to: Identify and rank the project’s goals and objectives; Identify, evaluate, and allocate project risks; and Select the appropriate delivery method given the goals and risks identified for the project. • The preliminary engineering performed to support the preparation of the draft Project Report and draft Environmental Document can be tailored to support these design-build activities as well. • With regard to the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA) processes, the Department’s role will likely remain unchanged under design-build delivery. • Although federal regulations allow the RFP and design-builder selection to occur prior to completion of the CEQA and NEPA processes, the Department would not, at least initially, issue solicitation documents until after the NEPA process is complete and the necessary environmental clearances have been received. • The Department will review the request for additional Right of Way to determine whether it falls within the scope of the preferred alternative reflected in the Environmental Document and notify the design-builder regarding the schedule and cost implications of acquiring additional Right of Way. <p data-bbox="488 1703 834 1734"><u>Deciding to Use Design-Build</u></p> <ul style="list-style-type: none"> • Third Party Risks – Environmental and other third-party issues may require design to be taken to a high level of completion or eliminate the ability to shorten the schedule, which negates the benefits of design-build. |

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| | <p data-bbox="488 233 667 260"><u>Risk Allocation</u></p> <ul data-bbox="537 268 1471 1661" style="list-style-type: none"> <li data-bbox="537 268 1471 621">• Under design-build delivery, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). The preliminary engineering and environmental studies, definition of major project features, selection of the preferred alternative, and preparation of the appropriate environmental documents will therefore remain the Department’s responsibility, requiring little change to the Project Report and Environmental Document phase of the Department’s traditional design-bid-build process. <li data-bbox="537 627 1471 873">• Where there may be some deviation from the Department’s traditional handling of environmental issues rests with permit modifications or amendments necessitated by subsequent changes to, or refinement of, the original design by the design-builder. Responsibility for any such amendments should be transferred to the design-builder, including responsibility for any schedule and/or cost impacts incurred in awaiting a final approval by the sponsoring or regulatory agency. <li data-bbox="537 879 1471 1157">• In addition, responsibility for obtaining any other environmental clearances required outside of the NEPA/CEQA process can also be shifted to the design-builder, particularly if they relate to more construction-specific permits and approvals, such as those required for soil disturbing operations. However, prior to shifting this risk to the design-builder, the Department should carefully consider the appropriate level of conceptual design needed to convey environmental conditions and mitigation requirements to the design-builder. <li data-bbox="537 1163 1471 1516">• Typically, taking preliminary highway design to 15 to 30 percent is sufficient to provide enough detail to complete early action permit processes, demonstrate constructability, identify impacts and alternates, and minimize risk to both the Department and design-builder. If, however, the initial Environmental Assessment or Environmental Impact Statement suggests some high-risk elements (e.g., wetland mitigation), the Department should consider securing the necessary permits itself, in advance of the RFP, or providing a higher level of preliminary design and/or environmental studies to offset some of the risk to the design-builder. <li data-bbox="537 1522 1471 1661">• The Department would be responsible for assessing whether the additional ROW remained within the scope of the environmental permits, acquire the additional property, and determine the cost and lead-time impacts to be borne by the design-builder. <p data-bbox="488 1703 776 1730"><u>Preliminary Engineering</u></p> <p data-bbox="488 1736 1463 1801">To a large extent, the information needed to advance the environmental documents and ROW acquisition will drive the level of preliminary design needed.</p> <p data-bbox="488 1843 850 1871"><u>Evaluation Factors – RFQ/SOQ</u></p> |

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| | <ul style="list-style-type: none"> • Information that addresses the capability of the firms to perform the work, such as: Experience in obtaining environmental permits, ROW, or assistance or cooperation from Utilities and railroads (as applicable based on risk allocation) • Approach to construction-related issues, such as: environmental compliance <p><u>Additional Procurement Considerations</u></p> <ul style="list-style-type: none"> • A possible way to encourage superior performance is to tie incentives to exceeding project goals. The incentives should focus on key areas of performance that are important to the Department or other stakeholders. Such areas could include schedule, quality, environmental compliance, public relations, and public and worker safety. <p><u>Request for Qualifications</u></p> <ul style="list-style-type: none"> • The project description serves to provide a summary-level introduction to the project. Topics addressed in a typical project description include the following: Special features of the project, such as environmental constraints, community involvement, or special technical features; • Areas that would be of particular interest to prospective design-builders include: other environmental permits and/or releases to be secured by the Department or the design-builder, and • The RFQ may include descriptions of the types of personnel that must be identified in the SOQ (e.g., Contractor’s Project Manager, Quality Manager, Design Manager, Construction Manager, Traffic Engineer, Environmental Compliance Manager, etc.). • To avoid receiving extraneous information that will not factor into the Selection Committee’s decision, the Department can clarify that the experience statement is to identify firms having experience in a particular aspect of construction (e.g., highway construction in an environmentally sensitive area; accelerated construction, etc.). <p><u>Request for Proposals</u></p> <ul style="list-style-type: none"> • The general requirements for the project, describing the goals, objectives, and operational constraints for the project (e.g., environmental or third party issues), in addition to contract forms and boiler plate provisions related to DBE and EEO requirements; • Key personnel (management, technical solutions, environmental, quality management, project support, etc.) • Fundamental constraints typically included in a basic project configuration provision include the following: Project Boundaries: Environmental constraints (e.g., wetland protection) • Environmental Permitting (See Appendix 2.2-C.16) <ul style="list-style-type: none"> ○ On a traditional design-bid-build project, the Department prepares a complete design package, which can then be used to support the environmental permitting process. |

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| | <ul style="list-style-type: none"> ○ As a standard practice, the Department can therefore assume most responsibility and risk associated with environmental permitting. A similar situation does not exist with design-build delivery. ○ Because design is incomplete at the procurement stage, the Department has limited control in obtaining any environmental permits that require a more complete design and understanding of the final project conditions. ○ Because the design-builder has more control over the final project design, the design-build contract can be used to shift some permitting responsibilities from the Department to the design-builder. The RFP must be clear in identifying which party is responsible for acquiring which permits. ○ Permit conditions may also result in unexpected design and/or construction requirements that may be more costly or time consuming than anticipated in the design-builder's original proposal. The RFP must therefore provide enough detail about environmental conditions and commitments and the general status of the permitting process to clearly convey the level of risk to be absorbed by the design-builder for environmental compliance issues. ○ The RFP should also stipulate, regardless of the operator named on the permit (i.e., the Department or the design-builder), that all environmental violation costs are the responsibility of the design-builder. ○ For projects having extreme environmental sensitivity, the RFP may require the Contractor to retain a qualified onsite inspector to ensure environmental compliance and to coordinate with the Department on environmental issues as they develop. ○ Under a best-value procurement process, the Department may also structure the evaluation criteria to reward proposers that offer approaches designed to reduce environmental impacts beyond that approved during the permitting process. ● Reference documents may include Department manuals (e.g., PDPM, ROW Manual, Construction Manual, etc.), environmental documents and decisions, and any applicable agreements (e.g., railroad and Utility agreements) made by the Department prior to the RFP. ● For example, environmental documents included in the reference documents may identify certain mitigation or permit requirements. <p><u>Construction Quality Management</u></p> <ul style="list-style-type: none"> ● The design-builder may perform many of the sampling and testing responsibilities traditionally performed by the Department's inspector. These inspection tasks will generally include the following: Auditing environmental compliance records <p><u>Project Development / CM Procurement</u></p> |

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| | <ul style="list-style-type: none"> • The next step identifies and allocates the potential risks, develops preliminary documentation (Environmental, Utilities and Right of Way) and considers developing design documents to a level that best utilizes the Construction Manager’s services— such as constructability reviews, preliminary evaluations, and preliminary estimates. <p><u>Preliminary Project Development</u></p> <ul style="list-style-type: none"> • Preliminary project development items include Environmental, Utilities, and Right of Way. • Under CM at-Risk delivery, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). • The preliminary engineering and environmental studies, definition of major project features, selection of the preferred alternative, and preparation of the appropriate environmental documents will therefore remain the Department’s responsibility, requiring little change to the Project Report and Environmental Document phase of the Department’s traditional design-bid-build process. • The importance of environmental clearance to the CM at-Risk delivery method is for the Department to ensure that the Construction Manager has the ability to provide input into the scope of work and constructability that may affect the outcome of environmental process. • At a minimum, this should include the project’s goals and scope of work, design details, subsurface investigation reports, traffic data, and status of environmental clearance, right of way acquisition, and utility relocations. <p><u>SHARED RISK CONTINGENCY: When Used</u></p> <ul style="list-style-type: none"> • Projects involving environmental mitigation, utility or other third party issues, or that otherwise have a high likelihood of scope changes for reasons unrelated to owner directed changes are good examples of the kind of risks amenable to a shared risk contingency pool. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p><u>Preliminary Engineering</u></p> <p>Collect base project data, but, to the extent possible, reserve the analysis of this data for the design-builder. Base data collection may include: Traffic studies to provide the basis for traffic forecasts, noise studies, air quality studies, intersection channelization requirements, lane configurations, pavement designs, and maintenance and protection of traffic during construction;</p> <p><u>NO EXCUSE INCENTIVES: When Used</u></p> |

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| | <p>Projects adjacent to residential neighborhoods, where the noise, dust, traffic, and parking restrictions that may be associated with construction are community concerns.</p> <p>Most occurrences are in the appendix (which includes a review of best practices)</p> <p><u>Appendix 2.2 – Basic Project Configuration</u></p> <ul style="list-style-type: none"> • Washington Department of Transportation Interstate 405 Corridor Project: • Noise Walls: Horizontal and vertical noise wall alignments shall be as defined on the Alignment and Paving Plans, and Retaining and Noise Wall Profile Plans. At a minimum, noise walls N3, R2 and U4 must be constructed to the horizontal and vertical limits depicted on the Conceptual Plans. Noise wall alignments may be adjusted by up to four feet in offset to the roadway, but the limits and top of wall profile shall not be reduced from that shown in the Conceptual Plans. If the Design-Builder chooses to shift the roadway horizontal alignment by more than two feet, and/or the roadway vertical profile by more than one foot, a new or supplemental noise analysis report must be submitted to WSDOT for approval. The Design- Builder shall be responsible for the design and construction of all additional noise barriers that any noise study supplements indicate are necessary to meet the noise abatement standards described in the Contract Documents. In no circumstance can the basic configuration of the noise walls, as depicted on the Conceptual Plans, be reduced except that the top of wall elevations may be reduced to a minimum of 10- feet above the nearest edge line if supported by the supplemental noise analysis report. <p>See also screenshot in ‘compliance’ below</p> |
| Species | <p><u>Risk Allocation</u></p> <p>Unexpected conditions (e.g., differing site conditions, hazardous materials, endangered species, etc.) that may arise during construction will usually remain the Department’s responsibility and will be treated as changed conditions.</p> <p><u>Appendix 2.2: Environmental Permitting</u></p> <ul style="list-style-type: none"> • Florida Department of Transportation best practices • Endangered Species - The DESIGN/BUILD FIRM must comply with conditions specified in the SJRWMD and USACOE permits regarding the protection and precautionary guidelines for the Gopher Tortoise, Florida Manatee, and Eastern Indigo Snake. The DESIGN/BUILD FIRM must coordinate on site with the FDOT’S Environmental Management Office (EMO) before initiating construction and maintain coordination throughout the project. The DESIGN/BUILD FIRM shall immediately contact the EMO Office if any federal or state-listed animal species is observed within the project limits. |
| Stormwater | <u>Appendix 2.2: RFQ Project Status Summary</u> |

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| | <ul style="list-style-type: none"> • Maryland State Highway Agency: ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29 • Environmental: The Administration will obtain major environmental approvals for the PROJECT prior to NTP. Some permits, such as the MDE General Mineral Mining Permit (for batch plants), MDE Water Appropriations Permits (for withdrawals from surface and groundwater), MDE Erosion and Sediment Control Approval, MDE Stormwater Management Approval, MDE Air Quality/Emissions permits during construction, National Pollutant Discharge Elimination System (NPDES) Notices of Intent (NOI); Administration approval for noise compliance during night and holiday construction; and MDNR Roadside Tree Permit, will be the responsibility of the DesignBuilder. Permit modifications for permits obtained by the Administration and if approved by the Administration, will be coordinated by the Administration, with the Design-Builder providing the necessary supporting engineering data. All permit modification for permits obtained by the Design-Builder will be the Design-Builder’s responsibility. <p><u>Appendix 2.2: Project Goals</u></p> <ul style="list-style-type: none"> • Minnesota Department of Transportation, TH 52/Oronoco Design-Build Project • Environmental Compliance • Adhere to local, State, and Federal environmental regulations and/or permits that are required in executing and/or completing the Project. • Incorporate Best Management Practices to control sediment, stormwater runoff/discharge, water quality treatment, or other environmental parameters that are established for the Project. <p><u>Appendix 2.2: RFP Proposal package</u></p> <ul style="list-style-type: none"> • Maryland State Highway Agency: ICC Contract B Design-Build Project – MD 200 East of MD 97 to West of US 29 • Plans for environmental compliance, and sediment control; key environmental personnel and designers; and design concepts for drainage and stormwater facilities; <p><u>Appendix 2.2: Project Goals</u></p> <ul style="list-style-type: none"> • Minnesota Department of Transportation, TH 52/Oronoco Design-Build Project • Incorporate Best Management Practices to control sediment, stormwater runoff/discharge, water quality treatment, or other environmental parameters established for the Project. |
| Erosion | <p><u>Project Development /Procurement Considerations</u></p> <ul style="list-style-type: none"> • Each additive segment should include an item for general work requirements such as traffic control, mobilization, erosion control, etc. Remainder are in the appendices (and have been captured in other excerpts) |

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| Permit | <p data-bbox="488 268 1192 300"><u>Assemble Project Selection Team / Roles & Responsibilities</u></p> <p data-bbox="488 304 1341 371">All necessary permits must be identified, obtained, and executed by the responsible resource agencies.</p> <p data-bbox="488 413 886 445"><u>Preliminary Project Development</u></p> <p data-bbox="488 449 1341 516">All necessary permits must be identified, obtained, and executed by the responsible resource agencies.</p> <p data-bbox="488 558 873 590"><u>Preparing the Initial Bid Package</u></p> <p data-bbox="488 594 1442 693">Issuing addenda for a design-sequencing project should be limited to changes in conditions involving right of way, permits, the project site, utility locations and relocations, and agreements with locals and railroads.</p> <p data-bbox="488 735 776 766"><u>Benefits of Design-Build</u></p> <ul data-bbox="537 770 1446 869" style="list-style-type: none"> <li data-bbox="537 770 1446 869">• Reasons for not using design-build to deliver a particular project include: The design must be complete to resolve permitting or other third party issues. <p data-bbox="488 911 724 942"><u>Statutory Authority</u></p> <p data-bbox="488 947 1479 1262">The State Contract Act in California generally requires state agencies such as the Department to award construction contracts using competitive bidding and to award design contracts to the most qualified firm. However, the California legislature has adopted a number of statutes allowing specific agencies, particularly local agencies, districts, and joint powers authorities, to use designbuild under general enabling authority. This specific authority is generally limited to building projects, schools, water, and transit projects, but also includes revenue-generating highway projects where the Department provided oversight or acted as a funding and permitting agency.</p> <p data-bbox="488 1304 1097 1335"><u>Overview of the Design-Build Procurement Process</u></p> <p data-bbox="488 1339 1403 1514">For example, under design-build, the environmental permitting and ROW acquisition processes could begin and approach completion as a result of the Department’s preliminary design efforts, but, responsibility for permit modifications and additional ROW acquisition may be a design-builder responsibility to accommodate its final design.</p> <p data-bbox="488 1556 667 1587"><u>Risk Allocation</u></p> <ul data-bbox="537 1591 1471 1835" style="list-style-type: none"> <li data-bbox="537 1591 1471 1659">• For example, on the whole, local agency permitting is a risk area that will likely be shared between the Department and the design-builder. <li data-bbox="537 1663 1471 1766">• Better practice would be to refine this risk area into the components of initial permitting, assignable to the Department, and permit modifications, assignable to the design-builder. <li data-bbox="537 1770 1471 1835">• Where there may be some deviation from the Department’s traditional handling of environmental issues rests with permit modifications or |

| Keyword | Presence |
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| | <p>amendments necessitated by subsequent changes to, or refinement of, the original design by the design-builder.</p> <ul style="list-style-type: none"> • In addition, responsibility for obtaining any other environmental clearances required outside of the NEPA/CEQA process can also be shifted to the design-builder, particularly if they relate to more construction-specific permits and approvals, such as those required for soil disturbing operations. • Typically, taking preliminary highway design to 15 to 30 percent is sufficient to provide enough detail to complete early action permit processes, demonstrate constructability, identify impacts and alternates, and minimize risk to both the Department and design-builder. • If, however, the initial Environmental Assessment or Environmental Impact Statement suggests some high-risk elements (e.g., wetland mitigation), the Department should consider securing the necessary permits itself, in advance of the RFP, or providing a higher level of preliminary design and/or environmental studies to offset some of the risk to the design-builder. • The Department would be responsible for assessing whether the additional ROW remained within the scope of the environmental permits, acquire the additional property, and determine the cost and lead-time impacts to be borne by the design-builder. <p><u>Evaluation System Planning</u></p> <ul style="list-style-type: none"> • Information that addresses the capability of the firms to perform the work, such as: Experience in obtaining environmental permits, ROW, or assistance or cooperation from Utilities and railroads (as applicable based on risk allocation) <p><u>Request for Qualifications</u></p> <ul style="list-style-type: none"> • Areas that would be of particular interest to prospective design-builders include: other environmental permits and/or releases to be secured by the Department or the design-builder, and <p><u>Potential Changes to General Provisions</u></p> <ul style="list-style-type: none"> • Section 7: Legal Relations and Responsibility: Given the responsibilities shifted to the design-builder, permit procurement and compliance requirements may require change and/or expansion (7-1.01F, 7-1.01G, 7-1.04). <p><u>Request for Proposals</u></p> <ul style="list-style-type: none"> • On a traditional design-bid-build project, the Department prepares a complete design package, which can then be used to support the environmental permitting process. • As a standard practice, the Department can therefore assume most responsibility and risk associated with environmental permitting. A similar situation does not exist with design-build delivery. |

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| | <ul style="list-style-type: none"> • Because design is incomplete at the procurement stage, the Department has limited control in obtaining any environmental permits that require a more complete design and understanding of the final project conditions. • Because the design-builder has more control over the final project design, the design-build contract can be used to shift some permitting responsibilities from the Department to the design-builder. • The RFP must be clear in identifying which party is responsible for acquiring which permits. • Permit conditions may also result in unexpected design and/or construction requirements that may be more costly or time consuming than anticipated in the design-builder's original proposal. • The RFP must therefore provide enough detail about environmental conditions and commitments and the general status of the permitting process to clearly convey the level of risk to be absorbed by the design-builder for environmental compliance issues. • The RFP should also stipulate, regardless of the operator named on the permit (i.e., the Department or the design-builder), that all environmental violation costs are the responsibility of the design-builder. • Under a best-value procurement process, the Department may also structure the evaluation criteria to reward proposers that offer approaches designed to reduce environmental impacts beyond that approved during the permitting process. • If utilities are a particularly sensitive issue on a project, the PDT may consider requiring the designbuilder to assign a utilities coordinator to work with the utility firms during design and construction. The coordinator would be responsible for verifying utility locations, obtaining permits, and overseeing any relocation work and adjustments. • Design services that may be delegated to the design-builder include: Permitting, • For example, environmental documents included in the reference documents may identify certain mitigation or permit requirements. <p><u>Related Manuals</u></p> <ul style="list-style-type: none"> • The same methods would apply to a designbuild project, but the PDT may wish to consider also inviting the design-builder to attend and participate in certain meetings, such as those involving permitting agencies, Utilities, and other stakeholders that would be affected by the design-builder's ultimate project design. <p><u>Team Responsibilities</u></p> <ul style="list-style-type: none"> • CM's Pre-Construction Team: As soon as the Department completes the plans and technical specifications and the CM obtains permitting approval, the CM should arrange for procurement of long-lead items, as authorized by the Department. <p><u>Project Controls</u></p> |

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| | <ul style="list-style-type: none"> • The increase or decrease in the cost of the project resulting from a change in the project may be determined using a properly itemized and supported lump sum amount, unit prices, or by time and materials costs with a fixed or percentage sufficient to permit evaluation by the Department. <p><u>Information Required</u></p> <ul style="list-style-type: none"> • Alternate Designs (structures or other pre-engineered items): The special provisions should state that a delay in review and acceptance of alternate design submissions or a delay in revisions to required permits or any other delays related to alternate design will not extend the contract duration. <p><u>No Excuse Incentives</u></p> <p>There are no excuses for adjusting this date including utilities, permitting, change orders, weather, differing site conditions, or any other cause short of a natural catastrophe.</p> <p><u>Sample Provisions</u></p> <ul style="list-style-type: none"> • Florida DOT 8-13.1 “Bonus” Payment and Waiver of Contractor Claims. <ul style="list-style-type: none"> ○ The parties anticipate that delays may be caused by or arise from any number of events during the course of the Contract, including, but not limited to, work performed, work deleted, change orders, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right of way issues, permitting issues, actions of Suppliers, Subcontractors or other Contractors, actions by third parties, shop drawing approval process delays, expansion of the physical limits of the project to make it functional, weather, weekends, holidays, suspensions of Contractor’s operations, or other such events, forces or factors sometimes experienced in highway construction work. ○ The Contractor shall notify the Department in writing, within 60 days of the final acceptance of the work in the Contract by the Department, that the Contractor elects to be paid the “Bonus” which the Contractor is eligible to be paid based on the actual final acceptance date, and such written notice shall constitute a full and complete waiver, release and acknowledgment of satisfaction by the Contractor of any and all claims, causes of action, issues, demands, disputes, matters or controversies, of any nature or kind whatsoever, known or unknown, against the Department, its employees, officers, agents, representatives, consultants, and their respective employees, officers and representatives, the Contractor has or may have as to work performed, work deleted, change orders, supplemental agreements, delays, disruptions, differing site conditions, utility conflicts, design changes or defects, time extensions, extra work, right of way issues, permitting issues, actions of suppliers or subcontractors or other Contractors, actions by third parties, shop drawing approval process delays, expansion |

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| | <p>of the physical limits of the project to make it functional, weather, weekends, holidays, suspensions of the Contractor’s operations, extended or unabsorbed home office or job site overhead, lump sum maintenance of traffic adjustments, lost profits, prime mark-up on subcontractor work, acceleration costs, any and all direct and indirect costs, any other adverse impacts, events, conditions, circumstances or potential damages, on or pertaining to, or as to or arising out of the Contract.</p> <ul style="list-style-type: none"> • Michigan Material and Workmanship Pavement Warranty <ul style="list-style-type: none"> ○ All warranty work shall be performed under permit issued by the Region Utilities & Permits Engineer. ○ Shall follow a Department approved maintaining traffic plan when performing warranty work. All warranty work shall be performed under permit issued by the Region Utilities & Permits Engineer. The permit fee and an individual permit performance bond shall not be required. The permit insurance requirements, however, shall apply. <p>WORKSHEET 1 – EVALUATION OF PROJECT SCOPE AND CHARACTERISTICS</p> <table border="1" data-bbox="500 909 1393 1098"> <tr> <td data-bbox="500 909 849 1098"> <p>1e) Does the project present environmental permitting issues that would benefit from the construction manager or design-builder's assistance?</p> <p><input type="checkbox"/> A. No more than typical</p> <p><input type="checkbox"/> B. More than typical</p> <p><input type="checkbox"/> C. Much more than typical</p> </td> <td data-bbox="849 909 954 1098"> <p>1e) _____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p> </td> <td data-bbox="954 909 1060 1098"> <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p> </td> <td data-bbox="1060 909 1166 1098"> <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p> </td> <td data-bbox="1166 909 1271 1098"> <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p> </td> <td data-bbox="1271 909 1393 1098"> <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p> </td> </tr> </table> <p>Remainder are in the appendices.</p> | <p>1e) Does the project present environmental permitting issues that would benefit from the construction manager or design-builder's assistance?</p> <p><input type="checkbox"/> A. No more than typical</p> <p><input type="checkbox"/> B. More than typical</p> <p><input type="checkbox"/> C. Much more than typical</p> | <p>1e) _____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p> |
| <p>1e) Does the project present environmental permitting issues that would benefit from the construction manager or design-builder's assistance?</p> <p><input type="checkbox"/> A. No more than typical</p> <p><input type="checkbox"/> B. More than typical</p> <p><input type="checkbox"/> C. Much more than typical</p> | <p>1e) _____</p> <p>A. 5 pts B. 0 pts C. 0 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 5 pts</p> | <p>1e) _____</p> <p>A. 0 pts B. 5 pts C. 10 pts</p> | | |
| Commitment | <p>24 times (almost all relate to contracting and funding commitments)</p> <p><u>Request for Proposals</u></p> <p>The RFP must therefore provide enough detail about environmental conditions and commitments and the general status of the permitting process to clearly convey the level of risk to be absorbed by the design-builder for environmental compliance issues.</p> <p>Remainder in appendices.</p> | | | | | | |
| Compliance | <p>63 times</p> <p><u>Request for Proposals</u></p> <p>Approach to construction-related issues, such as: Environmental compliance.</p> <p><u>Additional Procurement Considerations</u></p> <ul style="list-style-type: none"> • A possible way to encourage superior performance is to tie incentives to exceeding project goals. The incentives should focus on key areas of performance that are important to the Department or other stakeholders. Such areas could include schedule, quality, environmental compliance, public relations, and public and worker safety. | | | | | | |

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| | <ul style="list-style-type: none"> • In developing incentive amounts, the PDT should keep in mind that the incentive amount should be attractive enough to entice the design-builder to achieve the desired result. The determination of this amount is rarely an exact calculation, and judgment is often necessary, particularly for areas having less tangible, or less quantifiable, benefits, such as improved public relations and environmental compliance. <p><u>Request for Qualifications</u></p> <ul style="list-style-type: none"> • Submitter’s organization (typically showing the chain of command) and key personnel. The RFQ may include descriptions of the types of personnel that must be identified in the SOQ (e.g., Contractor’s Project Manager, Quality Manager, Design Manager, Construction Manager, Traffic Engineer, Environmental Compliance Manager, etc.). (See Appendix 2.2-B.8) <p><u>Potential Changes to General Provisions</u></p> <ul style="list-style-type: none"> • Section 7 Legal Relations and Responsibility: Given the responsibilities shifted to the design-builder, permit procurement and compliance requirements may require change and/or expansion (7-1.01F, 7-1.01G, 7-1.04). <p><u>Request for Proposals</u></p> <ul style="list-style-type: none"> • The RFP must therefore provide enough detail about environmental conditions and commitments and the general status of the permitting process to clearly convey the level of risk to be absorbed by the design-builder for environmental compliance issues. • For projects having extreme environmental sensitivity, the RFP may require the Contractor to retain a qualified onsite inspector to ensure environmental compliance and to coordinate with the Department on environmental issues as they develop. <p><u>Construction Quality Management</u></p> <ul style="list-style-type: none"> • The design-builder may perform many of the sampling and testing responsibilities traditionally performed by the Department’s inspector. These inspection tasks will generally include the following: Auditing environmental compliance records; <p><u>Appendix 2.2 – Environmental compliance</u></p> |

| Keyword | Presence | | | | | | | | | | | | | | | | | | | | | | |
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| | <table border="1" data-bbox="500 235 1435 310"> <tr> <td>Owner</td> <td>Washington Department of Transportation</td> </tr> <tr> <td>Project</td> <td>Design Build General Provisions</td> </tr> <tr> <td>Date of Issuance</td> <td>May 16, 2005</td> </tr> </table> <p data-bbox="506 338 837 363">1-08.11(2).2 Environmental Compliance</p> <p data-bbox="506 365 1386 436">General. The portion of the incentive award allocated to Environmental Compliance is up to \$500,000. This is the maximum amount that can be earned from all environmental compliance criteria combined. The amount is divided among the six environmental compliance criteria, as shown in Table 9.</p> <p data-bbox="506 464 568 485">Table 9</p> <p data-bbox="506 487 972 508">Incentive Awards and Criteria for Environmental Compliance</p> <table border="1" data-bbox="506 510 1260 705"> <thead> <tr> <th data-bbox="506 510 568 531">Criteria</th> <th data-bbox="1045 510 1260 531">Maximum Possible Award</th> </tr> </thead> <tbody> <tr> <td data-bbox="506 533 967 554">A. Maintaining positive relationships with resource agencies</td> <td data-bbox="1179 533 1260 554">\$50,000</td> </tr> <tr> <td data-bbox="506 556 927 577">B. Avoiding and minimizing impacts to sensitive areas.</td> <td data-bbox="1179 556 1260 577">\$150,000</td> </tr> <tr> <td data-bbox="506 579 911 600">C. Provide needed environmental clearances timely.</td> <td data-bbox="1195 579 1260 600">\$50,000</td> </tr> <tr> <td data-bbox="506 602 889 623">D. Wash equipment prior to bringing onto Project.</td> <td data-bbox="1195 602 1260 623">\$50,000</td> </tr> <tr> <td data-bbox="506 625 1166 646">E. Implement and maintain Best Management Practices for temporary erosion control.</td> <td data-bbox="1179 625 1260 646">\$150,000</td> </tr> <tr> <td data-bbox="506 648 1024 669">F. Provide additional noise reduction measures during construction</td> <td data-bbox="1179 648 1260 669">\$50,000</td> </tr> <tr> <td data-bbox="506 672 686 693">Total Maximum Award:</td> <td data-bbox="1179 672 1260 693">\$500,000</td> </tr> </tbody> </table> <p data-bbox="506 728 883 749">Evaluation of Environmental Compliance Criteria</p> <p data-bbox="506 751 1216 772"><u>General.</u> The Environmental Compliance criteria will be measure monthly as Work progress.</p> <p data-bbox="506 774 1414 825"><u>Period Incentive Award Earned.</u> In determining the quarterly incentive award earned, the evaluation team will consider the Monthly Evaluation Reports for that quarter.</p> <p data-bbox="488 898 647 926"><u>Appendix 2.2</u></p> <ul data-bbox="537 936 1471 1430" style="list-style-type: none"> • Project Goals: <ul style="list-style-type: none"> ○ Minnesota Department of Transportation TH 52/Oronoco Design-Build Project ○ Environmental Compliance includes: Adhere to local, State, and Federal environmental regulations and/or permits that are required in executing and/or completing the Project.; Incorporate Best Management Practices to control sediment, stormwater runoff/discharge, water quality treatment, or other environmental parameters that are established for the Project. • Evaluation Process: <ul style="list-style-type: none"> ○ Minnesota Department of Transportation TH 52/Oronoco Design-Build Project ○ Ability to develop and implement an effective environmental compliance plan <p data-bbox="488 1472 1427 1535">Remainder of compliance terms are in the appendix – remainder reference the wrong kind of compliance</p> | Owner | Washington Department of Transportation | Project | Design Build General Provisions | Date of Issuance | May 16, 2005 | Criteria | Maximum Possible Award | A. Maintaining positive relationships with resource agencies | \$50,000 | B. Avoiding and minimizing impacts to sensitive areas. | \$150,000 | C. Provide needed environmental clearances timely. | \$50,000 | D. Wash equipment prior to bringing onto Project. | \$50,000 | E. Implement and maintain Best Management Practices for temporary erosion control. | \$150,000 | F. Provide additional noise reduction measures during construction | \$50,000 | Total Maximum Award: | \$500,000 |
| Owner | Washington Department of Transportation | | | | | | | | | | | | | | | | | | | | | | |
| Project | Design Build General Provisions | | | | | | | | | | | | | | | | | | | | | | |
| Date of Issuance | May 16, 2005 | | | | | | | | | | | | | | | | | | | | | | |
| Criteria | Maximum Possible Award | | | | | | | | | | | | | | | | | | | | | | |
| A. Maintaining positive relationships with resource agencies | \$50,000 | | | | | | | | | | | | | | | | | | | | | | |
| B. Avoiding and minimizing impacts to sensitive areas. | \$150,000 | | | | | | | | | | | | | | | | | | | | | | |
| C. Provide needed environmental clearances timely. | \$50,000 | | | | | | | | | | | | | | | | | | | | | | |
| D. Wash equipment prior to bringing onto Project. | \$50,000 | | | | | | | | | | | | | | | | | | | | | | |
| E. Implement and maintain Best Management Practices for temporary erosion control. | \$150,000 | | | | | | | | | | | | | | | | | | | | | | |
| F. Provide additional noise reduction measures during construction | \$50,000 | | | | | | | | | | | | | | | | | | | | | | |
| Total Maximum Award: | \$500,000 | | | | | | | | | | | | | | | | | | | | | | |
| Monitor | 28 times – these all relate to contract compliance, pavement, and other non-environmental factors | | | | | | | | | | | | | | | | | | | | | | |
| Mitigation | 14 times <u>Assemble Project Selection Team / Roles & Responsibilities</u> <ul style="list-style-type: none"> • Environmental: All mitigation must be identified. <u>Risk Allocation</u> | | | | | | | | | | | | | | | | | | | | | | |

| Keyword | Presence |
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| | <ul style="list-style-type: none"> • In addition, responsibility for obtaining any other environmental clearances required outside of the NEPA/CEQA process can also be shifted to the design-builder, particularly if they relate to more construction-specific permits and approvals, such as those required for soil disturbing operations. However, prior to shifting this risk to the design-builder, the Department should carefully consider the appropriate level of conceptual design needed to convey environmental conditions and mitigation requirements to the design-builder. • If, however, the initial Environmental Assessment or Environmental Impact Statement suggests some high-risk elements (e.g., wetland mitigation), the Department should consider securing the necessary permits itself, in advance of the RFP, or providing a higher level of preliminary design and/or environmental studies to offset some of the risk to the design-builder. <p><u>Request for Proposals</u></p> <ul style="list-style-type: none"> • For example, environmental documents included in the reference documents may identify certain mitigation or permit requirements. <p><u>SHARED RISK CONTINGENCY</u></p> <ul style="list-style-type: none"> • Certain types of projects or risks are more conducive to the use of shared risk contingency pools. Projects involving environmental mitigation, utility or other third party issues, or that otherwise have a high likelihood of scope changes for reasons unrelated to owner directed changes are good examples of the kind of risks amenable to a shared risk contingency pool. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Colorado

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes

<https://www.codot.gov/business/designsupport/innovative>

The page includes:

Manuals

- Construction Manager/General Contractor (CM/GC) January 2015
- CM/GC Manual Appendix January 2015
- CDOT Innovative Contracting Guidelines Revised January 2015
- 2016 CDOT Design-Build Manual September 2016

Standard and Project Special Provisions

- Value Engineering Change Proposals
- CDOT Innovative Contracting Provisions
- Innovative Contracting Bulletins

Training

- An Introduction to the Construction Management/General Contractor Delivery Method (May 18, 2012)
- Project Delivery Selection Matrix. How does CDOT decide? (May 18, 2012)
- Construction Manager/General Contractor Delivery Method (November 2, 2012)

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes

CDOT Innovative Contracting Guidelines:

<https://www.codot.gov/business/designsupport/innovative/documents/Innovative%20Contracting%20Guidelines.doc>

2016 CDOT Design-Build Manual:

<https://www.codot.gov/business/designsupport/innovative>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

CDOT Innovative Contracting Guidelines:

| Keyword | Presence |
|-------------|--|
| NEPA | No |
| Environment | <u>Value Engineering Contracts - Risks</u> This includes environmental impacts, duration of activity impacts to facility users or adjacent property occupants, previously agreements or project commitments, impacts to right-of-way, impacts to utilities, phasing, seasonal |

| Keyword | Presence |
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| | work restrictions, DBE commitments to the Contract, and the overall performance and service life of the proposed modification. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p><u>Cost-Plus-Time or (A + B) Contracts - Risks</u> The plans and specifications should indicate any unusual conditions or restrictions the Contractor may be required to work under, such as prohibiting jack hammering, pile driving or heavy equipment operation during the night due to noise problems.</p> |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | <p><u>Incentives / Disincentives Contracts</u> Incentives are not to be used to ensure Regulations, or requirements of Permits, are complied with. The Contractor shall comply with all Regulations and Permit requirements under standard Contract practice.</p> <p><u>Lump Sum Incentive/Disincentive</u> Incentives are not to be used to ensure Regulations, or requirements of Permits, are complied with. The Contractor shall comply with all Regulations and Permit requirements under standard Contract practice.</p> |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

2016 CDOT Design-Build Manual:

| Keyword | Presence |
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| NEPA | <p><u>Federal Transportation Acts and Design-Build</u></p> <ul style="list-style-type: none"> • Among the revisions made by SAFETEA-LU were the elimination of the dollar thresholds for qualified projects and permission to release a Request for Proposal (RFP) or award a Design-Build contract prior to completion of the National Environmental Policy Act of 1969 (NEPA) process. • MAP-21 made provisions to streamline the environmental review process and broadened the ability for states to acquire or preserve ROW for a transportation facility prior to completion of the review process required under NEPA. <p><u>Federal Regulations and the NEPA Process</u> The section that pertains to how far an STD can take a procurement process prior to the conclusion of the NEPA process follows: § 636.109 How does the NEPA process relate to the design-build procurement process?</p> |

| Keyword | Presence |
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| | <p>The purpose of this section is to ensure that there is an objective NEPA process, that public officials and citizens have the necessary environmental impact information for federally funded actions before actions are taken, and that design-build proposers do not assume an unnecessary amount of risk in the event the NEPA process results in a significant change in the proposal, and that the amount payable by the contracting agency to the design-builder does not include significant contingency as the result of risk placed on the design-builder associated with significant changes in the project definition arising out of the NEPA process.</p> <p>(1) The contracting agency may permit the design-builder to proceed with preliminary design; (2) The contracting agency may permit any design and engineering activities to be undertaken for the purposes of defining the project alternatives and completing the NEPA alternatives analysis and review process; complying with other related environmental laws and regulations; supporting agency coordination, public involvement, permit applications, or development of mitigation plans; or developing the design of the preferred alternative to a higher level of detail when the lead agencies agree that it is warranted in accordance with 23 U.S.C. 139(f)(4)(D); (3) The design-build contract must include appropriate provisions preventing the design builder from proceeding with final design activities and physical construction prior to the completion of the NEPA process (contract hold points or another method of issuing multi-step approvals must be used); (4) The design-build contract must include appropriate provisions ensuring that no commitments are made to any alternative being evaluated in the NEPA process and that the comparative merits of all alternatives presented in the NEPA document, including the no-build alternative, will be evaluated and fairly considered; (5) The design-build contract must include appropriate provisions ensuring that all environmental and mitigation measures identified in the NEPA document will be implemented; (6) The design-builder must not prepare the NEPA document or have any decision making responsibility with respect to the NEPA process; (7) Any consultants who prepare the NEPA document must be selected by and subject to the exclusive direction and control of the contracting agency; (8) The design-builder may be requested to provide information about the project and possible mitigation actions, and its work product may be considered in the NEPA analysis and included in the record; and (9) The design-build contract must include termination provisions in the event that the no-build alternative is selected. (c) The contracting agency must receive prior FHWA concurrence before issuing the RFP, awarding a design-build contract and proceeding with preliminary design work under the design-build contract. Should the contracting agency proceed with any of the activities specified in this section before the completion of the NEPA process (with the exception of preliminary design, as provided in paragraph (d) of this section), the FHWA's concurrence merely constitutes the FHWA approval that any such activities complies with Federal requirements and does not constitute project authorization or obligate Federal funds. (d) The FHWA's authorization and obligation of preliminary engineering and other preconstruction funds prior to the completion of the NEPA process is limited to preliminary design and such additional activities as may be necessary to complete the NEPA process. After the completion of the NEPA process, the FHWA may issue an authorization to proceed with final design and construction and obligate Federal funds for such purposes.</p> |

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| | <p data-bbox="412 279 922 302">Table 3-1. Example of Design-Build Project Risk Allocation Matrix</p> <table border="1" data-bbox="412 302 1377 552"> <thead> <tr> <th data-bbox="412 302 935 325"></th> <th colspan="2" data-bbox="935 302 1138 325">Design-Bid-Build</th> <th colspan="2" data-bbox="1138 302 1377 325">Design-Build</th> </tr> <tr> <th data-bbox="412 325 935 348">Risk</th> <th data-bbox="935 325 1027 348">Agency</th> <th data-bbox="1027 325 1138 348">Contractor</th> <th data-bbox="1138 325 1247 348">Agency</th> <th data-bbox="1247 325 1377 348">Contractor</th> </tr> </thead> <tbody> <tr> <td colspan="5" data-bbox="412 348 1377 371">Design Issues</td> </tr> <tr> <td data-bbox="412 371 935 394">Project scope definition</td> <td data-bbox="935 371 1027 394">X</td> <td data-bbox="1027 371 1138 394"></td> <td data-bbox="1138 371 1247 394">X</td> <td data-bbox="1247 371 1377 394"></td> </tr> <tr> <td data-bbox="412 394 935 417">Design criteria</td> <td data-bbox="935 394 1027 417">X</td> <td data-bbox="1027 394 1138 417"></td> <td data-bbox="1138 394 1247 417">X</td> <td data-bbox="1247 394 1377 417"></td> </tr> <tr> <td data-bbox="412 417 935 441">Geotech investigation – Initial borings on preliminary design</td> <td data-bbox="935 417 1027 441">X</td> <td data-bbox="1027 417 1138 441"></td> <td data-bbox="1138 417 1247 441">X</td> <td data-bbox="1247 417 1377 441"></td> </tr> <tr> <td data-bbox="412 441 935 464">Geotech investigation – Initial borings on Proposal</td> <td data-bbox="935 441 1027 464">X</td> <td data-bbox="1027 441 1138 464"></td> <td data-bbox="1138 441 1247 464"></td> <td data-bbox="1247 441 1377 464">X</td> </tr> <tr> <td data-bbox="412 464 935 487">Plan conformance with regulation/guide/RFP</td> <td data-bbox="935 464 1027 487">X</td> <td data-bbox="1027 464 1138 487"></td> <td data-bbox="1138 464 1247 487"></td> <td data-bbox="1247 464 1377 487">X</td> </tr> <tr> <td colspan="5" data-bbox="412 487 1377 510">Environmental</td> </tr> <tr> <td data-bbox="412 510 935 533">NEPA/SEPA</td> <td data-bbox="935 510 1027 533">X</td> <td data-bbox="1027 510 1138 533"></td> <td data-bbox="1138 510 1247 533">X</td> <td data-bbox="1247 510 1377 533"></td> </tr> </tbody> </table> <p data-bbox="412 627 740 651"><u>Project Management Team:</u></p> <p data-bbox="412 661 1235 726">The PMT should also include the CDOT NEPA Manager and CDOT legal counsel on complex projects.</p> <p data-bbox="412 770 656 793"><u>Design Development</u></p> <p data-bbox="412 804 1406 974">The NEPA process needs to be carefully addressed in the initial project development phase. The project team needs to understand and distinguish which elements of NEPA are to be completed by CDOT (and when), and which elements of NEPA are the Design-Builders responsibility. NEPA processes can have a significant impact on the project schedule.</p> <p data-bbox="412 984 1224 1008">Listed under ‘Reference Documents’ under ‘Design Build Documents’</p> <p data-bbox="412 1052 1000 1075"><u>Design Development of the Reference Documents</u></p> <ul data-bbox="456 1094 1411 1297" style="list-style-type: none"> • Another example is invoking certain elements of the NEPA documents (when they are included in the Reference Documents instead of Book 3). • The NEPA process should be considered when advancing the design development. NEPA regulations dissuade developing the overall design of the project to more than 30 percent prior to the completion of the NEPA decision document. <p data-bbox="412 1344 1127 1367"><u>Development and Structure of the Request for Qualifications</u></p> <ul data-bbox="456 1377 1398 1547" style="list-style-type: none"> • Submitter Experience: Submitter experience is provided in both the narrative of the Proposal and in accompanying forms that provide project descriptions. The RFQ typically identifies the specific types of experience to be evaluated. Some typical types of experience follow: National Environmental Policy Act (NEPA)/environmental compliance in Design-Build <p data-bbox="412 1593 781 1617"><u>Additional Requested Elements</u></p> <p data-bbox="412 1627 1398 1759">AREs do not always fall within the umbrella of the NEPA decision document governing the project. In those cases, the proposers need to be informed of their responsibilities related to obtaining the necessary environmental clearances for the ARE.</p> <p data-bbox="412 1806 1289 1829"><u>Alternative Configuration Concept / Alternative Technical Concept Process</u></p> | | Design-Bid-Build | | Design-Build | | Risk | Agency | Contractor | Agency | Contractor | Design Issues | | | | | Project scope definition | X | | X | | Design criteria | X | | X | | Geotech investigation – Initial borings on preliminary design | X | | X | | Geotech investigation – Initial borings on Proposal | X | | | X | Plan conformance with regulation/guide/RFP | X | | | X | Environmental | | | | | NEPA/SEPA | X | | X | |
| | Design-Bid-Build | | Design-Build | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Risk | Agency | Contractor | Agency | Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Issues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project scope definition | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design criteria | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on preliminary design | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on Proposal | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plan conformance with regulation/guide/RFP | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| NEPA/SEPA | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | <p>ACCs and ATCs do not always fall within the umbrella of the NEPA decision document governing the project. In those cases, the proposers need to be informed of their responsibilities related to obtaining the necessary environmental clearances for the ACC/ATC.</p> <p><u>Design-Build Delivery Interface with Other Processes: Environmental Processes</u></p> <ul style="list-style-type: none"> • Design-Build procurements may proceed to award prior to the conclusion of the NEPA process and obtaining a decision document. • Design-Build may proceed with the preliminary design after the award provided certain conditions are met to maintain the integrity of the NEPA process when not yet completed. • FHWA approval is necessary prior to issuing the RFP, awarding the project, and proceeding with the preliminary design in projects where the NEPA process is not complete. • Per guidance from FHWA, CDOT has established a standard of practice that prohibits the issuance of a final RFP on Design-Build projects until the NEPA process has been completed and a decision document has been signed. • If the NEPA process has not been completed prior to the issuance of an SOQ or an RFP, the solicitation document must include a statement of the status of the NEPA process and a statement that the procurement process and preliminary design are consistent with the NEPA requirements and mitigations and do not preclude any of the NEPA alternatives currently under consideration. • When a specific Design-Build project is developed within the limits of a previously completed NEPA decision document, it is not uncommon for the design development of the project to vary somewhat from the preferred alternative of the NEPA decision document. In those instances, it may be determined that a formal environmental reevaluation is required to be completed prior to the issuance of the final RFP in order to determine the requirements for the final NEPA approvals. • It is not uncommon for Design-Builders to develop designs that are not fully consistent with the final NEPA decision documents, usually as a result of ACCs and ATCs. In those cases, the responsibility and risk for obtaining a revised environmental clearance is typically allocated to the Design-Builder through conditional approval of the ACCs and ATCs. • In situations where the NEPA process had not been completed prior to the Design-Builder starting work, the Designer Builder’s specific responsibilities concerning NEPA approvals and associated environmental permitting processes must be clearly defined in the RFP and Contract Documents. The process requires the Design-Builder to closely coordinate with both CDOT and FHWA. <p><u>FHWA Processes</u></p> <ul style="list-style-type: none"> • The stewardship agreement stipulates that Design-Build projects that require coordination between CDOT and FHWA must determine the FHWA level of project oversight. The Colorado Division of FHWA determines |

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| | <p>whether a project is a Project of Division Interest (PoDI). If the project is determined to be a PoDI, FHWA and CDOT jointly develop a project-specific document titled "Oversight Roles and Responsibilities." The document should typically address the following areas of coordination: FHWA approval of NEPA decision documents, and reevaluation if applicable</p> <ul style="list-style-type: none"> • A key role of FHWA is to ensure that NEPA processes are appropriately completed and approved for the project • The FHWA typically requires the completion of NEPA decision documents prior to IAR (Interstate Access Request) signature. <p><u>Book 2 – Technical Requirements - Environmental</u> CDOT must provide a thorough scope with clear definition for all environmental activities. The National</p> <ul style="list-style-type: none"> • Environmental Policy Act (NEPA) decision document typically must be completed and incorporated into the final RFP. Additional discussion on NEPA processes for Design-Build delivery is provided in this manual in Chapter 5, Section 5.4, "Design-Build Delivery Interface with Other Processes." The environmental requirements of the project must be consistent with those of the NEPA document and specify consequences for deviating from the NEPA document. • Require full compliance with the mitigation requirements of the NEPA decision document • Typically, CDOT performs a noise analysis and develops proposed mitigations as a part of the NEPA process. The NEPA mitigation often includes stakeholders' interests. • In the NEPA decision document there are important factors that should be considered during design development. Advanced investigations may be necessary by CDOT for further design development. For example, if contamination is identified during the NEPA process, the risks associated with the project environmental compliance can be significantly reduced through advanced investigation by CDOT. An important design development activity by CDOT is to advance the permitting process as much as possible given the limited advancement of the project design in the pre-bid phase. <p><u>Book 2 – Right of Way</u></p> <ul style="list-style-type: none"> • During the acquisition of ROW or easements the Contractor is responsible for: completing a Phase 1 Environmental Assessment for easements and ROW not identified in the NEPA decision document. <p><u>Book 2 – Landscaping</u></p> <ul style="list-style-type: none"> • Most of the work effort is focused on the landscaping requirements for wetlands and riparian mitigations necessary to comply with the project NEPA requirements, Senate Bill 40 (SB 40), and the COE permitting requirements. |
| Environment | <u>Federal Transportation Acts and Design-Build</u> |

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| | <p>MAP-21 made provisions to streamline the environmental review process and broadened the ability for states to acquire or preserve ROW for a transportation facility prior to completion of the review process required under NEPA.</p> <p><u>State Legislation regarding Design-Build Utility Relocations</u> (4) The department shall provide written notice to any utility company of a design-build transportation project that will require the relocation of the company's facilities as soon as practicable following the environmental clearance for the project. The notice shall include all available and relevant information concerning the project, including the performance schedule for the project within which the utility relocation work must be completed in order to coordinate with and avoid delay in the performance of the project.</p> <p><u>Definitions</u></p> <ul style="list-style-type: none"> • Environmental Approvals - All local, state, and federal environmental requirements, including, but not limited to decision documents, COE Section 404 Permit, COE Section 401 Certificate, CDOT Municipal Separate Storm Sewer System (MS4) Colorado Discharge Permit System (CDPS) Permit, and SB 40 Certification. • Environmental Compliance Work Plan - A plan required to be developed by the Contractor and Approved by CDOT that specifically identifies all environmental compliance requirements for the project and the Contractor's approach for obtaining compliance. <p><u>Selecting the Project Delivery Method</u> The project delivery method is the process by which a project is comprehensively designed, procured, and constructed. The delivery method generally begins with the development of a project design and continues through the administration of the construction. The choice of delivery method influences many aspects of the project at different stages, including the: environmental approvals;</p> <p><u>The Project Delivery Selection Matrix</u> The PDSM is typically prepared during a four-hour workshop with a delivery selection panel that should consist of the following members: Environmental Specialty Group representation (for most projects with environmental clearances)</p> <p><u>Comparison of Project Risks for Delivery Methods</u></p> |

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| | <p>Table 2-2. Comparison of Project Risks for Delivery Methods (continued)</p> <table border="1"> <thead> <tr> <th data-bbox="418 260 581 281">Project Risk</th> <th data-bbox="581 260 829 281">D-B-B</th> <th data-bbox="829 260 1094 281">Design-Build</th> <th data-bbox="1094 260 1427 281">CMGC</th> </tr> </thead> <tbody> <tr> <td data-bbox="418 310 581 331">Environmental</td> <td data-bbox="581 310 829 401"> <ul style="list-style-type: none"> Risk is best mitigated by obtaining all environmental clearances prior to bid </td> <td data-bbox="829 310 1094 527"> <ul style="list-style-type: none"> Certain environmental approvals and processes that can be fully defined can be allocated to the Design-Builder. Agreements or memorandums of understanding (MOUs) with approval agencies prior to procurement are best to minimize risks </td> <td data-bbox="1094 310 1427 443"> <ul style="list-style-type: none"> Environmental risks and responsibilities can be collectively identified, minimized, and allocated by the owner, the designer, and the contractor prior to the negotiation of the construction agreed price (CAP) </td> </tr> </tbody> </table> | Project Risk | D-B-B | Design-Build | CMGC | Environmental | <ul style="list-style-type: none"> Risk is best mitigated by obtaining all environmental clearances prior to bid | <ul style="list-style-type: none"> Certain environmental approvals and processes that can be fully defined can be allocated to the Design-Builder. Agreements or memorandums of understanding (MOUs) with approval agencies prior to procurement are best to minimize risks | <ul style="list-style-type: none"> Environmental risks and responsibilities can be collectively identified, minimized, and allocated by the owner, the designer, and the contractor prior to the negotiation of the construction agreed price (CAP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project Risk | D-B-B | Design-Build | CMGC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environmental | <ul style="list-style-type: none"> Risk is best mitigated by obtaining all environmental clearances prior to bid | <ul style="list-style-type: none"> Certain environmental approvals and processes that can be fully defined can be allocated to the Design-Builder. Agreements or memorandums of understanding (MOUs) with approval agencies prior to procurement are best to minimize risks | <ul style="list-style-type: none"> Environmental risks and responsibilities can be collectively identified, minimized, and allocated by the owner, the designer, and the contractor prior to the negotiation of the construction agreed price (CAP) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <p>Example of Design-Build Project Risk Allocation Matrix</p> <p>Table 3-1. Example of Design-Build Project Risk Allocation Matrix</p> <table border="1"> <thead> <tr> <th data-bbox="418 604 467 646" rowspan="2">Risk</th> <th colspan="2" data-bbox="1013 604 1159 625">Design-Bid-Build</th> <th colspan="2" data-bbox="1273 604 1386 625">Design-Build</th> </tr> <tr> <th data-bbox="987 632 1062 653">Agency</th> <th data-bbox="1084 632 1175 653">Contractor</th> <th data-bbox="1214 632 1289 653">Agency</th> <th data-bbox="1312 632 1427 653">Contractor</th> </tr> </thead> <tbody> <tr> <td colspan="5" data-bbox="418 659 542 680">Design Issues</td> </tr> <tr> <td data-bbox="418 686 639 707">Project scope definition</td> <td data-bbox="987 686 1013 707">X</td> <td data-bbox="1084 686 1175 707"></td> <td data-bbox="1214 686 1240 707">X</td> <td data-bbox="1312 686 1427 707"></td> </tr> <tr> <td data-bbox="418 714 558 735">Design criteria</td> <td data-bbox="987 714 1013 735">X</td> <td data-bbox="1084 714 1175 735"></td> <td data-bbox="1214 714 1240 735">X</td> <td data-bbox="1312 714 1427 735"></td> </tr> <tr> <td data-bbox="418 741 932 762">Geotech investigation – Initial borings on preliminary design</td> <td data-bbox="987 741 1013 762">X</td> <td data-bbox="1084 741 1175 762"></td> <td data-bbox="1214 741 1240 762">X</td> <td data-bbox="1312 741 1427 762"></td> </tr> <tr> <td data-bbox="418 768 850 789">Geotech investigation – Initial borings on Proposal</td> <td data-bbox="987 768 1013 789">X</td> <td data-bbox="1084 768 1175 789"></td> <td data-bbox="1214 768 1289 789"></td> <td data-bbox="1354 768 1380 789">X</td> </tr> <tr> <td data-bbox="418 795 802 816">Plan conformance with regulation/guide/RFP</td> <td data-bbox="987 795 1013 816">X</td> <td data-bbox="1084 795 1175 816"></td> <td data-bbox="1214 795 1289 816"></td> <td data-bbox="1354 795 1380 816">X</td> </tr> <tr> <td colspan="5" data-bbox="418 823 542 844">Environmental</td> </tr> <tr> <td data-bbox="418 850 526 871">NEPA/SEPA</td> <td data-bbox="987 850 1013 871">X</td> <td data-bbox="1084 850 1175 871"></td> <td data-bbox="1214 850 1240 871">X</td> <td data-bbox="1312 850 1427 871"></td> </tr> <tr> <td data-bbox="418 877 769 898">Environmental Mitigation Commitments¹</td> <td data-bbox="987 877 1013 898">X</td> <td data-bbox="1084 877 1175 898"></td> <td data-bbox="1214 877 1240 898">X</td> <td data-bbox="1354 877 1380 898">X</td> </tr> <tr> <td data-bbox="418 905 753 926">Final Design Environmental Approvals¹</td> <td data-bbox="987 905 1013 926">X</td> <td data-bbox="1084 905 1175 926"></td> <td data-bbox="1214 905 1240 926">X</td> <td data-bbox="1354 905 1380 926">X</td> </tr> <tr> <td data-bbox="418 932 526 953">Permitting</td> <td data-bbox="987 932 1013 953">X</td> <td data-bbox="1084 932 1175 953"></td> <td data-bbox="1214 932 1240 953">X</td> <td data-bbox="1354 932 1380 953">X²</td> </tr> </tbody> </table> <p>Design Development</p> <ul style="list-style-type: none"> The focus of this phase of the design development is to: advance the design as necessary to properly identify, manage, and allocate risks, such as Right-of-Way (ROW), environmental compliance, and so forth. This is usually accomplished by establishing design task forces through which the Design-Builder and the owner collaborate on project-related specialties such as environmental compliance, drainage, traffic management, public relations, roadway and structure design, and so forth. <p>Organization of Design Documents</p> <ul style="list-style-type: none"> The project limits are also important with regard to environmental clearances. The project limits should ensure that the environmental footprint of the construction does not exceed that of the environmental decision document. The Basic Configuration defines ranges of acceptable alignments to provide flexibility while ensuring that the facility aligns with adjacent facilities, environmental requirements, and long range corridor plans. <p>Preliminary Investigations</p> <p>Environmental Investigations: Additional environmental information is often necessary to reduce risks for both the owner and the Design-Builder. In particular, Hazardous Materials Investigations should be conducted to identify the best approach to minimize and/or allocate hazardous materials risk. At a minimum, investigations should be performed to accurately characterize the nature and</p> | Risk | Design-Bid-Build | | Design-Build | | Agency | Contractor | Agency | Contractor | Design Issues | | | | | Project scope definition | X | | X | | Design criteria | X | | X | | Geotech investigation – Initial borings on preliminary design | X | | X | | Geotech investigation – Initial borings on Proposal | X | | | X | Plan conformance with regulation/guide/RFP | X | | | X | Environmental | | | | | NEPA/SEPA | X | | X | | Environmental Mitigation Commitments ¹ | X | | X | X | Final Design Environmental Approvals ¹ | X | | X | X | Permitting | X | | X | X ² |
| Risk | Design-Bid-Build | | Design-Build | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Agency | Contractor | Agency | Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Issues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project scope definition | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design criteria | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on preliminary design | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on Proposal | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Environmental | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Environmental Mitigation Commitments ¹ | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Design Environmental Approvals ¹ | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Permitting | X | | X | X ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | <p>locations of any hazardous materials. Additional site investigation to accommodate potential project Permanent Water Quality (PWQ) features may also be warranted.</p> <p><u>Design Development of the Reference Documents</u></p> <ul style="list-style-type: none"> • The Design-Build Institute of America (DBIA) addresses the level of design development: <ul style="list-style-type: none"> ○ Procurement documents need to address line and grade development in a manner that allows flexibility with ROW, environmental, storm water facilities, utility impacts and other project characteristics without advancing the design to a level that stifles innovation and best value. ○ A defined set of line and grade documents will provide sufficient detail to define the project footprint, horizontal and vertical alignment, proposed bridge and retaining structures, required environmental mitigation, ROW and utility impacts while still allowing for best-value procurement that achieves maximum benefit from the use of design-build delivery. • The level of design development required prior to issuing the project RFP should flow out of a risk assessment and the initial completion of the Risk Register, as described in Chapter 3. Some common design elements that often need to be advanced are: Environmental permitting: In some cases, the permitting process can be advanced more effectively by CDOT than by the proposers during the procurement to minimize environmental agency approval risks. • The level of design development required prior to issuing the project RFP should flow out of a risk assessment and the initial completion of the Risk Register, as described in Chapter 3. Some common design elements that often need to be advanced are: Environmental permitting: In some cases, the permitting process can be advanced more effectively by CDOT than by the proposers during the procurement to minimize environmental agency approval risks. <p><u>Development and Structure of the Request for Qualifications</u></p> <ul style="list-style-type: none"> • Typical Key Personnel: Environmental manager • Management approach, [including]: environmental management <p><u>Design-Build Delivery Interface with Other Processes</u></p> <ul style="list-style-type: none"> • Design-Build delivery is unique in the way in which it interfaces with many processes that are integral parts of CDOT transportation projects. Primary among those are FHWA processes, environmental processes, and CDOT internal administrative processes. • Design-Build delivery interface with environmental processes through the procurement phase is shown in Figure 5-9 [(see end of this document – aeh)]. • Design-Build delivery interface with environmental processes through the procurement phase is shown in Figure 5-9. As the figure illustrates, |

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| | <p>environmental interface is important throughout the development and execution of Design-Build delivery. Most all significant transportation projects include elements of risk associated with the environmental conditions. As a result, environmental conditions play a role in the selection of the appropriate method of delivery, the initial project development, the development of the RFP, the procurement process, and ultimately the implementation of the project. In fact, if environmental risks, such as compliance or schedule, are not carefully managed in Design-Build delivery, the potential for negative consequences can be greater than in traditional D-B-B. Federal regulations establish the parameters by which state transportation departments may deliver projects using Design-Build (23 CFR Part 636). The environmental aspects of the regulation are stated in Chapter 1 of this manual.</p> <ul style="list-style-type: none"> • When a specific Design-Build project is developed within the limits of a previously completed NEPA decision document, it is not uncommon for the design development of the project to vary somewhat from the preferred alternative of the NEPA decision document. In those instances, it may be determined that a formal environmental reevaluation is required to be completed prior to the issuance of the final RFP in order to determine the requirements for the final NEPA approvals. • When an environmental reevaluation is necessary, its processes must be carefully determined and integrated into the design development procurement schedule for the project as it can often dictate the critical path of the project schedule. • It is not uncommon for Design-Builders to develop designs that are not fully consistent with the final NEPA decision documents, usually as a result of ACCs and ATCs. In those cases, the responsibility and risk for obtaining a revised environmental clearance is typically allocated to the Design-Builder through conditional approval of the ACCs and ATCs. <p><u>Structure and Content of the Request for Proposal: Book 1, Exhibit A: Acronyms and Definitions</u></p> <ul style="list-style-type: none"> • Nonetheless, usually there are some critical elements of the project that CDOT wants Approval authority over. The Quality Management Plan and the Environmental Compliance Plan are typical examples. <p><u>Book 2 - Technical Requirements</u></p> <ul style="list-style-type: none"> • From that perspective, the project development should be focused on minimizing that risk to ensure that the footprint provided to the Contractor (horizontally, vertically, and environmentally) is feasible to accomplish the requested improvements. • Environmental clearances should be included in the project schedule, especially if they are required to be completed prior to the start of construction. • Quality management must also address design and construction operations, such as environmental compliance, Public Information (PI), Maintenance of Traffic (MOT), and water quality. |

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| | <ul style="list-style-type: none"> • Environmental compliance in Design-Build can pose a considerable risk to both CDOT and the Contractor. The Contract allows the Contractor latitude in developing a design that varies from the design presented in the Reference Documents, allowing the Contractor the opportunity to develop the most efficient design. However, the variations in the design relative to Reference Documents may affect environmental impacts, which in turn may affect project clearances, the schedule, and so forth. • CDOT must provide a thorough scope with clear definition for all environmental activities. • The environmental requirements of the project must be consistent with those of the NEPA document and specify consequences for deviating from the NEPA document. • Modifications to the environmental requirements could result in changes to the project clearances, schedule, and so forth. • The Contractor is responsible for preparing and/or acquiring all new environmental supporting studies and permits as a result of Contractor-initiated changes and is responsible for time delay risks. • CDOT's Environmental Manager and Project Manager must work together in the development of the project scope and RFP and during the administration of the Contract to identify how the design can be flexible and innovative and what risk allocation is best suited on the project while ensuring environmental compliance. • The content of the environmental Technical Requirements should include the following: Identify Key Personnel requirements for the Contractor's environmental team. • Identify the Contractor's requirements for developing and executing an Environmental Compliance Plan for the project, including QC for environmental operations.; Identify all permits that the Contractor is required to obtain.; Identify the permits that CDOT is required to obtain.; Identify the Contractor's responsibilities to adhere to CDOT-obtained permits.; Identify permitting processes and time frames.; Identify environmental resources mitigation requirements (these may include: air quality; noise;; cultural, historical, archaeological, recreational 4(f) and 6(f); biological; visual; wetlands and riparian areas; and water quality requirements).; Identify all rules, requirements, and regulations that the Contractor is required to follow.; Identify requirements and responsibilities for mitigation measures for impacted wetlands and riparian areas.; Identify investigation and mitigation responsibilities for hazardous substances.; Identify Contractor responsibilities for developing and implementing a Hazardous Waste Management Plan.; Require full compliance with the mitigation requirements of the NEPA decision document.; Identify the steps to obtain environmental clearance for the Contractor's design when it changes the environmental conditions of the project. • The environmental Technical Requirements can present some of the most significant risks to the Contractor and the project as a whole if not properly addressed. Environmental permitting and mitigation requirements typically |

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| | <p>involve institutional third-party processes and approvals that are difficult to control and can lead to both schedule and cost risks to the project.</p> <ul style="list-style-type: none"> • CDOT should consider all items necessary to document compliance with the environmental decision document requirements and require sufficient documentation from the Contractor so this information can be easily passed on to third parties when appropriate. • Typically, environmental permitting can be more effectively managed by the owner because the owner has stronger working relationships with the permitting agencies and a better understanding of the processes. However, certain environmental approvals and processes that can be well defined can be allocated to the Contractor. • Specific requirements should be included in the RFP to ensure that the Contractor includes environmental requirements as part of the quality program. Failure of the Contractor to have a robust quality program for the environmental requirements transfers the burden for environmental quality requirements to CDOT. • Risks associated with individual environmental resources, as well as lessons learned, are identified in the online Appendix on the CDOT Innovative Contracting web page or by contacting CDOT Innovative Contracting. • CDOT should be careful to precisely define the risk allocation in the environmental Technical Requirements. • For example, if contamination is identified during the NEPA process, the risks associated with the project environmental compliance can be significantly reduced through advanced investigation by CDOT. • The special cases of third-party agreements with environmental permitting agencies and utilities are addressed in Book 2, Section 5 and Section 7, respectively. • Railroad impacts can also result in additional environmental clearance requirements for the project. In particular, historic railroads can trigger the National Historic Preservation Act, Section 106 process, which can take 9 to 12 months to complete. • Utilities may be made of hazardous materials such as asbestos and may require handling in accordance with Section 5 – Environmental. • The footprints of utilities impacts need to be assessed relative to the environmental clearance footprint of the project. If utility impacts exceed the limits of the environmental footprint, then additional environmental and FHWA clearances may be required prior to construction. • CDOT is able to best manage the ROW process; should acquisitions require condemnation and or immediate possession, CDOT has the legal authority to execute those processes through the Attorney General’s Office. Any acquired ROW needs to go through the environmental clearance process. • During the acquisition of ROW or easements the Contractor is responsible for: completing a Phase 1 Environmental Assessment for easements and ROW not identified in the NEPA decision document. • The Contractor also assumes the risk to manage temporary drainage and water quality during construction, in conformance with regulatory |

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| | <p>requirements enforced by the Colorado Department of Public Health and Environment (CDPHE).</p> <ul style="list-style-type: none"> • Similar to environmental mitigation, any increase in time/cost due to processing the ATC change is solely the responsibility of the Contractor. • From that perspective, the project design development should be focused on minimizing that risk and ensuring that the footprint provided to the Contractor (horizontally, vertically, and environmentally) is feasible to accomplish the requested improvements. <p><u>Book 3 – Applicable Standards, Data and Reports</u> Project documents that are often a part of Book 3 include environmental decision documents, permits, third-party agreements and IGAs, and FHWA Interstate Access Reports.</p> <p><u>Implementation</u> Construction Operations Team: Construction operations are those activities that are necessary to support the construction of the project. Construction operations include environmental compliance, utilities coordination, construction water quality management, traffic management, and public and stakeholder information processes.</p> |
| Cultural (resource) | <p><u>Book 2 - Technical Requirements</u> The content of the environmental Technical Requirements should include the following: Identify environmental resources mitigation requirements (these may include: air quality; noise; cultural, historical, archaeological, recreational 4(f) and 6(f); biological; visual; wetlands and riparian areas; and water quality requirements).</p> |
| Historic | <p><u>Book 2 - Technical Requirements</u></p> <ul style="list-style-type: none"> • Identify environmental resources mitigation requirements (these may include: air quality; noise; cultural, historical, archaeological, recreational 4(f) and 6(f); biological; visual; wetlands and riparian areas; and water quality requirements). • Railroad impacts can also result in additional environmental clearance requirements for the project. In particular, historic railroads can trigger the National Historic Preservation Act, Section 106 process, which can take 9 to 12 months to complete. |
| Archaeological | <p><u>Book 2 - Technical Requirements</u></p> <ul style="list-style-type: none"> • Identify environmental resources mitigation requirements (these may include: air quality; noise; cultural, historical, archaeological, recreational 4(f) and 6(f); biological; visual; wetlands and riparian areas; and water quality requirements). |
| Paleontological | No |
| Noise | <p><u>Book 2 - Technical Requirements</u></p> <ul style="list-style-type: none"> • Noise mitigation risk needs to be carefully addressed in the environmental Technical Requirements. • If the Contractor’s design falls outside of the defined tolerances or otherwise proposes revised noise mitigation, then the Contractor accepts the risk of |

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| | performing a revised noise analysis (that must be approved by CDOT) and obtaining any necessary stakeholder consensus as well as any other revised environmental clearance requirements. |
| Species | No |
| Stormwater | <p><u>Definitions</u></p> <ul style="list-style-type: none"> • Municipal Separate Storm Sewer System (MS4) - A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, and storm drains): <ul style="list-style-type: none"> a. owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under state law such as a sewer district, flood control district, drainage district, or similar entity; an Indian tribe or an authorized Indian tribal organization; or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; b. designed or used for collecting or conveying stormwater; • Stormwater Construction Permit - The meaning set forth in Book 2, section 5 and 12. • Stormwater Management Plan - The plan required when a Stormwater Construction Permit is obtained from the Colorado Department of Public Health & Environment (CDPHE). <p><u>Book 2 - Technical Requirements</u></p> <ul style="list-style-type: none"> • Temporary water quality is based upon the state or federal stormwater construction permit. • Book 2, Section 12 specifies requirements for design and construction of drainage facilities and includes information on the following: <ul style="list-style-type: none"> • Stormwater Management Plans • All exposed land needs to have some form of cover (grass or other) and is required to inactivate the stormwater construction permit identified in Book 2 Section 5 and 12 |
| Erosion | <p>Acronyms</p> <p>TECS Transportation Erosion Control Supervisor</p> |
| Permit | <p><u>Comparison of Project Delivery Methods Schedules</u></p> <p>Although project schedules are still controlled by items such as Right-of-Way (ROW) acquisition, permitting, and funding availability, both Design-Build and CMGC offer opportunities to accelerate the project delivery time.</p> <p><u>Federal Regulations and the NEPA Process</u></p> <p>(2) The contracting agency may permit any design and engineering activities to be undertaken for the purposes of defining the project alternatives and completing the NEPA alternatives analysis and review process; complying with other related environmental laws and regulations; supporting agency coordination, public involvement, permit applications, or development of mitigation plans; or developing</p> |

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|---|--|------------|------------------|----------------|--------------|--|--------|------------|--------|------------|----------------------|--|--|--|--|--------------------------|---|--|---|--|-----------------|---|--|---|--|---|---|--|---|--|---|---|--|--|---|--|---|--|--|---|----------------------|--|--|--|--|-----------|---|--|---|--|---|---|--|---|---|---|---|--|---|---|------------|---|--|---|----------------|
| | <p>the design of the preferred alternative to a higher level of detail when the lead agencies agree that it is warranted in accordance with 23 U.S.C. 139(f)(4)(D);</p> <p><u>State Legislation regarding Design-Build Utility Relocations</u> (c) The department may withhold issuance of a permit for the location or installation of other facilities to a utility company until the company pays the department damages caused by the company's delay in the performance of the relocation work or interference with the performance of the design-build transportation project by any other contractor. Any person aggrieved by an action of the department in denying a permit may apply to a court of competent jurisdiction for appropriate relief pursuant to the Colorado rules of civil procedure or section 24-4-106, C.R.S.</p> <p><u>Definitions</u></p> <ul style="list-style-type: none"> • Environmental Approvals - All local, state, and federal environmental requirements, including, but not limited to decision documents, COE Section 404 Permit, COE Section 401 Certificate, CDOT Municipal Separate Storm Sewer System (MS4) Colorado Discharge Permit System (CDPS) Permit, and SB 40 Certification Permanent Water Quality - (PWQ) The meaning and requirements as set forth in CDOT's MS4 permit. • Stormwater Construction Permit - The meaning set forth in Book 2, section 5 and 12. • Utility Removal Work - Work necessary to remove any Utilities (whether or not in use as of the date of NTP1 or NTP2) for which leaving the Utilities in place is not feasible or not permitted, or which the Contractor otherwise proposes to be removed in order to accommodate or permit construction of the project, regardless of whether or not replacements for such Utilities are being installed in other locations. <p>Table 3-1. Example of Design-Build Project Risk Allocation Matrix</p> <table border="1"> <thead> <tr> <th rowspan="2">Risk</th> <th colspan="2">Design-Bid-Build</th> <th colspan="2">Design-Build</th> </tr> <tr> <th>Agency</th> <th>Contractor</th> <th>Agency</th> <th>Contractor</th> </tr> </thead> <tbody> <tr> <td colspan="5">Design Issues</td> </tr> <tr> <td>Project scope definition</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Design criteria</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Geotech investigation – Initial borings on preliminary design</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Geotech investigation – Initial borings on Proposal</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>Plan conformance with regulation/guide/RFP</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td colspan="5">Environmental</td> </tr> <tr> <td>NEPA/SEPA</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Environmental Mitigation Commitments¹</td> <td>X</td> <td></td> <td>X</td> <td>X</td> </tr> <tr> <td>Final Design Environmental Approvals²</td> <td>X</td> <td></td> <td>X</td> <td>X</td> </tr> <tr> <td>Permitting</td> <td>X</td> <td></td> <td>X</td> <td>X²</td> </tr> </tbody> </table> <p>Same table:</p> <ul style="list-style-type: none"> • modifications to existing local agency permits – DBB: Agency, DB: Contractor | Risk | Design-Bid-Build | | Design-Build | | Agency | Contractor | Agency | Contractor | Design Issues | | | | | Project scope definition | X | | X | | Design criteria | X | | X | | Geotech investigation – Initial borings on preliminary design | X | | X | | Geotech investigation – Initial borings on Proposal | X | | | X | Plan conformance with regulation/guide/RFP | X | | | X | Environmental | | | | | NEPA/SEPA | X | | X | | Environmental Mitigation Commitments ¹ | X | | X | X | Final Design Environmental Approvals ² | X | | X | X | Permitting | X | | X | X ² |
| Risk | Design-Bid-Build | | Design-Build | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Agency | Contractor | Agency | Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Issues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project scope definition | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design criteria | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on preliminary design | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on Proposal | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plan conformance with regulation/guide/RFP | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environmental | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPA/SEPA | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environmental Mitigation Commitments ¹ | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Design Environmental Approvals ² | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Permitting | X | | X | X ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | Risk Identification | | | Risk Assessment | | | | |
| | ID # | Status | Identified Risk | Potential Impact (cost, schedule, etc.) | Risk Level | Strategy | | |
| | 10 | Active | Potential contaminated soils within the project limits | If undefined and unmitigated in advance, encountering the materials during construction could have significant cost and schedule impact and could result in potential contractor claims | High | Define and Partially Mitigate | | |
| | 11 | Active | Bridge crossing at Noname Creek | <ul style="list-style-type: none"> A detailed hydraulic floodplain analysis is required to identify bridge crossing geometry creating Federal Emergency Management Agency (FEMA) approval schedule risk and structure cost risk for proposers if they are unable to perform detailed analyses prior to submittal of Proposals A 404 permit is needed if working in the creek and a stream crossing plan are necessary | Medium | Define | | |
| | 13 | Resolved | Permanent Water Quality (PWQ) system | The current Municipal Separate Storm Sewer System (MS4) permit is vague and ambiguous, creating risk that contractor-proposed Water Quality designs will not be approved by CDOT | High | Define | | |
| 15 | Resolved | Nesting birds | Nesting birds, protected under the Migratory Bird Treaty Act, may delay construction during the nesting season | Medium | Mitigate | Identify conditions that contractor can implement to prevent birds from nesting, including Senate Bill 40 permitting to remove trees | CONTRACTOR | 11/4/2014 |

Environmental Permitting:
Typically, environmental permitting can be more effectively managed by the owner because the owner has stronger working relationships with the permitting agencies and a better understanding of the processes. However, certain environmental approvals and processes that can be well defined can be allocated to the Design-Builder. Agreements or memorandums of understanding (MOUs) with permitting agencies that define approval requirements and processes can significantly reduce risks to the Design-Builder. In situations where permitting can be clearly defined and allocated to the contractor, scheduling benefits can be recognized.

Design Development of the Reference Documents
Railroad designs and agreements: Railroad approvals and agreements are often subject to a high degree of uncertainty and risk. CDOT is typically in the best position to advance railroad designs, approvals, and permitting so that railroad-related requirements are not in the critical path of the project schedule. Railroad coordination is most often to some degree a shared risk.

Environmental permitting: In some cases, the permitting process can be advanced more effectively by CDOT than by the proposers during the procurement to minimize environmental agency approval risks.

Phase 2—Request for Proposals, Pursuit Design, Proposals and Selection
The owner further advances the design through its continuing efforts in utilities and other third-party coordination and agreements and also advances permitting and environmental clearances.

The Draft RFP and Industry Review

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| | <p>Though the meetings are to solicit input from the proposers, the meetings should be initiated with a briefing from the CDOT team. Typical topics of the briefing are schedule, funding, third-party coordination updates, clearances, permitting, and ongoing investigations.</p> <p><u>Design-Build Delivery Interface with Other Processes: Environmental Processes</u> In situations where the NEPA process had not been completed prior to the Design-Builder starting work, the Designer Builder’s specific responsibilities concerning NEPA approvals and associated environmental permitting processes must be clearly defined in the RFP and Contract Documents.</p> <p><u>Book 2, Section 5: Environmental</u></p> <ul style="list-style-type: none"> • The Contractor is responsible for preparing and/or acquiring all new environmental supporting studies and permits as a result of Contractor-initiated changes and is responsible for time delay risks. . All necessary permits and regulatory approvals must be defined, and responsibilities must be clearly assigned to both CDOT and the Contractor for implementing, maintaining, and documenting permits. • The content of the environmental Technical Requirements should include the following: Identify all permits that the Contractor is required to obtain.; Identify the permits that CDOT is required to obtain.; Identify the Contractor’s responsibilities to adhere to CDOT-obtained permits.; Identify permitting processes and time frames. • Environmental permitting and mitigation requirements typically involve institutional third-party processes and approvals that are difficult to control and can lead to both schedule and cost risks to the project. • Typically, environmental permitting can be more effectively managed by the owner because the owner has stronger working relationships with the permitting agencies and a better understanding of the processes. However, certain environmental approvals and processes that can be well defined can be allocated to the Contractor. In situations where permitting can be clearly defined and allocated to the Contractor, scheduling benefits can be realized. • Agreements with permitting agencies that define approval requirements and processes can significantly reduce risks to the Contractor. Memorandums of understanding (MOUs) can be valuable documents in that regard, however they are not contractually binding and are difficult to obtain. Any form of documentation is helpful in reducing misunderstanding and minimizing permitting and regulatory risks. • Temporary water quality is based upon the state or federal stormwater construction permit. • An important design development activity by CDOT is to advance the permitting process as much as possible given the limited advancement of the project design in the pre-bid phase. <p><u>Book 2, Section 7: Utilities</u></p> |

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| | <ul style="list-style-type: none"> • Typically, utilities are required to relocate at their own expense unless they have exclusive utilities easements or permits within the CDOT Right-of-Way (ROW) • The matrix should include the following: Identification exclusive utilities easements and permits <p><u>Book 2, Section 8: Right of way</u></p> <ul style="list-style-type: none"> • Often design concepts proposed by Contractors require additional or modified acquisitions. In these situations, the process and cost risk of the revised acquisition should be completely assigned to the Contractor, and they are subject to CDOT Approval. These risks include meetings; investigations; clearances; permits; delays; damages; and all other associated actions, costs, and expenses necessary to acquire the impacted parcel in accordance with the Uniform Relocation Act. • During the acquisition of ROW or easements the Contractor is responsible for: completing any other environmental permitting and clearances that are necessary to comply with the NEPA decision document. • Care must also be taken to ensure all right of entry permits are secured prior to need. <p><u>Book 2, Section 10: Geotechnical and Roadway Pavements</u> CDOT should allow sufficient time, including access and permit requirements, for proposers to perform supplemental investigations to verify and develop geotechnical data to reduce risk to both CDOT and the Contractor.</p> <p><u>Phase 2—Request for Proposals, Pursuit Design, Proposals and Selection</u> The owner further advances the design through its continuing efforts in utilities and other third-party coordination and agreements and also advances permitting and environmental clearances.</p> <p><u>Book 2, Section 12: Drainage</u></p> <ul style="list-style-type: none"> • Also, when working across waterways, a stream crossing plan needs to be developed by the Contractor and accepted by CDOT to satisfy the United States Army Corps of Engineer (COE) 404 permit requirements. • Drainage design development by CDOT sometimes requires more advancement than other design disciplines to best manage its risks, due to conditions where there is the need to: provide a clear definition of the Contractor’s water quality design criteria and requirements (simply referring to water quality permit requirements may result in a contentious interpretation of the permit requirements). <p><u>Book 2, Section 17: Landscaping</u></p> <ul style="list-style-type: none"> • All exposed land needs to have some form of cover (grass or other) and is required to inactivate the stormwater construction permit identified in Book 2 Section 5 and 12. • Most of the work effort is focused on the landscaping requirements for wetlands and riparian mitigations necessary to comply with the project |

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| | <p>NEPA requirements, Senate Bill 40 (SB 40), and the COE permitting requirements. Wetlands and riparian area surveys, including existing tree assessments, are usually necessary to coordinate with the permitting agencies and to develop the appropriate landscaping Technical Requirements.</p> <p><u>Book 3 – Applicable Standards, Data and Reports</u> Project documents that are often a part of Book 3 include environmental decision documents, permits, thirdparty agreements and IGAs, and FHWA Interstate Access Reports.</p> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Commitment | <p>Table 3-1. Example of Design-Build Project Risk Allocation Matrix</p> <table border="1" data-bbox="418 590 1377 934"> <thead> <tr> <th rowspan="2">Risk</th> <th colspan="2">Design-Bid-Build</th> <th colspan="2">Design-Build</th> </tr> <tr> <th>Agency</th> <th>Contractor</th> <th>Agency</th> <th>Contractor</th> </tr> </thead> <tbody> <tr> <td colspan="5">Design Issues</td> </tr> <tr> <td>Project scope definition</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Design criteria</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Geotech investigation – Initial borings on preliminary design</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Geotech investigation – Initial borings on Proposal</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>Plan conformance with regulation/guide/RFP</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td colspan="5">Environmental</td> </tr> <tr> <td>NEPA/SEPA</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Environmental Mitigation Commitments¹</td> <td>X</td> <td></td> <td>X</td> <td>X</td> </tr> <tr> <td>Final Design Environmental Approvals¹</td> <td>X</td> <td></td> <td>X</td> <td>X</td> </tr> <tr> <td>Permitting</td> <td>X</td> <td></td> <td>X</td> <td>X²</td> </tr> </tbody> </table> | Risk | Design-Bid-Build | | Design-Build | | Agency | Contractor | Agency | Contractor | Design Issues | | | | | Project scope definition | X | | X | | Design criteria | X | | X | | Geotech investigation – Initial borings on preliminary design | X | | X | | Geotech investigation – Initial borings on Proposal | X | | | X | Plan conformance with regulation/guide/RFP | X | | | X | Environmental | | | | | NEPA/SEPA | X | | X | | Environmental Mitigation Commitments ¹ | X | | X | X | Final Design Environmental Approvals ¹ | X | | X | X | Permitting | X | | X | X ² |
| Risk | Design-Bid-Build | | Design-Build | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Agency | Contractor | Agency | Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Issues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project scope definition | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design criteria | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on preliminary design | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on Proposal | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Plan conformance with regulation/guide/RFP | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environmental | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NEPA/SEPA | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Environmental Mitigation Commitments ¹ | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Final Design Environmental Approvals ¹ | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Permitting | X | | X | X ² | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Compliance | <p><u>Acronyms</u> ECM – Environmental Compliance Manager</p> <p><u>Definitions</u></p> <ul style="list-style-type: none"> • Environmental Compliance Work Plan - A plan required to be developed by the Contractor and Approved by CDOT that specifically identifies all environmental compliance requirements for the project and the Contractor’s approach for obtaining compliance. • Owner Acceptance (OA) - All activities performed by CDOT to evaluate the degree of compliance with contract requirements and to determine the corresponding value for a given product. Design Acceptance activities by CDOT include reviews of plans, specifications, and other documents prepared by the Design-Builder. Construction Acceptance activities include Acceptance sampling, testing, and inspection of the work by CDOT. <p><u>Design Development</u> The design then advances to the preliminary design stage during which Reference Documents (including the preliminary plans) and Technical Requirements are developed. The focus of this phase of the design development is to: advance the design as necessary to properly identify, manage, and allocate risks, such as Right-of-Way (ROW), environmental compliance, and so forth.</p> <p><u>Design Development</u></p> <ul style="list-style-type: none"> • PWQ: It is often beneficial to address the uncertainty of Municipal Separate Storm Sewer System (MS4) compliance by providing preliminary designs for default systems and facilities. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | <ul style="list-style-type: none"> • After selection of the Design-Build proposer is finalized, the design is further developed through a collaborative process between the owner and the Design-Builder. This is usually accomplished by establishing design task forces through which the Design-Builder and the owner collaborate on project-related specialties such as environmental compliance, drainage, traffic management, public relations, roadway and structure design, and so forth <p>Phase 1—Request for Qualifications, Statements of Qualifications, and Short-Listing</p> <ul style="list-style-type: none"> • Submitter experience: National Environmental Policy Act (NEPA)/environmental compliance in Design-Build <p><u>Design-Build Delivery Interface with Other Processes</u></p> <p>In fact, if environmental risks, such as compliance or schedule, are not carefully managed in Design-Build delivery, the potential for negative consequences can be greater than in traditional D-B-B.</p> <p><u>Book 1 – Contract</u></p> <p>Nonetheless, usually there are some critical elements of the project that CDOT wants Approval authority over. The Quality Management Plan and the Environmental Compliance Plan are typical examples.</p> <p><u>Book 2, Section 3: Quality Management</u></p> <p>Quality management must also address design and construction operations, such as environmental compliance, Public Information (PI), Maintenance of Traffic (MOT), and water quality.</p> <p><u>Book 2, Section 5: Environmental</u></p> <ul style="list-style-type: none"> • Environmental compliance in Design-Build can pose a considerable risk to both CDOT and the Contractor. The Contract allows the Contractor latitude in developing a design that varies from the design presented in the Reference Documents, allowing the Contractor the opportunity to develop the most efficient design. However, the variations in the design relative to Reference Documents may affect environmental impacts, which in turn may affect project clearances, the schedule, and so forth. As a result, wherever possible, it is best to make the mitigation measures—such as preparing, documenting, implementing, and gaining third-party approvals of the changes and maintaining those measures—the responsibility of the Contractor until project Acceptance. Regardless, CDOT retains the ultimate responsibility for the mitigation measures and therefore must carefully monitor their progress. • CDOT’s Environmental Manager and Project Manager must work together in the development of the project scope and RFP and during the administration of the Contract to identify how the design can be flexible and innovative and what risk allocation is best suited on the project while ensuring environmental compliance. |

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| | <ul style="list-style-type: none"> • Identify the Contractor’s requirements for developing and executing an Environmental Compliance Plan for the project, including QC for environmental operations. • Identify the Contractor’s requirements for developing and executing an Environmental Compliance Plan for the project, including QC for environmental operations.; Identify all permits that the Contractor is required to obtain.; Identify the permits that CDOT is required to obtain.; Identify the Contractor’s responsibilities to adhere to CDOT-obtained permits.; Identify permitting processes and time frames.; Identify environmental resources mitigation requirements (these may include: air quality; noise;; cultural, historical, archaeological, recreational 4(f) and 6(f); biological; visual; wetlands and riparian areas; and water quality requirements).; Identify all rules, requirements, and regulations that the Contractor is required to follow.; Identify requirements and responsibilities for mitigation measures for impacted wetlands and riparian areas.; Identify investigation and mitigation responsibilities for hazardous substances.; Identify Contractor responsibilities for developing and implementing a Hazardous Waste Management Plan.; Require full compliance with the mitigation requirements of the NEPA decision document.; Identify the steps to obtain environmental clearance for the Contractor’s design when it changes the environmental conditions of the project. • CDOT should consider all items necessary to document compliance with the environmental decision document requirements and require sufficient documentation from the Contractor so this information can be easily passed on to third parties when appropriate. • For example, if contamination is identified during the NEPA process, the risks associated with the project environmental compliance can be significantly reduced through advanced investigation by CDOT. <p><u>Project Organization</u> Construction Operations Team: Construction operations are those activities that are necessary to support the construction of the project. Construction operations include environmental compliance, utilities coordination, construction water quality management, traffic management, and public and stakeholder information processes.</p> |
| Monitor | <p><u>Definitions</u></p> <ul style="list-style-type: none"> • Construction Process Control - The system used by the Contractor to monitor, assess, and adjust production or placement processes to ensure that the final product meets the specified level of quality. Construction Process Control includes sampling, testing, inspection, and corrective action (where required) to maintain continuous control of a production or placement process. • Independent Contractor Quality Control (ICQC) - Formal QC activities performed by a separate Construction QC team that is independent from the production staff. This involves formal QC sampling, testing, and inspection to provide timely data to monitor and guide each production and placement process and to ensure the product conforms with the Contract |

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| | <p>requirements. Secondly, this QC data may be included in CDOT’s Acceptance determination.</p> <ul style="list-style-type: none"> Quality Control (QC) The system used by the Design-Builder (design consultant, sub-consultants, prime contractor, subcontractors, producers, fabricators, manufacturers) to monitor, assess and adjust their processes to ensure that a product will meet the specified level of quality. The Design-Builder is responsible for implementing a Design QC system and a Construction QC system. There are two tiers of Quality Control: Frontline QC (herein called “Process Control”) and Formal QC (herein called “Independent Quality Control”). <p><u>Contract Award and Project Start-up</u></p> <ul style="list-style-type: none"> Potential items for an initial partnering meeting include the following: Continued partnering evaluation, monitoring, and accountability (report cards) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Mitigation | <p><u>Federal Regulations and the NEPA Process</u></p> <ul style="list-style-type: none"> (2) The contracting agency may permit any design and engineering activities to be undertaken for the purposes of defining the project alternatives and completing the NEPA alternatives analysis and review process; complying with other related environmental laws and regulations; supporting agency coordination, public involvement, permit applications, or development of mitigation plans; or developing the design of the preferred alternative to a higher level of detail when the lead agencies agree that it is warranted in accordance with 23 U.S.C. 139(f)(4)(D); (5) The design-build contract must include appropriate provisions ensuring that all environmental and mitigation measures identified in the NEPA document will be implemented; (8) The design-builder may be requested to provide information about the project and possible mitigation actions, and its work product may be considered in the NEPA analysis and included in the record; and <p>Table 3-1. Example of Design-Build Project Risk Allocation Matrix</p> <table border="1"> <thead> <tr> <th rowspan="2">Risk</th> <th colspan="2">Design-Bid-Build</th> <th colspan="2">Design-Build</th> </tr> <tr> <th>Agency</th> <th>Contractor</th> <th>Agency</th> <th>Contractor</th> </tr> </thead> <tbody> <tr> <td colspan="5">Design Issues</td> </tr> <tr> <td>Project scope definition</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Design criteria</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Geotech investigation – Initial borings on preliminary design</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Geotech investigation – Initial borings on Proposal</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td>Plan conformance with regulation/guide/RFP</td> <td>X</td> <td></td> <td></td> <td>X</td> </tr> <tr> <td colspan="5">Environmental</td> </tr> <tr> <td>NEPA/SEPA</td> <td>X</td> <td></td> <td>X</td> <td></td> </tr> <tr> <td>Environmental Mitigation Commitments¹</td> <td>X</td> <td></td> <td>X</td> <td>X</td> </tr> </tbody> </table> | Risk | Design-Bid-Build | | Design-Build | | Agency | Contractor | Agency | Contractor | Design Issues | | | | | Project scope definition | X | | X | | Design criteria | X | | X | | Geotech investigation – Initial borings on preliminary design | X | | X | | Geotech investigation – Initial borings on Proposal | X | | | X | Plan conformance with regulation/guide/RFP | X | | | X | Environmental | | | | | NEPA/SEPA | X | | X | | Environmental Mitigation Commitments ¹ | X | | X | X |
| Risk | Design-Bid-Build | | Design-Build | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | Agency | Contractor | Agency | Contractor | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design Issues | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Project scope definition | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Design criteria | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on preliminary design | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Geotech investigation – Initial borings on Proposal | X | | | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Environmental | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| Environmental Mitigation Commitments ¹ | X | | X | X | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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| | <p data-bbox="410 237 1398 260">Table 3-2. A Sample Risk Register</p> <table border="1" data-bbox="410 260 1398 415"> <thead> <tr> <th colspan="3" data-bbox="410 260 922 289">RISK REGISTER Project Name: Example Project Name</th> <th colspan="5" data-bbox="922 260 1398 289">Project Number: XX-XXXX</th> </tr> <tr> <th colspan="3" data-bbox="410 289 618 317">Risk Identification</th> <th colspan="2" data-bbox="618 289 922 317">Risk Assessment</th> <th colspan="2" data-bbox="922 289 1227 317">Risk Response</th> <th colspan="2" data-bbox="1227 289 1398 317">Allocation</th> </tr> <tr> <th data-bbox="410 317 448 344">ID #</th> <th data-bbox="448 317 505 344">Status</th> <th data-bbox="505 317 618 344">Identified Risk</th> <th data-bbox="618 317 850 344">Potential Impact (cost, schedule, etc.)</th> <th data-bbox="850 317 922 344">Risk Level</th> <th data-bbox="922 317 1002 344">Strategy</th> <th data-bbox="1002 317 1227 344">Response Actions</th> <th data-bbox="1227 317 1323 344">Risk Owner</th> <th data-bbox="1323 317 1398 344">Updated</th> </tr> </thead> <tbody> <tr> <td data-bbox="410 344 448 415">10</td> <td data-bbox="448 344 505 415">Active</td> <td data-bbox="505 344 618 415">Potential contaminated soils within the project limits</td> <td data-bbox="618 344 850 415">If undefined and unmitigated in advance, encountering the materials during construction could have significant cost and schedule impact and could result in potential contractor claims</td> <td data-bbox="850 344 922 415">High</td> <td data-bbox="922 344 1002 415">Define and Partially Mitigate</td> <td data-bbox="1002 344 1227 415"> <ul style="list-style-type: none"> - CDOT performs physical investigation prior to Notice to Proceed (NTP) to characterize and perform some mitigation in advance if possible - CDOT accepts cost responsibility through force account and Contractor accepts schedule responsibility. </td> <td data-bbox="1227 344 1323 415">CDOT and Contractor</td> <td data-bbox="1323 344 1398 415">10/12/2014</td> </tr> </tbody> </table> <p data-bbox="410 415 1036 447"><u>Typical Design-Build Risks on Transportation Projects</u></p> <p data-bbox="410 447 1360 552">These investigations typically include the following: Contaminated materials and groundwater investigation—at a minimum to characterize the general nature of mitigation requirements</p> <p data-bbox="410 594 1003 625"><u>Design Development of the Reference Documents</u></p> <p data-bbox="410 625 1417 804">A defined set of line and grade documents will provide sufficient detail to define the project footprint, horizontal and vertical alignment, proposed bridge and retaining structures, required environmental mitigation, ROW and utility impacts while still allowing for best-value procurement that achieves maximum benefit from the use of design-build delivery.</p> <p data-bbox="410 846 1344 877"><u>Design-Build Delivery Interface with Other Processes: Environmental Processes</u></p> <p data-bbox="410 877 1401 1087">If the NEPA process has not been completed prior to the issuance of an SOQ or an RFP, the solicitation document must include a statement of the status of the NEPA process and a statement that the procurement process and preliminary design are consistent with the NEPA requirements and mitigations and do not preclude any of the NEPA alternatives currently under consideration. FHWA should concur with this approach.</p> <p data-bbox="410 1129 800 1161"><u>Book 2, Section 5: Environmental</u></p> <ul style="list-style-type: none"> <li data-bbox="456 1161 1401 1444">• However, the variations in the design relative to Reference Documents may affect environmental impacts, which in turn may affect project clearances, the schedule, and so forth. As a result, wherever possible, it is best to make the mitigation measures—such as preparing, documenting, implementing, and gaining third-party approvals of the changes and maintaining those measures—the responsibility of the Contractor until project Acceptance. Regardless, CDOT retains the ultimate responsibility for the mitigation measures and therefore must carefully monitor their progress. <li data-bbox="456 1455 1377 1654">• The content of the environmental Technical Requirements should include the following: Identify requirements and responsibilities for mitigation measures for impacted wetlands and riparian areas. Identify investigation and mitigation responsibilities for hazardous substances. Require full compliance with the mitigation requirements of the NEPA decision document <li data-bbox="456 1665 1401 1770">• Environmental permitting and mitigation requirements typically involve institutional third-party processes and approvals that are difficult to control and can lead to both schedule and cost risks to the project. <li data-bbox="456 1780 1417 1877">• . During the RFP process, the project team needs to identify which mitigation measures need to be managed by CDOT and which should be the responsibility of the Contractor. If the mitigation measures are the | RISK REGISTER Project Name: Example Project Name | | | Project Number: XX-XXXX | | | | | Risk Identification | | | Risk Assessment | | Risk Response | | Allocation | | ID # | Status | Identified Risk | Potential Impact (cost, schedule, etc.) | Risk Level | Strategy | Response Actions | Risk Owner | Updated | 10 | Active | Potential contaminated soils within the project limits | If undefined and unmitigated in advance, encountering the materials during construction could have significant cost and schedule impact and could result in potential contractor claims | High | Define and Partially Mitigate | <ul style="list-style-type: none"> - CDOT performs physical investigation prior to Notice to Proceed (NTP) to characterize and perform some mitigation in advance if possible - CDOT accepts cost responsibility through force account and Contractor accepts schedule responsibility. | CDOT and Contractor | 10/12/2014 |
| RISK REGISTER Project Name: Example Project Name | | | Project Number: XX-XXXX | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Risk Identification | | | Risk Assessment | | Risk Response | | Allocation | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ID # | Status | Identified Risk | Potential Impact (cost, schedule, etc.) | Risk Level | Strategy | Response Actions | Risk Owner | Updated | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Active | Potential contaminated soils within the project limits | If undefined and unmitigated in advance, encountering the materials during construction could have significant cost and schedule impact and could result in potential contractor claims | High | Define and Partially Mitigate | <ul style="list-style-type: none"> - CDOT performs physical investigation prior to Notice to Proceed (NTP) to characterize and perform some mitigation in advance if possible - CDOT accepts cost responsibility through force account and Contractor accepts schedule responsibility. | CDOT and Contractor | 10/12/2014 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| Keyword | Presence |
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| | <p>responsibility of the Contractor, they need to be clarified in the RFP with specific Contract language so they are understandable and implementable.</p> <ul style="list-style-type: none"> • If CDOT has performed physical investigations that fully characterize the nature and extent of hazardous materials, the Contractor can be assigned the responsibility and risk for the required mitigation. • More typically, investigations by CDOT allow for only a general understanding of the conditions. In those situations, the risk is often shared: CDOT accepts the cost risk through a time and materials change order to compensate all related mitigation costs for identified pre-existing hazardous materials, and the Contractor accepts the risk of scheduling the project to accommodate mitigation work. • Noise mitigation risk needs to be carefully addressed in the environmental Technical Requirements. Typically, CDOT performs a noise analysis and develops proposed mitigations as a part of the NEPA process. • The NEPA mitigation often includes stakeholders' interests. • The recommended approach is for CDOT to accept the risk for noise mitigation provided the Contractors design does not fall outside of defined vertical and horizontal tolerances. • If the Contractor's design falls outside of the defined tolerances or otherwise proposes revised noise mitigation, then the Contractor accepts the risk of performing a revised noise analysis (that must be Approved by CDOT) and obtaining any necessary stakeholder consensus as well as any other revised environmental clearance requirements. <p><u>Book 2, Section 13: Roadways</u></p> <ul style="list-style-type: none"> • Similar to environmental mitigation, any increase in time/cost due to processing the ATC (Alternative Technical Concept) change is solely the responsibility of the Contractor. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found to relate to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

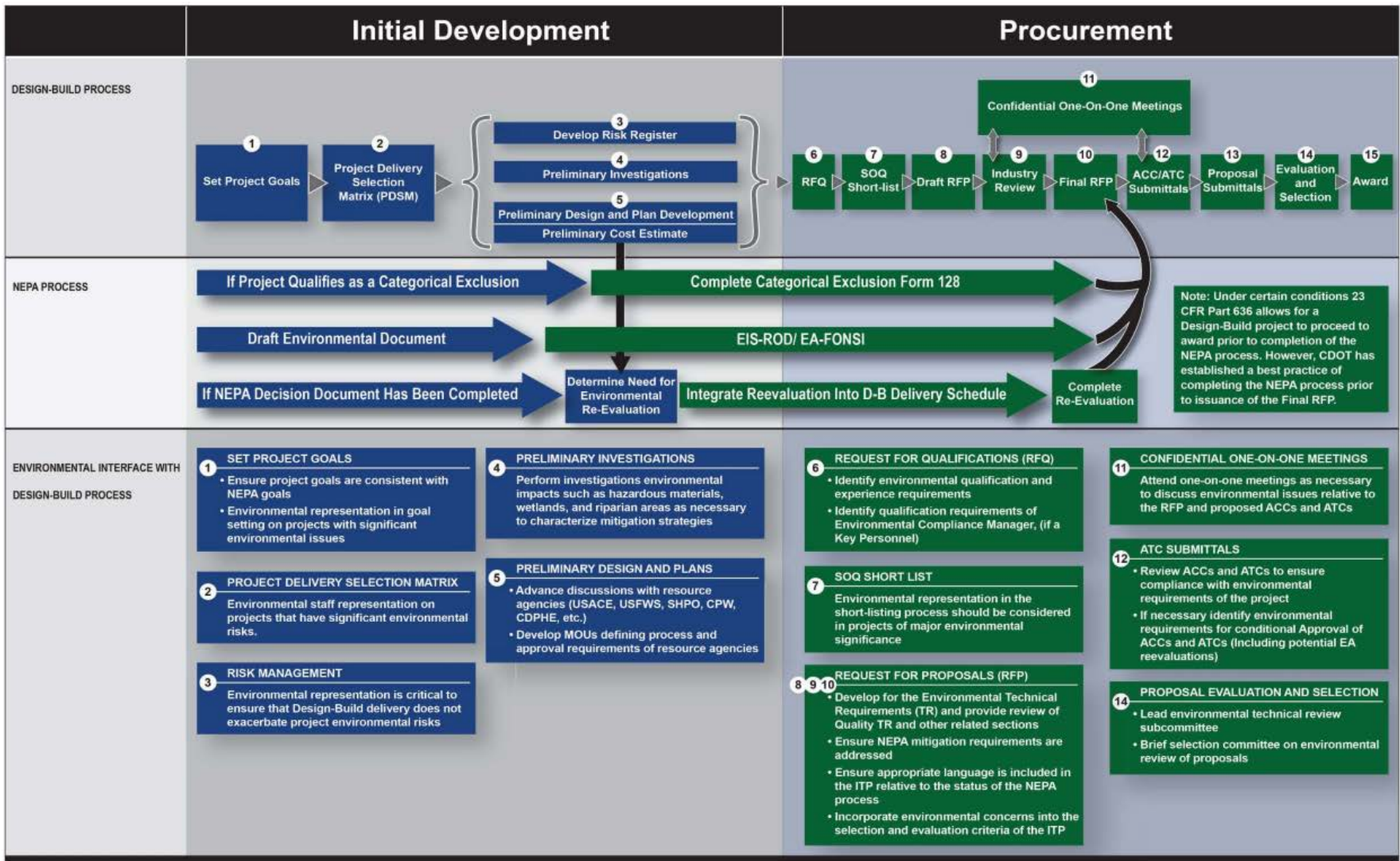


Figure 5-9. Environmental Interface with Design-Build Process

Connecticut

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes

<http://www.ct.gov/dot/cwp/view.asp?a=4453&q=534602>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No. The webpage with the manual is under construction. Legislation has been authorized since 2012. There are currently four bridge replacements underway using D-B.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Delaware

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

District of Columbia

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes

[https://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/DC%20DB%20Manual%20Final%2005_23_2014%20\(3\).pdf](https://ddot.dc.gov/sites/default/files/dc/sites/ddot/publication/attachments/DC%20DB%20Manual%20Final%2005_23_2014%20(3).pdf)

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|--|
| NEPA | <p><u>Selecting a Project Delivery Method: Timing</u> At this level, sufficient detail is typically available to fully define the project, including scope of work, project risks, post-NEPA environmental coordination, utility involvement, community involvement, preliminary cost estimates and right of way requirements.</p> <p><u>Selecting a Project Delivery Method: Factors to be considered</u> Goals and Objectives. Typically well defined at the preliminary design levels, the goals and objectives are the basic tenets of the project that need to be achieved for the project to be considered a success. For projects with a NEPA document, the purpose and need are often good starting points for defining the goals and objectives. G</p> <p><u>Project Development for Design-Build – Project Permitting/Environmental Design</u> To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: ☐ NEPA Classification – DDOT</p> <p><u>Project Development for Design-Build - Permitting</u> The NEPA process is typically completed by DDOT before the Design-Build contract is awarded.</p> <p><u>Project Development for Design-Build –Noise Analysis</u> The initial noise analysis is conducted as part of the NEPA process by DDOT and should be provided to the Design-Builder as reference data.</p> |
| Environment | <p><u>Selecting a Project Delivery Method: Timing</u> At this level, sufficient detail is typically available to fully define the project, including scope of work, project risks, post-NEPA environmental coordination, utility involvement, community involvement, preliminary cost estimates and right of way requirements.</p> <p><u>Selecting a Project Delivery Method: Factors to be considered</u> Aesthetics – Depending on the project environment, aesthetics can prove to be a major factor in the success of a project.</p> |

Table 3.3 | Sample Project Risk Rating Matrix

| | Probability of Occurrence | Severity of Occurrence | Risk Rating |
|--|---------------------------|------------------------|-------------|
| Environmental Approvals / Permits | | | |
| Erosion and Sediment Control | 3 | 2 | 6 |
| Tree Removal | 3 | 1 | 3 |
| Other Public Space Permits | 3 | 1 | 3 |

Table 3.4 | Project Risk Mitigation and Allocation Matrix

| | Risk Mitigation and Allocation Strategy | | |
|--|---|--------------|------------|
| | Design Bid Build | Design-Build | CM at Risk |
| Environmental Approvals / Permits | | | |

Table 3.5 | Sample Project Delivery Method Evaluation Table

| | Likelihood of Successful Project | | |
|---|----------------------------------|--------------|------------|
| | Design Bid Build | Design-Build | CM at Risk |
| Goals | | | |
| Efficient travel for all transportation modes | ✓ | ✓ | ✓ |
| Eliminate roadway infrastructure deficiencies | ✓ | ✓ | ✓ |
| Construction a "Green Street" | ✓ | ✓ | ✓ |
| Accommodate future streetcar operations within the transitway | ✓ | ✓ | ✓ |
| Avoid impacts to 4(f) properties | ✓ | ✓ | ✓ |
| Avoid right of way acquisition | | ✓ | ✓ |
| Result in no adverse effect to historic properties | ✓ | ✓ | ✓ |
| Minimize impacts to users during construction | | ✓ | ✓ |
| Minimize impacts to adjacent businesses during construction | | ✓ | ✓ |
| Risks | | | |
| High Risk Items | | | |
| Environmental Approvals and Permits | ✓ | | ✓ |

Project Management for Design-Build

- Typical components of a Design-Build cost estimate include, but are not limited to: Environmental Documents/Coordination/Mitigation Costs

Project Development for Design-Build

- To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: Adverse Human Health and Environmental effects on minority, low income, LEP and disabled populations – DDOT
- DDOT should perform preliminary storm sewer design only to the extent necessary to establish a preliminary drainage layout and storm water management footprint. This layout must be sufficient to determine anticipated utility impacts, proposed drainage patterns, tie-ins to existing facilities, right-of- way needs, and necessary environmental permits.

- If so determined, DDOT will obtain the required right of way. Any increase in Right of Way cost, including but not limited to property costs, relocation costs, DDOT costs, environmental assessments, haz-mat mitigation, will accrue to the Design-Builder.
- DDOT should complete the Environmental Site Assessment before advertisement of the Design-Build contract.

Elements of Design-Build Procurement: Alternative Technical Concepts
 ATCs that, if implemented, would require further environmental evaluation of the Project, may be allowed, provided that the D-B Team will bear the schedule and cost risk associated with such additional environmental evaluation. . D-B Team must recognize that any such environmental evaluation cannot take place until after award, and will require coordination with DDOT.

RFP Development – Conflict of Interest Statement
 Performing work under a present or former contract to prepare planning, environmental, engineering or technical work product when such work product is not made available to all potential offerors in a timely manner prior to the procurement process.

Cultural (resource)

No

Historic

Table 3.5 | Sample Project Delivery Method Evaluation Table

| | Likelihood of Successful Project | | |
|---|----------------------------------|--------------|------------|
| | Design Bid Build | Design-Build | CM at Risk |
| Goals | | | |
| Efficient travel for all transportation modes | ✓ | ✓ | ✓ |
| Eliminate roadway infrastructure deficiencies | ✓ | ✓ | ✓ |
| Construction a "Green Street" | ✓ | ✓ | ✓ |
| Accommodate future streetcar operations within the transitway | ✓ | ✓ | ✓ |
| Avoid impacts to 4(f) properties | ✓ | ✓ | ✓ |
| Avoid right of way acquisition | | ✓ | ✓ |
| Result in no adverse effect to historic properties | ✓ | ✓ | ✓ |

Project Development for Design-Build - Project Permitting / Environmental Design

- As part of the planning and development of functional design plans, DDOT will typically delineate all wetlands, waters of the United States, forested areas, significant trees, and other natural, historic or archeological resources that may be impacted by the project.
- To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: Historic Bridges – DDOT

Archaeological

Project Development for Design-Build - Project Permitting / Environmental Design

- To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: ☐ Archaeology / Paleontology – DDOT

Paleontological

Project Development for Design-Build - Project Permitting / Environmental Design

| | |
|------------|--|
| | <ul style="list-style-type: none"> To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: ☐ Archaeology / Paleontology – DDOT |
| Noise | <p><u>Project Development for Design-Build - Project Permitting / Environmental Design</u></p> <ul style="list-style-type: none"> To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: Noise Analysis – Initial analysis by DDOT. Design-Builder verifies findings <p><u>Project Development for Design-Build - Structural</u> DDOT should provide the Design-Builder with any preliminary noise analysis or reports completed by the District. The Design-Builder is responsible for updating the report based on final design, and designing and constructing any noise barriers required.</p> <p><u>Project Development for Design-Build - Noise Analysis</u> The initial noise analysis is conducted as part of the NEPA process by DDOT and should be provided to the Design-Builder as reference data. After award of the Design-Build contract, the Design-Builder is required to complete noise analysis in accordance with DDOT requirements for the Design-Builder’s final design. Any resulting noise walls or other noise abatement solutions will be the responsibility of the Design-Builder.</p> |
| Species | <p><u>Project Development for Design-Build - Project Permitting / Environmental Design</u></p> <ul style="list-style-type: none"> To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: Threatened and Endangered Species coordination - DDOT |
| Stormwater | <p><u>Project Development for Design-Build - Project Permitting / Environmental Design</u></p> <ul style="list-style-type: none"> To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: Storm Water Quality, BMP, LID – Design-Builder <p><u>Project Development for Design-Build - Drainage and Storm Water Management</u></p> <ul style="list-style-type: none"> DDOT should perform preliminary storm sewer design only to the extent necessary to establish a preliminary drainage layout and storm water management footprint. DDOT should complete a conceptual storm water management plan to demonstrate to DDOE that all requirements can be met within the proposed right of way. The Design-Builder will then be responsible for completing the stormwater management design, all necessary agency coordination and obtaining of permits. The conceptual storm water management plan will be provided to the Design-Builder as reference material as necessary to document the preliminary coordination with the permitting agency. |
| Erosion | |

Table 3.3 | Sample Project Risk Rating Matrix

| | Probability of Occurrence | Severity of Occurrence | Risk Rating |
|-------------------------------------|---------------------------|------------------------|-------------|
| Environmental Approvals / Permits | | | |
| Erosion and Sediment Control | 3 | 2 | 6 |

Project Development for Design-Build .- Project Permitting / Environmental Design

- To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below: Erosion Control Permits – Design-Builder

Project Development for Design-Build - Erosion and Sediment Control

The Design-Build team is responsible for preparing phased erosion and sediment control design and all associated permitting in accordance with DDOE requirements. DDOT should consider erosion and sediment control during the functional plan development only to the extent that it impacts the project right of way. Suitable offset from the top of cut/toe of fill to allow for erosion and sediment control devices must be assumed when developing limits of disturbance and right of way.

Permit

Design Bid Build

DDOT establishes both the design and construction durations, accommodating the specific permit, coordination, design, construction, and cash flow needs of the project.

Design-Build

- After award of the contract, the Design-Build team completes the project design, obtains some or all permits, and constructs the project in accordance with the contract requirements.
- The Design-Build team is responsible for developing the detailed design, permitting and construction schedules.

Construction Manager at Risk

DDOT in collaboration with the designer and CM at Risk establishes both the design and construction schedules, accommodating the specific permit, coordination, design, construction, and cash flow needs of the project.

Timing

Special consideration will need to be given to the status of the project, permits, design effort already expended, scope definition, political factors, and any other pressing issues that could influence successful project delivery.

Factors to be considered

Permitting / third party approvals – Approval requirements from third parties such as WMATA, DC Water, Railroads, AOC, NPS and other governmental agencies may require design to be progressed to a high level of completion before ‘approval’ of the project. Written agreements, such as MOA’s, are necessary to mitigate this risk if D-B is selected.

Table 3.3 | Sample Project Risk Rating Matrix

| | Probability of Occurrence | Severity of Occurrence | Risk Rating |
|-----------------------------------|---------------------------|------------------------|-------------|
| Environmental Approvals / Permits | | | |
| Erosion and Sediment Control | 3 | 2 | 6 |
| Tree Removal | 3 | 1 | 3 |
| Other Public Space Permits | 3 | 1 | 3 |

Table 3.4 | Project Risk Mitigation and Allocation Matrix

| | Risk Mitigation and Allocation Strategy | | |
|-----------------------------------|---|--------------|------------|
| | Design Bid Build | Design-Build | CM at Risk |
| Environmental Approvals / Permits | | | |

Table 3.5 | Sample Project Delivery Method Evaluation Table

| | Likelihood of Successful Project | | |
|---|----------------------------------|--------------|------------|
| | Design Bid Build | Design-Build | CM at Risk |
| Goals | | | |
| Efficient travel for all transportation modes | ✓ | ✓ | ✓ |
| Eliminate roadway infrastructure deficiencies | ✓ | ✓ | ✓ |
| Construction a "Green Street" | ✓ | ✓ | ✓ |
| Accommodate future streetcar operations within the transitway | ✓ | ✓ | ✓ |
| Avoid impacts to 4(f) properties | ✓ | ✓ | ✓ |
| Avoid right of way acquisition | | ✓ | ✓ |
| Result in no adverse effect to historic properties | ✓ | ✓ | ✓ |
| Minimize impacts to users during construction | | ✓ | ✓ |
| Minimize impacts to adjacent businesses during construction | | ✓ | ✓ |
| Risks | | | |
| High Risk Items | | | |
| Environmental Approvals and Permits | ✓ | | ✓ |

Project Management for Design-Build – Value Engineering

While the Design-Build process enhances innovation and creativity in meeting project requirements, the Design-Builder is often limited in innovation by the cost effectiveness, right of way availability, and risks associated with changes to permits.

Project Permitting / Environmental Design

As part of the planning and development of functional design plans, DDOT will typically delineate all wetlands, waters of the United States, forested areas, significant trees, and other natural, historic or archeological resources that may be impacted by the project. DDOT should coordinate with the appropriate agencies with regard to the anticipated impacts, avoidance and minimization of impacts, mitigation, special protection measures and permits required.

Project Development for Design-Build

By necessity, permits will be a shared responsibility between DDOT and the Design-Builder. DDOT must inform the agencies of the decision to use Design-Build, which will impact the manner in which permit applications are processed. The Project

Manager must carefully consider the risks of retaining permitting responsibility with DDOT vs. assigning the responsibility to the Design-Builder. To ensure permit authorizations are issued in advance of the RFP, the typical assignment of responsibility and process for obtaining each authorization is listed below:

- Noise Analysis – Initial analysis by DDOT. Design-Builder verifies findings
- NEPA Classification – DDOT
- Route location approval – DDOT
- Section 4(f) – DDOT
- Section 106 – Historic Clearances – DDOT
- Historic Bridges – DDOT
- Archaeology / Paleontology – DDOT
- 404 Wetland/Waterway Permit Requirements – DDOT, with modifications by Design-Builder
- 401 Water Quality Certification-DDOE – DDOT, with modifications by Design-Builder
- Floodplains-DDOE – DDOT, with modifications by Design-Builder
- Special Status Species Issues-US Fish and Wildlife Issues/DDOE – DDOT
- Threatened and Endangered Species coordination - DDOT
- Hazardous Waste and Materials – Initial analysis by DDOT, Design-Builder verifies findings
- Air Quality – DDOT.
- NPDES Permit Requirements – DDOT, with modifications by Design-Builder
- Erosion Control Permits – Design-Builder
- Adverse Human Health and Environmental effects on minority, low income, LEP and disabled populations – DDOT
- Storm Water Quality, BMP, LID – Design-Builder
- NPS Access – DDOT
- WMATA Real Estate - DDOT

Project Development for Design-Build

A matrix should be provided clearly indicating responsibility for all permits. Responsibility for preparing wetland, forest and other resource impacts and permits shall be clearly stated in the RFP. If final design cannot be completed within the authorized boundaries or if the Design-Builder desires to make revisions, the Design-Builder is required to modify the permits at the Design-Builder's time and expense.

Project Development for Design-Build – Drainage and Storm Water management

- DDOT should perform preliminary storm sewer design only to the extent necessary to establish a preliminary drainage layout and storm water management footprint. This layout must be sufficient to determine anticipated utility impacts, proposed drainage patterns, tie-ins to existing facilities, right-of- way needs, and necessary environmental permits.
- Culverts carrying waters of the US or with impoundments that may affect right of way needs should be designed by DDOT to the preliminary level and coordinated with the permitting agency and right of way needs assessed

accordingly. The Design-Builder will be responsible for the final design and permitting of drainage and culverts.

- Preliminary storm drain designs are not provided to the Design-Builder. Preliminary culvert designs are provided to the Design-Builder as reference data only for locations where permit coordination was begun by DDOT.
- The Design-Builder will then be responsible for completing the stormwater management design, all necessary agency coordination and obtaining of permits.
- The conceptual storm water management plan will be provided to the Design-Builder as reference material as necessary to document the preliminary coordination with the permitting agency.

Project Development for Design-Build – Erosion and sediment control

The Design-Build team is responsible for preparing phased erosion and sediment control design and all associated permitting in accordance with DDOE requirements.

Project Development for Design-Build – Permitting

- DDOT will make a determination during project development regarding which party will obtain each required permit and this information shall be included in the RFP.
- The Design-Builder will be responsible for complying with the terms of any permits and approvals acquired by DDOT and for acquiring any additional permits or approvals necessary to complete the project. DDOT will provide support as necessary for obtaining permits.
- If the Design-Builder modifies the conceptual plans developed by DDOT it will be the Design-Builder's sole responsibility to obtain, at their expense, approved permit modifications. The contractor shall bear sole responsibility for any and all schedule risk associated with obtaining a permit modification, with the exception of a DDOT directed change.

Two Step Process (Request for Qualifications (RFQ) and RFP)

Typical Submission requirements include:

Relevant Project Experience (considering D-B, permitting, right of way, etc.).

RFP Development – Alternative Technical Concept Process

A preliminary analysis and quantitative discussion of the potential impacts on traffic, permitting, community, safety, and life cycle cost.

Administration of Design-Build Projects – Work Package Reviews

Additional reviews may be required by permitting agencies or other third parties.

Administration of Design-Build Projects – Award Procedures

- On many projects the design will proceed for some number of months before construction permits are obtained. In this circumstance, DDOT should consider a second pre-construction meeting once permits are received and construction is ready to begin.

| | |
|------------|--|
| | <p><u>Construction</u> The Design-Builder shall also be responsible for reproduction and distribution, whether electronic or hard copy, of these plans as required to obtain reviews, approvals, permits, construct and to facilitate inspection of the work.</p> |
| Commitment | <p><u>Third Party Requirements</u> The Design-Builder shall be responsible for carrying out the commitments made in the third party agreements.</p> |
| Compliance | No |
| Monitor | No |
| Mitigation | <p><u>Project Cost Estimates</u> Typical components of a Design-Build cost estimate include, but are not limited to: Environmental Documents/Coordination/Mitigation Cost</p> <p><u>Design Exceptions and Waivers</u> Design exception and waiver documentation shall include justification for the design exception or waiver and mitigation measures where field conditions, lack of ROW, utility and railroad clearance, etc. require the construction of facilities which do not meet minimum standards.</p> <p><u>Project Development for Design-Build - Project Permitting / Environmental Design</u></p> <ul style="list-style-type: none"> • DDOT should coordinate with the appropriate agencies with regard to the anticipated impacts, avoidance and minimization of impacts, mitigation, special protection measures and permits required. • Responsibility for mitigation measures must be clearly defined by DDOT in the RFP. Mitigation that is located at the project site is typically the responsibility of the Design-Builder, including in-kind mitigation for stream impacts and restoration for temporary wetland or floodplain impacts. Off-site mitigation may be performed by the Design-Builder, but is often performed under separate contract by DDOT. <p><u>Project Development for Design-Build –Right of way</u> Any increase in Right of Way cost, including but not limited to property costs, relocation costs, DDOT costs, environmental assessments, haz-mat mitigation, will accrue to the Design-Builder. Any decrease in right of way cost will accrue to DDOT.</p> |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Florida

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, the Florida DOT does have a dedicated webpage for Design-Build, as well as a webpage for Major Design-Build.

<http://www.fdot.gov/construction/DesignBuild/Design-Build.shtm>

<http://www.fdot.gov/construction/AltContract/General/DBMajor.shtm>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No, the Florida DOT does not have a manual or guidebook for Design-Build. The page for “Design-Build Guidelines” contains the procurement and administration procedure and design-build scoping questions; it does not contain processes or procedures related to the implementation of D-B projects. However, the Florida DOT does have a Project Development and Environment Manual (PD&E) that references D-B. The PD&E manual does not provide a great deal of differentiation between standard and alternate delivery. The matrix below includes information from the keyword search when where D-B is specified.

<http://www.fdot.gov/environment/pubs/pdeman/pdeman1.shtm>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|---|
| NEPA | <ul style="list-style-type: none"> • The Design-Build Procurement and Administration, Procedure No. 625-020-010 provides flexibility by allowing projects to be advertised and selected while the NEPA process is being concluded. This means the Design-Build firm may proceed with certain preliminary engineering activities while the NEPA process is being concluded. • A Design-Build Firm (DBF) cannot prepare a Re-evaluation, make findings, or make NEPA or NEPA-related decisions for the project. A DBF is; however, authorized to prepare information to support the preparation of the Re-evaluation by the District (see Design-Build Request for Proposals boilerplate, available from the Office of Construction). |
| Environment | No |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>18.2.10 Design-Build Projects</p> <p>When a Design-Build firm proposes an alternative technical concept to the concept included in the Request for Proposal for the Design-Build project, the District must reevaluate the noise study in conformance with the provisions of 40 CFR § 1506.5 and 23 CFR § 636.109. The design-build noise study re-evaluation must follow the analysis procedures outlined in this Chapter. If changes in the roadway design occur during the Design-Build process, the following guidance shall be considered:</p> <ol style="list-style-type: none"> 1. If the re-evaluation results in the identification of additional impacted receptors, a change in location of impacted receptors, or an increase in the proposed noise abatement dimensions (height and/or length), the FDOT |

| | |
|------------|--|
| | <p>will construct the proposed abatement as long as it's feasible, reasonable, and desired by the public.</p> <p>2. If the re-evaluation results in reduced traffic noise impacts due to changes in the project design, or previously predicted noise impacts no longer warrant abatement consideration, the FDOT will consider abatement based on the commitments, public sentiment and consultation with OEM, provided that abatement construction is feasible.</p> <p>3. The public shall be engaged when modifications to noise abatement commitments and the intent to alter abatement measures are being considered.</p> |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | See Noise. |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices except for with respect to noise Section 8.10 "To set forth an internal procedure for monitoring contractor's performance in controlling noise and vibration in compliance with the Contract Documents and applicable Laws."

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Georgia

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, the Georgia DOT has a dedicated webpage for Design Build. The Georgia DOT also has a dedicated P-3 page.

<http://www.dot.ga.gov/PS/Innovative/DesignBuild>

<http://www.dot.ga.gov/PS/Innovative/P3>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes, the Georgia DOT has a Design-Build Manual.

http://www.dot.ga.gov/PartnerSmart/DesignManuals/DesignBuild/001-GDOT_Design-Build_Manual.pdf

In addition, their Environmental services webpage is <http://www.dot.ga.gov/IS/Environment>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|--|
| NEPA | <ul style="list-style-type: none"> • National Environmental Policy Act (NEPA): The National Environmental Policy Act (NEPA) [42 U.S.C. 4321 et seq.] is a United States environmental law that established a U.S. national policy promoting the enhancement of the environment. NEPA sets up procedural requirements for all federal government agencies to prepare the three levels of environmental documentation that include Categorical Exclusion (CE), Environmental Assessment (EA)/Finding of No Significant Impact (FONSI), and an Environmental Impact Statement (EIS)/Record of Decision (ROD). • Risk analysis must also include not only traditional cost and schedule issues but also context, environmental, and funding issues, such as those related to railroads, utilities, U.S. DOT Section 4(f), the National Environmental Policy Act (NEPA), appropriations, and capital bill allocation (use it or lose it funding). • For major projects with phased financial plans, the PMP should include the entire scope of the project’s NEPA decision document project description, with detailed information about the funded phase; |
| Environment | <ul style="list-style-type: none"> • The general project location and design concepts, including but not limited to preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design. Prior to completion of the environmental review process, any such preliminary engineering and other activities and analyses must not materially affect the objective consideration of alternatives in the environmental review process. • The guidelines in this Manual shall be used in conjunction with other GDOT Manuals including, but not limited to, GDOT’s Plan Development Process |

| Keyword | Presence |
|---------|---|
| | <p>(PDP), Design Policy Manual, Utility Accommodation Policy and Standards Manual, Bridge and Structural Design Manual, Environmental Procedures Manual, Right-of-Way Manual, Construction Manual, and related Policy Documents or Directives.</p> <ul style="list-style-type: none"> • The purpose of this Manual is to: Describe pre-advertisement activities such as project selection; concept development; environmental planning; costing plans development; and risk assessment and allocation; • All Federal Aid Design-Build projects will comply with the procedures set forth in all applicable CFR including, but not limited to, Title 23 CFR Parts 627 (Value Engineering), 635 (Construction and Maintenance), 636 (Design-Build Contracting), 637 (Construction Inspection and Approval), 710 (Right-of-Way and Real Estate), 771 (Environmental and Related Procedures), and Title 49 CFR Part 24. • The purpose of the report and risk matrix is to determine the project’s delivery goals and the likelihood that Design-Build will achieve those goals based on an assessment of such items as opportunities for innovation, constructability, safety, environmental permitting, right-of-way acquisition, utilities, traffic management, public/business perception, and any third-party constraints. • Major risk transfer projects (Including right-of-way acquisition services, extensive environmental impacts, large number of utility relocations, railroad impacts, multiple federal agencies involvement, complex staging issues, or tolling) • Programmatic GEC roles and responsibilities may include: Environmental and costing plans. • Roles and responsibilities of the GEC assigned to each project may include: Corridor GECs (Full Delivery), Environmental and costing plans; Corridor GECs (Partial/Post-Let Delivery), Environmental and costing plans • For Design-Build projects, the planning, concept development, and environmental process activities generally follow the traditional Design-Bid-Build process as described in GDOT’s Plan Development Process (PDP). • For Design-Build projects, sufficient preliminary engineering should be performed to adequately determine right-of-way limits, identify potential environmental impacts, determine permitting requirements, develop the project scope, and define project requirements in the RFP. • Risk analysis must also include not only traditional cost and schedule issues but also context, environmental, and funding issues, such as those related to railroads, utilities, U.S. DOT Section 4(f), the National Environmental Policy Act (NEPA), appropriations, and capital bill allocation (use it or lose it funding). • The key to overcome risk factors is innovation. Thinking outside the box should be the culture in the environment for managing complex Design-Build projects. • The Design-Build Team may modify the preliminary horizontal and vertical alignments as long as they meet the requirements set forth in the environmental document and the RFP. In most cases all design changes |

| Keyword | Presence |
|---------|--|
| | <p>must remain within the existing/proposed right-of- way as designated in the concept layout, approved concept report and approved environmental document. If changes are proposed by the Design-Build Team that require additional right-of-way or easements, or that are not cleared in the original approved environmental document, then the Design-Build Team may bear the risk associated with additional time and money necessary to acquire right-of-way and/or obtain the necessary environmental documentation. The RFP will provide clarification of the Design-Build Team’s risk related to right-of-way and environmental clearance.</p> <ul style="list-style-type: none"> • Costing plans are developed for most Design-Build projects. The exception is for projects with a well-defined scope and/or minimal right-of-way and environmental impacts. The level of completeness of the costing plans should be approximately 30 percent and should provide an adequate amount of detail necessary to quantify right-of-way, utility and environmental impacts. The costing plans are not intended to be the scope of work unless otherwise stated in the RFP. However, the costing plans are used as a basis for the scope of work and the environmental document. • The level of the survey and mapping file should be adequate to support completion of the environmental document and to support preliminary engineering. Preliminary drainage design should be performed as part of the costing plans to determine potential right-of-way and environmental impacts, as well as permit requirements. • Steps in establishing flexible design criteria are: 1) Identify design constraints and potential conflicts (ROW, utility locations, historic neighborhoods, environmentally sensitive areas, etc.) that can be mitigated through alternative or innovative design approaches. 2) Catalog DEs or DVs required under each design option. 3) Articulate the rationale for DEs or DVs (use of performance specifications, mitigation of environmental impact, alleviation of ROW issues, etc.). • The project synopsis is intended to provide high level information regarding the information that is available on a project, and the general scope of services of the Design-Build team specific to activities such as roadway design, environmental, permitting, Right-of-Way acquisition, geotechnical services, drainage, erosion control, and MS4. • The ATC is not acceptable in its present form, but may be acceptable upon the satisfaction, in GDOT's sole discretion, of certain identified conditions which must be met or clarifications or modifications that must be made, including, but not limited to, any required environmental reevaluation related to the ATC, which GDOT may condition upon a GDOT Re-evaluation Period. • Although traditional incentives are focused on cost, schedule, and safety performance, Design-Build contract incentives can be written for almost any performance criteria, including public involvement and public relations, maintenance of traffic volumes, teamwork, design innovations, and environmental performance. |

| Keyword | Presence |
|---------|--|
| | <ul style="list-style-type: none"> • The OID-PM is responsible for engaging (and reengaging) GDOT SMEs as early as possible following the notice of award to discuss Design-Build delivery process, critical GDOT participant roles, the dynamic between the design phase and construction phase, and the various risks associated with the projects (third-party, geotechnical, environmental, etc.) • Office of Environmental Services (OES) – Early coordination with OES is essential. An early coordination meeting should be facilitated to determine the extent of an environmental re-evaluation, which would result from any changes between the costing plans/original approved environmental document and the Design-Build Team’s final design. In addition, the permit(s) for temporary and permanent impacts should be discussed. Design-Build Team-generated plans should be submitted to the OES for review. Finally, the OID-PM must obtain a certification of environmental clearance from the OES prior to issuance of NTP 3 for any portion of the Design-Build project. • Note: GDOT’s current practice for federally-funded projects is to award the Design-Build contract only after the environmental document has been approved. • NTP 2 is issued after the environmental document is approved on federally-funded projects. On typical projects with an environmental document approval prior to award of the project, NTP 2 may be issued with NTP 1. • The requirements necessary for GDOT to issue NTP 3 may include the Design-Build Team obtaining the following (refer to each project’s DB Documents for specific requirements): Conceptual Layout Plan, Quality Management Plan acceptance; All environmental document approvals/permit(s); Utility agreements (if necessary), encroachment permits, utility relocation plans, and/or “no conflict” letters; Environmental certification issued by GDOT’s Office of Environmental Services; Right-of-Way certification issued by GDOT’s Office of Right-of-Way; Transportation Management Plan (TMP); Erosion Sedimentation and Pollution Control Plan (ESPCP) and Notice of Intent (NOI) submitted to Georgia Environmental Protection Division (EPD) along with EPD concurrence; Traffic Control Plan acceptance; and Release for Construction plans • Environmental and sensitive areas should be described or shown on mapping contained in the appendices; • The typical agenda for the Post Design-Build Review meeting includes the following: Environmental Documentation; Environmental Permitting <p>Environmental Document</p> <p>If possible, the RFP should not be advertised until after the environmental process has concluded. The OID-PM should establish a Design-Build procurement schedule based on this assumption.</p> <p>In some cases, the RFP will be advertised prior to the conclusion of the environmental process, however GDOT’s current practice is that the Project will</p> |

| Keyword | Presence |
|---------|---|
| | <p>not be awarded until the environmental process has concluded, unless otherwise approved by the Chief Engineer.</p> <p>In the event GDOT determines that the Design-Build project will be procured and awarded prior to the approval of the environmental document, the requirements set forth in 23 CFR Part 636.109 will apply. In this case, the RFP will include a provision that prevents the Design-Build Team from proceeding with right-of-way acquisition, final design or construction activities prior to the approval of the environmental document, pursuant to 23 CFR 771.113(a). In addition, the RFP will include a provision ensuring that no commitments are made to any alternative being evaluated in the environmental process and that the comparative merits of all alternatives presented in the environmental document (including the no-build alternative) will be evaluated and fairly considered. Finally, the RFP will include a termination provision in the event the nobuild or no action alternative is selected at the end of the environmental process.</p> <p>23 CFR 636.109 allows the agency to proceed with pre-qualifications, industry review and a Shortlist process before the environmental process is complete. The following are considered as environmental document approval: Categorical Exclusion (CE) classification, Finding of No Significant Impact (FONSI), or Record of Decision (ROD) along with GDOT’s authorization to proceed.</p> <p>The process to identify, complete and obtain approvals for the appropriate environmental document (e.g., EA, EIS, Georgia Environmental Policy Act (GEPA), etc.) for a Design-Build project is identical to the process for a traditional Design-Bid-Build project as described in GDOT’s Environmental Procedures Manual. At the time when a project is being evaluated for Design-Build suitability, the OI-PM will coordinate with GDOT’s Office of Environmental Services (OES) in order to fully assess the project’s risks and current schedule related to the environmental document and permitting activities.</p> <p>Where possible, and upon approval of OES and/or FHWA, documentation of any potential impacts based on the costing plans should be described in general terms (such as “up to” or “a maximum of” at each potential location). This may allow for minor modifications which reduce impacts without triggering major changes to approved environmental document.</p> <p>The environmental document is a critical component of the delivery process. The Design-Build Team must understand the importance of this document, its contents and the risks associated with any changes that could result in an environmental reevaluation.</p> <p>5.15 Environmental Compliance and Permitting</p> <p>The Design-Build Team must retain the expertise needed to understand fully the following elements:</p> <ul style="list-style-type: none"> • The parameters of the original approved environmental document and any impacts that may result due to any proposed design changes; • The environmental permitting process for temporary and/or permanent impacts; • Stream/wetland classifications; and • Mitigation strategies. |

| Keyword | Presence |
|---------------------|--|
| | <p>The Design-Build Team may be required to prepare an Environmental Compliance and Mitigation Plan (ECMP) and to retain an Environmental Compliance Manager (ECM) per the requirements set forth in the RFP.</p> <p>The Design-Build Team should facilitate a meeting with the OID-PM and OES within 45 days of NTP 1 to discuss proposed changes from the original approved environmental document, anticipated permit(s), schedule for special studies (if additional coverage is needed), schedule for environmental document reevaluation (if needed), and any other elements that could affect the project. The Design-Build Team must ensure compliance with the environmental commitment sheet(s), related environmental document, and permit(s) at all times on the Design-Build project.</p> <p>The OID-PM, PMC-CM, and GDOT OES Liaison are responsible for verifying that the Design-Build Team is complying with the environmental commitment sheet(s), related environmental document, and permit(s). GDOT may issue a stop work order and/or withhold payment for non-compliance.</p> |
| Cultural (resource) | Context dimension factors are: cultural impacts |
| Historic | <p>Flexible response mechanisms for permit issues, as well as flexible planning and design for minimal impact from permit issues, must be developed for complex project success, especially when uncertainty is high (e.g., geotechnical and subsurface conditions, State Historic Preservation Office (SHPO) sites).</p> <p>Steps in establishing flexible design criteria are:</p> <ol style="list-style-type: none"> 1) Identify design constraints and potential conflicts (ROW, utility locations, historic neighborhoods, environmentally sensitive areas, etc.) that can be mitigated through alternative or innovative design approaches. |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>A noise analysis, if required, will be performed per GDOT's Environmental Procedures Manual. This analysis will be accomplished prior to the completion of the environmental planning process.</p> <p>Feasible sound barrier locations should be identified in the RFP along with decibel reduction requirements for areas requiring sound barriers. If necessary, the RFP should include requirements that the Design-Build Team shall design and construct the final sound barriers to meet decibel reduction requirements of the noise analysis. The RFP will include available noise barrier type(s).</p> |
| Species | No |
| Stormwater | No |
| Erosion | <ul style="list-style-type: none"> • Erosion control requirements will be in accordance with the National Pollutant • Discharge Elimination System (NPDES) Permit. The Design-Build Team is typically responsible for preparing and submitting the Erosion and Sedimentation and Pollution Control Plans (ESPCP), and submitting the Notice of Intent (NOI) to EPD for review and comment. In addition, the Design-Build Team typically is responsible for paying the related NOI fee. GDOT will typically not review ESPCP for Design-Build projects. |

| Keyword | Presence |
|---------|--|
| | <ul style="list-style-type: none"> • The project synopsis is intended to provide high level information regarding the information that is available on a project, and the general scope of services of the Design-Build team specific to activities such as roadway design, environmental, permitting, Right-of-Way acquisition, geotechnical services, drainage, erosion control, and MS4. • General duties are as varied as safety, erosion control, quality management, traffic control, personnel management, communications, and predominately project administration. <p>5.14 Erosion Control</p> <p>One of the most important elements in any project is the development and implementation of the Erosion Sedimentation and Pollution Control Plans (ESPCP). The Design-Build Team is typically responsible for:</p> <ul style="list-style-type: none"> • Developing ESPCP per the applicable NPDES permit; • Complying with the applicable NPDES permit; • Preparing any Stream Buffer Variance (SBV) application(s); • Preparing the Notice of Intent (NOI), and submitting the NOI and applicable fee to Georgia Environmental Protection Division (EPD); • Obtaining concurrence from EPD for the ESPCP; • Providing a Work Site Erosion Control supervisor in accordance with the current addition of the Standard Specifications for construction, • Installing Best Management Practices (BMPs) per the ESPCP; • Maintaining BMPs per GDOT specifications; • Documenting and correcting any deficiencies; • Paying any EPD consent order(s); and • Filing the Notice of Termination (NOT) with EPD after maintenance acceptance. <p>Erosion control BMPs, installation and maintenance is included in the Design-Build Team’s lump sum cost to complete the work. The Design-Build Team is responsible for complying with the applicable NPDES permit. Any deficiencies shall be immediately corrected by the Design-Build Team at no cost to GDOT. The PMC-CM is responsible to ensure that the Design-Build Team is in compliance with the applicable NPDES permit, GDOT specifications, and related contract documents.</p> <p>5.19.3 Erosion Control</p> <p>For Design-Build Projects, CEI erosion control inspections shall be performed in accordance with the RFC Plans and the requirements of Standard Specification Section 167.</p> |
| Permit | <ul style="list-style-type: none"> • For Design-Build projects, sufficient preliminary engineering should be performed to adequately determine right-of-way limits, identify potential environmental impacts, determine permitting requirements, develop the project scope, and define project requirements in the RFP. • At the time when a project is being evaluated for Design-Build suitability, the OID-PM will coordinate with GDOT’s Office of Environmental Services (OES) in order to fully assess the project’s risks and current schedule related to the environmental document and permitting activities. |

| Keyword | Presence |
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| | <ul style="list-style-type: none"> • Preliminary drainage design should be performed as part of the costing plans to determine potential right-of-way and environmental impacts, as well as permit requirements. • GDOT should obtain signal permit(s) prior to advertising the RFP. This applies even if a conditional permit approval is obtained prior to the RFP advertisement in which case a revised permit would be prepared by the Design-Build Team during the final design phase. • Establishment of flexible design criteria is closely related to project cost, schedule, and quality performance (e.g., designing to a budget) as well as critical permit issues. • These activities of the Design-Build Team may include final design, permitting, utility coordination/relocation activities, traffic control restrictions, construction activities, and any other project specific activities. • The project synopsis is intended to provide high level information regarding the information that is available on a project, and the general scope of services of the Design-Build team specific to activities such as roadway design, environmental, permitting, Right-of-Way acquisition, geotechnical services, drainage, erosion control, and MS4. • In addition, the permit(s) for temporary and permanent impacts should be discussed. • The Design-Build Team’s Lead Contractor Project Manager is responsible for managing all aspects for the project including planning, project controls, design, permitting, construction, quality, and safety. • The Design-Build Team’s Lead Consultant Project Manager is responsible for oversight of all necessary design-related work and permitting throughout the term of the Project. • Developing ESPCP per the applicable NPDES permit; Complying with the applicable NPDES permit; • The Design-Build Team is responsible for complying with the applicable NPDES permit. <p>Environmental Permits</p> <p>Permitting issues need to be addressed as early as possible. Development of timelines very early in the project life cycle for environmental, U.S. DOT Section 4(f), and other critical regulatory reviews is critical for successful projects. Flexible response mechanisms for permit issues, as well as flexible planning and design for minimal impact from permit issues, must be developed for complex project success, especially when uncertainty is high (e.g., geotechnical and subsurface conditions, State Historic Preservation Office (SHPO) sites). Information from the 5DPM process, as well as definition of critical success factors, provide insight into critical permit issues that may have a potential negative impact on cost, schedule, technical scope, context, or financing. Also, permit issues may be identified in risk analysis. Steps in dealing with critical permit issues are: 1) From the 5DPM, identify the critical permit issues that must be resolved before design can be completed and construction can begin: To be effective, identifying critical permit issues</p> |

| Keyword | Presence |
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| | <p>should be implemented in the very early stages of planning, preferably before alignments have been finalized and irreversible design decisions have been made. 2) Discuss potential major regulatory issues with responsible agencies and utilize flexible designs to minimize the impact of potential points of conflict with permitting agencies (e.g., be responsive to their concerns): Critical permit issues need to be evaluated as soon as possible in the development of the process. If permits cannot be obtained immediately, it is recommended that the design is flexible enough to be changed if necessary. 3) Make early contact with regulatory agencies responsible for permits to communicate and coordinate submittal and approval schedules. Investigate the potential for phased permitting, simultaneous reviews, fast tracking, etc.: Talking to the regulatory agencies should begin as soon as possible to let them know that GDOT will be needing a permit for the project soon. 4) Ensure that submittal packages are coordinated, complete, and timely: The task of obtaining the permits should be assigned to a specific person so there is one point of contact.</p> <p>The OID-PM will coordinate with OES as early as possible to identify all potential environmental permit(s) that may be required. If a preliminary meeting with regulatory agencies to discuss possible permit requirements is appropriate, then the OID-PM will coordinate with OES who will facilitate such a meeting.</p> <p>To allocate contract risk properly, GDOT should evaluate each anticipated permit and determine if the permit should be obtained in advance of the RFP or by the Design- Build Team. Items that should be evaluated include schedule risks (time needed to obtain permit), potential for permit modification (design changes by the Design-Build Team), and risks associated with third-party reviews that are outside the Design-Build Team's or GDOT's control.</p> <p>Permits with low risk of modifications should generally be obtained in advance (if the letting schedule allows) to accelerate the Design-Build Team's schedule after Letting. Permits that require coordination with third parties should be coordinated with the respective agency in advance of RFP advertisement. Consideration should be given to identifying in the RFP a general timeframe(s) for permit review periods. The Design-Build Team will often be responsible for obtaining environmental permit(s) based on their accepted final design. The Design-Build Team will often assume the risk of obtaining the permit and also responsible for mitigating any impacts. The OIDPM must ensure the RFP clearly delineates the Design-Build Team's scope of services with respect to environmental permitting.</p> |
| Commitment | <ul style="list-style-type: none"> • In addition, the RFP will include a provision ensuring that no commitments are made to any alternative being evaluated in the environmental process and that the comparative merits of all alternatives presented in the environmental document (including the no-build alternative) will be evaluated and fairly considered. • Open, timely communication and a commitment to promises are the best response to public concerns or inquiries. Public relations specialists can be retained to serve as points of contact. • The Design-Build Team must ensure compliance with the environmental commitment sheet(s), related environmental document, and permit(s) at all times on the Design-Build project. |

| Keyword | Presence |
|------------|---|
| | <ul style="list-style-type: none"> The OID-PM, PMC-CM, and GDOT OES Liaison are responsible for verifying that the Design-Build Team is complying with the environmental commitment sheet(s), related environmental document, and permit(s). |
| Compliance | <ul style="list-style-type: none"> Released for Construction Plans and Documents: Documentation that is prepared by the Design- Build Team, accepted by GDOT, is in compliance with the executed contract, and is used by the Design-Build Team to build the project. The performance of all right-of-way services will be in full compliance with 42 U.S.C. 4601 et seq. (the “Uniform Act”); Title 49 CFR Part 24 Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally-Assisted Programs; Title 23 CFR Part 710 Right-Of-Way and Real Estate; all relevant State laws including, but not limited to, Georgia Code Titles 22 and 32; and in accordance with GDOT’s Right-of- Way Manual of Policies and Procedures. The TRC will evaluate the Two Phase Low Bid submittals on a pass/fail basis for its compliance with the requirements set forth in the RFP. GDOT is responsible for enforcing the contract such that if a project element constructed is not in compliance with the contract or Specifications, then the Design-Build Team is responsible for correcting. In some instances, on major Design-Build projects, SRTA will be signature authority for the contract. They will inspect traffic control daily to ensure it is in compliance with the traffic control plan and GDOT’s 5240-1 Work Zone Safety and Mobility Policy. The purpose of the site visits is to visually inspect the progression of the work for compliance to the RFC Documents. If elements of the work are not compliant with the RFC Documents, the EOR shall coordinate with the DB Team to determine corrective action and describe the corrective action in the site observation compliance report. When performing a review of Design-Build Team submittals, GDOT’s primary focus should be toward Design-Build contract compliance. The Design-Build Team is responsible for performing a complete, coordinated, economical, timely, fully-functional quality design, including survey and geotechnical elements, all in compliance with the DB Contract Documents. Additionally, GDOT can coordinate and submit RFIs if additional information is needed to determine DB Contract compliance with RFC plans. <p>5.18.5 EEO Compliance The Design-Build Team will prepare and submit EEO Compliance in accordance with the GDOT Construction Manual and the Design-Build Construction SOP.</p> <p>5.15 Environmental Compliance and Permitting</p> |

| Keyword | Presence |
|---------|---|
| | <p>The Design-Build Team must retain the expertise needed to understand fully the following elements:</p> <ul style="list-style-type: none"> • The parameters of the original approved environmental document and any impacts that may result due to any proposed design changes; • The environmental permitting process for temporary and/or permanent impacts; • Stream/wetland classifications; and • Mitigation strategies. <p>The Design-Build Team may be required to prepare an Environmental Compliance and Mitigation Plan (ECMP) and to retain an Environmental Compliance Manager (ECM) per the requirements set forth in the RFP.</p> <p>The Design-Build Team should facilitate a meeting with the OID-PM and OES within 45 days of NTP 1 to discuss proposed changes from the original approved environmental document, anticipated permit(s), schedule for special studies (if additional coverage is needed), schedule for environmental document reevaluation (if needed), and any other elements that could affect the project. The Design-Build Team must ensure compliance with the environmental commitment sheet(s), related environmental document, and permit(s) at all times on the Design-Build project.</p> |
| Monitor | <ul style="list-style-type: none"> • GDOT Policy 7115-2 (Sub-Recipient Monitoring Policy) • Continually monitor the plan and update as needed. • During the development of the RFP, the OID-PM must monitor and make the necessary modifications to the Design-Build cost estimate. • Set up a tracking and monitoring system to manage documentation, request, approval, and implementation of each DE or DV. • The identified key performance metrics that are used to monitor for project success can be used to develop incentives in Design-Build contracts. • During the design phase of the Design-Build contract, the PMC-CM is primarily responsible for processing payments based on the approved Schedule of Values, providing comments on any critical path method (CPM) schedule submittals, participating at various meetings (during the design and construction phases), and monitoring the status of the project. • The Construction Engineering and Inspection (CEI) staff will provide monitoring and inspection of the construction in conformance with the plans, specifications and special provisions to ensure test report records or certificates are in compliance. • The State Construction Engineer (SCE) oversees and monitors high level financial administrative procedures, ensuring proper audit procedures are observed. • The District Utilities Office will review utility-related submittals (utility plans, preliminary utility status report, etc.) and must monitor the status of utility coordination activities. On Design-Build projects, the Design-Build Team is responsible for much of this coordination, which the District Utilities Office must monitor. |

| Keyword | Presence |
|------------|--|
| | <ul style="list-style-type: none"> • GDOT Authorized Representative — The individual authorized that is responsible for monitoring the Nonconformance Report process. • Monitor the schedule activity(s) to determine if any time was lost on the schedule and document the impact. |
| Mitigation | <ul style="list-style-type: none"> • The Conflict Committee will convene as expeditiously as possible to determine if an actual or perceived conflict exists and to determine if appropriate avoidance or mitigation measures shall be implemented. • The OID-PM must collaborate with all affected GDOT offices during the identification of risks, development of mitigation strategies and the overall development of the RFP for a Design- Build project. • Implementation of risk analysis and mitigation plans at early stages of the project is critical to project success. • Develop mitigation strategies for each critical risk factor. Assign responsibility • for tracking risk to a specific team member. • Allocate resources needed to support mitigation strategies. Also, consider contract language, incentives, and partnership agreements that reduce resistance to the mitigation strategy. • Risk analysis outcomes will be used to develop aggressive mitigation plans including the possibility of re - allocating contingency within project segments or phases to prevent delays or cost increases. • In addition to the general approval, any mitigation measures that will be required of the Design-Build Team should be identified and included as scope requirements in the RFP. • Consequently, • GDOT should contact utility owners during the development of the RFP to plan activities, discuss the project, discuss risks and possible mitigation strategies, and to obtain MOUs. • Articulate the rationale for DEs or DVs (use of performance specifications, mitigation of environmental impact, alleviation of ROW issues, etc.). • Other meetings may include Design-Build workshops which are used periodically by GDOT to discuss a number of topics that may include, but is not limited to GDOT’s Design-Build program, utility coordination, schedule development and/or risk mitigation. • Discuss potential Design-Build risks and possible mitigation strategies. • The Design-Build Team may be required to prepare an Environmental Compliance and Mitigation Plan (ECMP) and to retain an Environmental Compliance Manager (ECM) per the requirements set forth in the RFP. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

There was no information found related to monitoring the contractor.

Hawaii

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No. It appears that a P3 was used to pay for improvements to Honolulu International Airport central concourse, but this is the only example of a P3 identified for HIDOT.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

NA

Idaho

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Idaho Transportation Department (ITD) does not have a dedicated page, but they do have a link to a slide presentation on “Alternative Project Delivery”, published by the ITD “Innovative Contracting Unit”, which provides “Alternative Contracting Methods Project Selection Guidelines”. See the presentation at the link below and attached.

<https://itd.idaho.gov/wp-content/uploads/Alternative-Project-Delivery-Workshop-2014-05-14.pdf>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. It is noted that Section 40-902, Idaho Code describes the contracting process for Design-Bid-Build (DBB) projects. Section 40-904 and 40-905, Idaho Code allows the Department to use Design-Build (DB) and Construction Manager/General Contractor (CMGC) contracting methods under certain circumstances. 23 CFR 636 describes FHWA’s policies and procedures for utilizing design-build contracting on federal-aid projects. The guidelines describe an opportunity and risk evaluation process, which involves an examination of seven separate factors relating to each delivery method. Upon examination of each factor, the process asks users to rate the contracting methods in terms of their appropriateness for each factor.

<https://itd.idaho.gov/wp-content/uploads/Alt-Contracting-Project-Selection-Guidelines-2012-11-09.pdf>

Note that the guidelines refer to an Appendix, Contracting Method Evaluation Matrix, which is not provided.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence in IDT Alt Contracting Project Selection Guidelines |
|---------------------|--|
| NEPA | No |
| Environment | No |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

| Keyword | Presence in IDT Alternative Project Delivery Workshop |
|---------------------|---|
| NEPA | <ul style="list-style-type: none"> • National Environmental Policy Act (NEPA) <ul style="list-style-type: none"> ○ Issue RFQ and RFP prior to conclusion of NEPA ○ Proceed with award prior to NEPA ○ Issue NTP to proceed with Preliminary Design prior to NEPA ○ Proceed with Final Design and Construction after NEPA • DBF may help with analysis to define alternatives <ul style="list-style-type: none"> ○ DBF cannot make any commitments regarding alternatives ○ NEPA retained under the control of ITD • Overview of DB <ul style="list-style-type: none"> ○ Benefits ○ Varying degrees of design ○ CFR's that tie NEPA into the DB selection process |
| Environment | No |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | <ul style="list-style-type: none"> • DBF may help with analysis to define alternatives <ul style="list-style-type: none"> ○ DBF cannot make any commitments regarding alternatives • RFQ Evaluation Criteria <ul style="list-style-type: none"> ○ Scored Criteria ○ Major Participant Experience <ul style="list-style-type: none"> ▪ Quality, timely, and effective project delivery methods ○ Past Performance & Safety <ul style="list-style-type: none"> ▪ History of project delivery success ▪ Safety record and commitment to safety |
| Compliance | No |
| Monitor | No |
| Mitigation | <ul style="list-style-type: none"> • Scored Criteria <ul style="list-style-type: none"> ○ Project Understanding and Approach ○ Understanding of the goals and technical aspects ○ Risk identification and mitigation • Tips for a strong response <ul style="list-style-type: none"> ○ Follow instructions ○ “Similar scope, size and complexity” ○ Do not simply repeat the requirements in the RFQ or RFP, demonstrate how the proposal exceeds the requirements |

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| | <ul style="list-style-type: none">○ Describe in detail how the project will be executed; include potential risks and issues involved, solutions and mitigation efforts, and contingency plans |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Illinois

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Illinois Department of transportation does not have a dedicated page, but they do have a link to a slide presentation on “Innovative Project Delivery at IDOT”, published by the Office of Planning and Programming. The presentation showcases several projects. See the presentation at the link below and attached.

http://www.idot.illinois.gov/Assets/uploads/files/About-IDOT/Pamphlets-&-Brochures/Events/Multi-Modal-Planning/Fall-Planning/2016/1breakout2_2016-10-06InnovativeProjectDelivery.pdf

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

The aforementioned presentation notes that Design Build was authorized by FHWA through TEA-21 (1998) / DB Rule (23 CFR 636) effective as of January 2003. However, Illinois authorization is limited to the Regional Transit Authority; Public Building Commission, and Capital Development Board (expired).

Design build is also mentioned in the Illinois Bureau of Design and Environment Manual, Chapter 20, Requirements for Major Projects, but not specifically with regard to guidelines. The manual states that, on a design-build project, the Initial Financial Plan should be approved prior to FHWA concurrence in the award of the design-build contract.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence in “Innovative Project Delivery at IDOT” |
|---------------------|---|
| NEPA | No |
| Environment | Houbolt Road Bridge Benefits: <ul style="list-style-type: none"> • Reduced emissions yields environmental benefits I-55 Managed Lane Project <ul style="list-style-type: none"> • Document findings of environmental studies I-55 Bus-on-Shoulder Program <ul style="list-style-type: none"> • Sustainable transportation solutions that meets future environmental & economic needs |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> • Houbolt Road Bridge Summary <ul style="list-style-type: none"> ○ CenterPoint Responsibilities <ul style="list-style-type: none"> ▪ Regulatory Permits • State of Illinois Responsibilities <ul style="list-style-type: none"> ○ Issue State Highway Access Permit (I-80 and US 6) • Joliet Responsibilities |

| | |
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| | <ul style="list-style-type: none"> ○ Highway Construction Permit for Houbolt Road from I-80 to US 6 |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | <ul style="list-style-type: none"> • I-55 Managed Lane Project <ul style="list-style-type: none"> ○ Develop mitigation strategies |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Indiana

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. Indiana is not authorized to use design-build for transportation projects.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Iowa

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Kansas

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Kansas DOT does not have a dedicated page, but they do have information regarding the authorization to use design-build on one pilot project in Johnson County. The state legislature approved the use of a new design-build delivery method for the Johnson County Gateway: I-435/I-35/K-10 Interchange (phase 2). The project was selected as the design-build project for Kansas due to its size and complexity.

https://www.ksdot.org/Assets/wwwksdotorg/Headquarters/PDF_Files/pressrelease2014/Jan10GATEWAY.pdf

A January 2014 news release details to selection of Gateway Interchange Constructors (GIC) for the aforementioned design-build project.

http://tworks.ksdot.org/ProjDocuments/I-435_Gateway_Project_Design-build_factsheet_KA-1002-04_8-16-2012.pdf

Notably, this factsheet describes the adoption of Design-Build as an alternative project delivery tool being used in 47 states: “In an ever-competitive economic climate, where transportation projects are getting bigger and resources are getting tighter, 47 states and Puerto Rico have adopted design-build as a way to deliver large, complex projects faster and with constrained budgets. Design-build as a transportation project delivery method is one of the most significant trends in U.S. design and construction today.

https://kdotapp.ksdot.org/5CountyStudy/pdfs/innovative_financing_programevents030410.pdf

This program details the 5-county regional conference that KDOT hosted in 2010 entitled, “Alternative Delivery Methods for Infrastructure: Public-Private Partnerships, Innovative Finance and the Search for the Next Generation of Solutions”. During this conference, a guest speaker from Missouri spoke about a design-build project in Kansas City Missouri.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |

| | |
|------------|----|
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Kentucky

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. The Kentucky Transportation Cabinet is authorized to use design-build on up to five projects per year, and there is information available online pertaining to several of the existing Design-Build contracts, but no specific process/procedure outlined.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Louisiana

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes. The Louisiana DOT has a dedicated webpage for D-B.

http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Design-Build/Pages/default.aspx

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. The Louisiana DOT has a Design-Build Manual as well as a Construction Quality Assurance Program for LA DOTD Design-Build Program.

http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Design-Build/DesignBuild%20Manuals/DOTD%20Design-Build%20Manual.pdf

http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Engineering/Design-Build/DesignBuild%20Manuals/DOTD%20Quality%20Assurance%20Program%20for%20Design-Build%20Projects%20-%202016.pdf

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence In D-B Manual |
|---------|--|
| NEPA | <ul style="list-style-type: none"> • However, the LA DOTD should not limit what it considers a "complex" project – a complex project may include a project that is a technically complex bridge structure or a project that has a particularly complex environmental issue, whether related to site conditions/constraints or to NEPA mitigations. • An issue unique to a procurement that utilizes funding from the Federal Highway Administration (FHWA) is to remember that the procurement documents must inform the proposers of the general status of the National Environmental Policy Act (NEPA) status, generally, it is the policy of the LA DOTD to complete the NEPA process prior to award of the DB contract. • Ideally, the RFP will be issued after the NEPA process has been completed. In that instance, the FHWA's concurrence and approval of the RFP constitutes the FHWA's project authorization as well as the FHWA's approval of the LA DOTD's request to release the RFP. • If the RFP is issued prior the completion of the NEPA process, the FHWA's concurrence and approval only constitutes FHWA's indication that the LA DOTD's activities comply with federal requirements and does not constitute project authorization or obligation of federal funds as well as FHWA's approval of the LA DOTD's request to issue the RFP. Prior to the completion of NEPA, FHWA's concurrence and approval of the RFP do not constitute project authorization. • It should be noted that in compliance with 23 C.F.R. 635.112 and 636.109, there are certain requirements regarding the timing of release of the RFP and the National Environmental Policy Act (NEPA) process. |

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| | <ul style="list-style-type: none"> • Is a method for the LA DOTD to release a draft of the RFP document to the short-list of Proposers prior to receiving NEPA clearance. This is in lieu of proceeding with a final RFP with FHWA concurrence and approval prior to completion of NEPA, in that the draft RFP is not a final document issuance by the LA DOTD and still retains flexibility to respond to the NEPA process, but does provide information to the Proposers for their comment; • Among the revisions made by SAFETEA-LU were the elimination of the dollar thresholds for "qualified" projects; and permission to release an RFP or award a design-build contract prior to completion of NEPA. • Prior to completion of the NEPA review process, any such preliminary engineering and other activities and analyses must not materially affect the objective consideration of alternatives in the NEPA review process. • All non-Title 23 U.S.C. requirements including but not limited to: a. National Environmental Policy Act (NEPA) of 1969 • On design-build projects where a RFP is approved by FHWA prior to the completion of the NEPA process: Once the NEPA process is completed, FHWA will review the preliminary design to ensure that any decision and commitment reached on the NEPA documents are implemented on the preliminary plans. FHWA approval will be needed if modifications are required on the preliminary plans. The procurement process will stop until the NEPA process is completed. After the completion of the NEPA process, FHWA authorization will be required to proceed with final design and construction. • FHWA Design-Build Regulations require: Certain steps must be followed if DB RFP issued prior to NEPA decision |
| <p>Environment</p> | <ul style="list-style-type: none"> • The Project Selection Committee will be chaired by the LA DOTD's Project Manager, and will include the following members: E) Environmental Administrator • However, the LA DOTD should not limit what it considers a "complex" project – a complex project may include a project that is a technically complex bridge structure or a project that has a particularly complex environmental issue, whether related to site conditions/constraints or to NEPA mitigations. • Environmental Issues – Environmental mitigation measures and hazardous materials mitigation should be included in the DB contract. Also, where environmental documentation or permits must be obtained, the project planning process can be delayed. An issue unique to a procurement that utilizes funding from the Federal Highway Administration (FHWA) is to remember that the procurement documents must inform the proposers of the general status of the National Environmental Policy Act (NEPA) status, generally, it is the policy of the LA DOTD to complete the NEPA process prior to award of the DB contract. • The site visit would allow the attendees of the Procurement Strategy Session to familiarize themselves with the environment in which the project will be constructed, and may add perspective to the attendees regarding certain risks or challenges that the projects may face. |

- This topic will be covered by the LA DOTD's Project Manager, and would generally cover the following items: B) Type and status of environmental documentation, permitting, and environmental mitigation, if necessary;
- Some examples of stakeholders that the LA DOTD may encounter on its DB projects are as follows: G) The Environmental Protection Agency; K) The Louisiana Department of Environmental Quality;
- Some risks frequently found on projects are as follows: C) Environmental approvals;
- The group informational meeting can address a range of topics, including the following: D) Any special environmental or community mitigation requirements;
- It includes, but is not limited to, preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design.
- The selection will be agreed upon by the FHWA Assistant Division Administrator and the LADOTD Chief Engineer. Examples of projects which may be selected: Complex Emergency Relief projects, Major or complex bridge structure projects, or projects which involve a high degree of public controversy or environmental impacts.
- Environmental approvals except those specifically delegated under Sections 6004 and 6005 of SAFETEA-LU.
- This RFQ is being issued concurrently with development of the environmental documentation and acquisition of all environmental permits that may determine particular items within the final scope of services as well as many Project requirements. Any Work described herein is subject to adjustment as a result of the environmental documentation/permits and by other decision of the Louisiana department of Transportation and Development (LA DOTD).
- The appropriate environmental clearances and permits except those specifically assigned to the Design-Builder;
- The Design-Builder shall provide specified insurance, including, but not necessarily limited to,
 - professional liability insurance covering design as well as Commercial General Liability (CGL), property (including builder's risk), umbrella/excess liability, environmental liability, public liability, automobile liability, owner's protective liability, employer's liability, and workers' compensation.
- Firms serving solely as an environmental coordinator or public involvement/community relations coordinator may be on multiple teams.
- The successful Design-Builder shall be responsible for furnishing all labor, material, plant, equipment, services, and support facilities for the following (this list is not intended to be all-inclusive): G) Environmental permit compliance monitoring; H) Additional environmental investigations

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| | <p>and permit modifications resulting from the Design-Builder’s design and/or construction activities;</p> <ul style="list-style-type: none">• 1.13 ENVIRONMENTAL STATUS AND MITIGATIONS [The status of any environmental documentation should be included here.]• A concept is not eligible for consideration as an ATC if, in the LA DOTD’s sole judgment, it is premised upon or would require and of the following: D) Further environmental evaluation of the Project; or• Pre-Proposal Alternate Technical Concept submissions must include the following: I) A preliminary analysis and quantitative discussion of potential impacts on vehicular traffic (both during and after construction), environmental permitting, community impact, safety, and life-cycle Project and infrastructure costs, including impacts on the cost of repair, maintenance, and operation;• The lump sum Price Proposal must consist of the following items: G) Form PC4, Project-Wide Environmental Mitigation and Compliance;• B2.2.4 Project-Wide Environmental Mitigation and Compliance (Form PC4)• For Price Center 4, Project-Wide Environmental Mitigation and Compliance, the Proposer shall provide lump sum prices for the activities shown on Form PC4 (see Appendix C – Proposal Forms). The Proposer may add activities as appropriate to reflect its plan to carry out the Work. The sum of all prices of the activities will be the PCV for Price Center 4.• Form PC5 PROJECT-WIDE HAZARDOUS AND CONTAMINATED SUBSTANCES REMEDIATION ACTIVITIES Environmental Design and Monitoring of Construction Zone• The Design-Builder shall, in association with the design and construction of the physical components of the Project, perform the following elements of Work: G) Environmental mitigation and compliance monitoring (see Contract Documents, Part 3 – Design Requirements and Performance Specifications, Appendix A – Performance Specifications, Environmental Performance Specification); H) Any additional environmental investigations and monitoring associated with or resulting from the Design-Builder’s actions;• Hazardous Materials - Any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 United States Code (USC) 9601, et seq.;• DB 104-8 CHANGES IN BASIC PROJECT CONFIGURATION; UTILITY RELOCATIONS; ENVIRONMENTAL MITIGATION• The Design-Builder acknowledges and agrees that constraints set forth in the environmental approvals and other Contract Documents, as well as the site conditions and the existing ROW limits, will impact the Design-Builder’s ability to make non-material changes in the Basic Project Configuration.• DB 104-8.4 Changes in Environmental Mitigation Requirements Changes in environmental mitigation requirements may occur as the result of changes in governmental rules, as the result of changes in the Work directed by the LA DOTD, or as the result of design decisions made by the Design-Builder |
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or its construction methodologies. The LA DOTD will issue a Change Order for changes in the scope of environmental mitigation requirements to be performed by the Design-Builder to the extent that they are directly attributable to changes in governmental rules or changes in the Work directed by the LA DOTD (including any assignment of mitigation requirements to the Design-Builder that were originally contemplated to be performed by the LA DOTD or others).

- A typical agenda must include the following items: I) Environmental issues;
- When the Design-Builder elects to develop new, noncommercial Material sources, the requirements for environmental acceptability apply, and the Design-Builder shall conduct, document in the QC documentation file, and submit to the LA DOTD's designated representative, all environmental resource studies and cultural resource studies. If the Design-Builder purchases Material, the requirements for environmental acceptability will not apply. However, if the Design-Builder negotiates with an owner of a commercial source to establish a Material source within the boundaries of an existing commercial source, and if the Design-Builder obtains the Material from the source with the Design-Builder's employees, then the environmental acceptability requirements identified for a noncommercial source apply. In addition, the LA DOTD may determine that certain commercial sources or specific areas within commercial sources known to have sensitive environmental, social, or cultural concerns may not, as a matter of public interest, be approved for use.
- If the Design-Builder purchases Material from a Material source established for another project by another contractor working under contract to the LA DOTD, and if the Material source must be expanded beyond the area where environmental and cultural resource approvals have previously been obtained, then the requirements for environmental acceptability apply to the additional area.
- The Design-Builder shall document in the QC documentation file that all sources meet Contract requirements regarding the following: C) Environmental acceptability. Environmental acceptability includes completing the environmental and cultural resource requirements of DB Section 107-12 and 107-26.
- Environmental liability insurance during the period starting on the date of issuance of the NTP to design the improvements and ending on the date of Final Acceptance, with a five year extended reporting period with respect to events which occurred but were not reported during the term of the policy. The policy must cover professional errors and omissions related to environmental remediation Work performed by, and environmental losses resulting from, the Design-Builder or its Subcontractors and any Persons for whom the Design-Builder is legally or contractually responsible. The required combined single environmental liability limit amount must be \$2 million.
- DB 107-12 ENVIRONMENTAL PROTECTION The Design-Builder shall comply with federal, state, and local laws and regulations controlling pollution of the environment, including, air, water, and noise. The Design-Builder shall

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| | <p>take precautions to prevent pollution of waters and wetlands with fuels, oils, asphalts, chemicals, or other harmful materials and to prevent pollution of the atmosphere from particulate and gaseous matter.</p> <ul style="list-style-type: none">• The Design-Builder shall be responsible for reporting and cleaning up spills associated with construction of the Project, and shall report and respond to spills of Hazardous Materials such as gasoline, diesel fuel, motor oils, solvents, chemicals, toxic and corrosive substances, and other Material that are a threat to public health or the environment.• President of the US relating to prosecution of war or national defense, national emergency which creates a serious shortage of Materials, orders from duly constituted authorities relating to energy conservation, and restraining orders or injunctions obtained by third party citizen action resulting from national or local environmental protection laws or where the issuance of such order or injunction is primarily caused by acts or omissions of persons or agencies other than the Design-Builder.• Price Center 4 for Project-wide environmental compliance and mitigation activities shown on Form PC4; and• For PC 4, environmental compliance and mitigation, the submittal of specified plans must be PCPs• Progress Check Points will not be considered met until applicable environmental requirements have been met.• The LA DOTD may suspend payment for PC 1, 3, and/or 4 Work for any period if the Design-Builder's performance of PC 1, 3, and/or 4 continuing activities during the period resulted in any of the following: 4) Non-compliance with environmental requirements that leads to citations, fines, and/or other penalties by environmental authorities;• The Design-Builder has verified the following: 2) The design and drawings for Maintenance of Traffic (MOT) and temporary erosion control and environmental measures applicable to the Work are complete;• The LA DOTD will provide Consultation and Written Comment regarding the design and applicable MOT, temporary erosion control measures, and environmental requirements.• As per Design-Build (DB) Section 113, and prior to the commencement of any design or construction activities, the Design-Builder shall develop and implement a quality program for all phases of the Project, including design, construction, maintenance, and environmental compliance.• DB 113-1.3 Environmental Mitigation In developing its Quality Plan, the Design-Builder shall establish appropriate controls in its management, design, construction/installation, and documentation procedures to ensure that environmental mitigation requirements are met and documented.• In reviews it is prudent to address environmental impacts, community impacts, and similar concerns.• Ensure that the environmental conditions are suitable for the calibrations, inspections, measurements, and tests being carried out;• Materials shall be segregated to prevent cross contamination or environmental contamination. |
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| | <ul style="list-style-type: none"> • The procedures shall also identify the disposal of Materials that may be toxic or hazardous or might otherwise have an adverse effect on the environment or on unsuspecting humans. • All quality records shall be legible and shall be stored and retained in such a way that they are readily retrievable in facilities that provide a suitable environment to prevent damage or deterioration and to prevent loss. |
| Cultural (resource) | <ul style="list-style-type: none"> • Cultural Resource - Any prehistoric or historic period artifact, site, building, structure, material remain, or traditional use area resulting from, or associated with, human cultural activity. Historically important cultural resources are those eligible for inclusion on the National Register of Historic Places. • When the Design-Builder elects to develop new, noncommercial Material sources, the requirements for environmental acceptability apply, and the Design-Builder shall conduct, document in the QC documentation file, and submit to the LA DOTD’s designated representative, all environmental resource studies and cultural resource studies. • In addition, the LA DOTD may determine that certain commercial sources or specific areas within commercial sources known to have sensitive environmental, social, or cultural concerns may not, as a matter of public interest, be approved for use. • If the Design-Builder purchases Material from a Material source established for another project by another contractor working under contract to the LA DOTD, and if the Material source must be expanded beyond the area where environmental and cultural resource approvals have previously been obtained, then the requirements for environmental acceptability apply to the additional area. • Environmental acceptability includes completing the environmental and cultural resource requirements of DB Section 107-12 and 107-26. • If the Design-Builder encounters cultural artifacts or archaeological or historical sites, operations must be discontinued. |
| Historic | <ul style="list-style-type: none"> • Cultural Resource - Any prehistoric or historic period artifact, site, building, structure, material remain, or traditional use area resulting from, or associated with, human cultural activity. Historically important cultural resources are those eligible for inclusion on the National Register of Historic Places. • DB 107-26 ARCHEOLOGICAL AND HISTORICAL FINDINGS If the Design-Builder encounters cultural artifacts or archaeological or historical sites, operations must be discontinued. |
| Archaeological | <p>DB 107-26 ARCHEOLOGICAL AND HISTORICAL FINDINGS</p> <p>If the Design-Builder encounters cultural artifacts or archaeological or historical sites, operations must be discontinued. The Department’s Project Manager will contact the proper authorities in order that an appropriate assessment may be made to determine the disposition thereof and necessary actions relative to the site. When directed, the Design-Builder shall excavate the site to preserve the artifacts encountered. Such excavation will be paid for as Extra Work, including an</p> |

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| | appropriate adjustment in Contract Time. Borrow and muck disposal areas furnished by the Design-Builder will be subject to such assessment prior to use. |
| Paleontological | No |
| Noise | <ul style="list-style-type: none"> • The Safety Plan must be comprehensive and include all required actions, activities, rules, and mitigation relative to the safety of the Work. It must include the following items: F) Industrial hygiene, including respiratory protection, noise, Hazardous Materials, and lists of hazardous chemicals present; • The Design-Builder shall comply with federal, state, and local laws and regulations controlling pollution of the environment, including, air, water, and noise. • The Design-Builder shall maintain and operate Equipment to minimize noise and vibration. Engines must be equipped with properly functioning mufflers. The Design-Builder shall assure the activities near noise and vibration sensitive areas, such as, churches, hospitals, and schools, are not unduly disruptive. |
| Species | No |
| Stormwater | No |
| Erosion | <ul style="list-style-type: none"> • The successful Design-Builder shall be responsible for furnishing all labor, material, plant, equipment, services, and support facilities for the following (this list is not intended to be all-inclusive): M) Drainage and erosion control; • The Design-Builder shall, in association with the design and construction of the physical components of the Project, perform the following elements of Work: M) Drainage and erosion control; • Roadside Development – Those items necessary to the complete Highway which provide for preservation of landscape materials and features; rehabilitation and protection against erosion of areas disturbed by construction through seeding, sodding, mulching, and placing of other ground covers; and suitable planting or other improvements to increase the effectiveness and enhance the appearance of the Highway. • The Baseline Progress Schedule must show the order in which the Design-Builder proposes to carry on the Work, the date on which it will start the major items of Work (including, but not limited to, excavation, drainage, paving, structures, mobilization, soil erosion, and sediment control) and the critical features (including, procurement of Materials, plant, and Equipment) and the contemplated dates for completing the same. • The Progress Check Point will not be considered met until temporary erosion control measures are in place. • The Design-Builder has verified the following: 2) The design and drawings for Maintenance of Traffic (MOT) and temporary erosion control and environmental measures applicable to the Work are complete; and • The LA DOTD will provide Consultation and Written Comment regarding the design and applicable MOT, temporary erosion control measures, and environmental requirements. • Temporary erosion control ~ Mulch ~ Seeding ~ Slope drains ~ Silt fencing ~ Hay bales |

- Permanent Erosion Control ☐ Final dressing of area ☐ Area determinations ☐ Spread rate for seed and fertilizer ☐ Watering 714-01 thru 720-01 Sample Forms

DB 107-13 SOIL EROSION

The Design-Builder shall schedule and conduct its Work to minimize soil erosion and to minimize silting and muddying of streams, rivers, irrigation systems, impoundments (lakes and reservoirs), and lands adjacent to or affected by the Work. Construction of drainage facilities and performance of other Work which will contribute to the control of erosion and sedimentation must be carried out in conjunction with earthwork operations or as soon thereafter as practicable. The area of bare soil exposed at any one time by construction operations must be kept to a minimum. Prior to the start of the applicable construction, the Design-Builder shall submit to the Department's Project Manager for acceptance schedules for accomplishment of temporary and permanent erosion control Work as are applicable for clearing and grubbing, grading, Bridges, and other Structures at watercourses, construction, and paving. In addition, the Design-Builder shall also submit for acceptance at the same time its proposed method of erosion control on haul roads and borrow pits and its plan for disposal of surplus excavated Material. No Work will be started until the erosion control schedules and methods of operation have been accepted by the Department's Project Manager. If conditions change during construction, the Design-Builder may be required to submit a revised schedule for acceptance as directed by the Department's Project Manager. Whenever the Design-Builder's operations, carried out in accordance with the accepted erosion control schedule, result in a situation where appropriate temporary erosion control measures are not shown on the Design Plans the Design-Builder shall conduct the Work in accordance with Section 204 of the LA DOTD Standard Specifications. In carrying out the control measures under this Section 107-13, the Design-Builder shall be guided by, but not limited to, the following controls:

A) When borrow Material is obtained from other than commercially operated sources, erosion of the borrow site must be so controlled both during and after completion of the Work that erosion will be minimized and minimal sediment will enter waterways, impoundments, or adjacent properties. Waste or spoil areas and construction roads must be located, constructed, and maintained in a manner that will minimize sediment entering waterways and impoundments. The Design-Builder shall submit grading plans for all borrow pits or areas or spoil or waste areas to the Department's Project Manager for acceptance prior to the start of Work on, or the use of, such areas. The grading plans must indicate the sequence of operations, temporary slopes, and other factors which may have an influence on erosion control;

B) When Work areas or gravel pits are located in or adjacent to live waterways and impoundments, such areas must be separated from the rest of the waterway or impoundment by a dike or other barrier to minimize sediment entering a flowing waterway or impoundment. Care must be taken during the construction and removal of such barriers to minimize the muddying of a waterway or impoundment; and

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| | <p>C) Water from aggregate washing or other operations containing sediment must be treated by filtration, settling basin, or other means sufficient to reduce the turbidity so as not to cause a substantial visible contrast to natural conditions. No payment will be made for any labor, Material, or Equipment needed for soil erosion abatement as described above. When it becomes necessary, the Department’s Project Manager will inform the Design-Builder of unsatisfactory construction procedures and operations insofar as erosion control is concerned. If the unsatisfactory construction procedures and operations are not corrected promptly, the Department’s Project Manager may suspend the performance of any or all of other construction until the unsatisfactory condition has been corrected, with all costs of such action(s) to be borne by the Design-Builder.</p> |
| <p>Permit</p> | <ul style="list-style-type: none"> • Also, where environmental documentation or permits must be obtained, the project planning process can be delayed. • This topic will be covered by the LA DOTD's Project Manager, and would generally cover the following items: B) Type and status of environmental documentation, permitting, and environmental mitigation, if necessary • For some projects, schedule permitting, it may be desirable to the LA DOTD to provide a draft RFP to the short-list for review and comment prior to the release of the final RFP. • This includes, but is not limited to, the LA DOTD, Federal Highway Administration (FHWA), local city and parish governments, permitting agencies, and utility companies and the associated staff members of these entities. • This RFQ is being issued concurrently with development of the environmental documentation and acquisition of all environmental permits that may determine particular items within the final scope of services as well as many Project requirements. Any Work described herein is subject to adjustment as a result of the environmental documentation/permits and by other decision of the Louisiana Department of Transportation and Development (LA DOTD). • In the context of the Project, the Louisiana Department of Transportation and Development is responsible for the following activities: A) The appropriate environmental clearances and permits except those specifically assigned to the Design-Builder • The successful Design-Builder shall be responsible for furnishing all labor, material, plant, equipment, services, and support facilities for the following (this list is not intended to be all-inclusive): G) Environmental permit compliance monitoring; H) Additional environmental investigations and permit modifications resulting from the Design-Builder’s design and/or construction activities; O) Required clearances, licenses, construction easements, and permits for the Design- Builder’s Work, Work sites, and storage areas on- or off-site; Q) Location, acquisition, permits, and transportation for material; • A preliminary analysis and quantitative discussion of potential impacts on vehicular traffic (both during and after construction), environmental permitting, community impact, safety, and life-cycle Project and |

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| | <p>infrastructure costs, including impacts on the cost of repair, maintenance, and operation</p> <ul style="list-style-type: none">• FORM PC1 PRICE CENTER 1 - PRELIMINARIES AND GENERAL REQUIREMENTS Permits and Regulatory Approvals (non-environmental); Environmental Compliance (plans, permits, approvals, reports, records, and monitoring)• The Design-Builder shall, in association with the design and construction of the physical components of the Project, perform the following elements of Work: Required clearances, licenses, construction easements, and permits for the Design-Builder's Work, Work sites, and storage areas on- or off-site; R) Location, acquisition, permits, and transportation for Material• Any change in Section 5.1(A) through (B) requiring a change in the permits secured from the United States (US) Army Corps of Engineers (COE) and the Louisiana Department of Natural Resources (DNR).• A special permit does not decrease the Design-Builder's liability for damage.• DB 107-4 RESTORATION OF SURFACES OPENED BY PERMIT The right to construct or reconstruct any utility services in the Highway or to grant permits for same, at any time, is reserved by the LA DOTD for proper authorities of the municipality in which the Work is done and the Design-Builder shall not be entitled to damages either for digging up of the Highway or delays occasioned thereby. When an individual, corporation, or any other legal entity is authorized through an executed permit from the LA DOTD, the Design-Builder shall allow parties bearing such permits to make openings in the Highway. The Design-Builder shall, when ordered, make all necessary repairs due to such openings. Payment for such work will be made as Extra Work or as provided in this Contract and will be subject to the same conditions as original Work performed.• Navigable clearances on waterways must not be infringed upon, and existing navigable depths must not be impaired except as allowed by permits issued by the responsible agency.• The LA DOTD will obtain a permit from the US Coast Guard and US Army Corps of Engineers relative to approval of construction plans for bridges, causeways, embankments, dredging, and spoil disposal for Work in navigable waters or wetlands. The Design-Builder will be furnished a copy of the permit and must comply with all provisions and conditions of the permit. When required by permit, upon completion and before Final Acceptance of the Project, the Design-Builder shall furnish the Department's Project Manager 8 by 10 inch color photographs of any Bridges from abutment to abutment, two photographs looking upstream and two looking downstream.• The Design-Builder shall not deposit excavated material into the water way or wetland without a permit from the appropriate agency.• All operations in connection with the Work must be in accordance with permits, rules, and regulations of the US Army Corps of Engineers and the US Coast Guard. Deviations therefrom will be only by special permission or special permit which will be the responsibility of the Design-Builder. |
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- All operations in connection with the Work must be in accordance with permits, rules, and regulations of the US Army Corps of Engineers and the US Coast Guard. Deviations therefrom will be only by special permission or special permit which will be the responsibility of the Design-Builder. Failure of the Design-Builder to become familiar with the terms, conditions, and provisions of the permits, rules, and regulations applicable to the Work will not relieve the Design-Builder of responsibility under this Contract.
- Copies of Louisiana Department of Transportation and Development-obtained permits are available from the Department's Project Manager.
- Copies of any special permits obtained by the Design-Builder must be submitted immediately to the Department's Project Manager.
- The Design-Builder shall obtain a permit (or a determination of no hazard to air navigation) from the Federal Aviation Administration (FAA) for all permanent Structures and temporary Structures (such as, equipment, falsework, or construction cranes).
- Construction and operations in connection with the Work for protection of aerial navigation must be in accordance with the approved permit or Notice of Proposed Construction or Alteration and applicable federal regulations.
- For each Calendar Day that the LA DOTD fails to deliver appropriate the United State (US) Army Corps
- of Engineers (COE) permit beyond 45 Calendar Days from NTP, the Design-Builder may make a claim for sum specified in this Section 108-8, which may be paid by the LA DOTD not as a penalty but as stipulated damages.
- Based on the amount of the original Contract, the charge of \$5000 will be made for each Calendar Day after the date identified by the LA DOTD, above, as the date by which the US Army COE permit will be obtained, as relevant. The amount of the stipulated damages for failure of the LA DOTD to obtain the US Army COE permit as specified in this DB Section 108-8 will serve as full satisfaction for any damages claimed by the Design-Builder for such failure on the part of the LA DOTD, and will not be subject to additional claims or damages by the Design-Builder for any delays related to such failure by the LA DOTD.
- Failure to follow federal, state or local laws, rules, and regulations concerning construction safety and health standards or permits or conditions upon the site of the Work which are unsanitary, hazardous, or dangerous to the health or safety of the Design-Builder's workmen or the public
- The Design-Builder will incorporate into this schedule all Project activities, activities for the placement of orders and anticipated delivery dates of Materials and Equipment, activities assigned to Subcontractors, activities assigned to the LA DOTD or the Department's Project Manager and other outside agencies (such as, Design Reviews and permit reviews), and all utility Work or work by other contractors within or near the Contract limits.

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| | <ul style="list-style-type: none"> • Within 60 Calendar Days of NTP, the Design-Builder shall provide a list of submittals required under the Contract (i.e., Design Plans, Project Specifications, shop drawings, required permits, and erection/demolition plans). • DB 109-5.6 Permits The amount payable to the Design-Builder for permits must be a dollar-for-dollar pass-through of the Design-Builder’s costs (not to exceed amount shown on Form PC1 for permits). The Design-Builder shall provide backup documentation supporting each cost in this category to the LA DOTD prior to any payment. |
| Commitment | <ul style="list-style-type: none"> • Once the NEPA process is completed, FHWA will review the preliminary design to ensure that any decision and commitment reached on the NEPA documents are implemented on the preliminary plans. • Any reduction in the time period necessary to design and construct the Project resulting from implementing the ATC, including, as appropriate, a description of method and commitments; • Furthermore, the Design-Builder shall be entitled to compensation only for the incremental costs associated with compliance with the new requirements and shall not be entitled to additional compensation for Work relating to such compliance that was included in its original scope, including any commitments made in Design-Builder’s Proposal |
| Compliance | <ul style="list-style-type: none"> • Any shift of ROW services to the Design-Builder must be in compliance with appropriate state and federal law and the LA DOTD's Acquisition of Right-of-Way and Relocation Assistance policy and procedures, and requires that the Design-Builder submit a written ROW acquisition and relocation plan to the LA DOTD for approval. • It should be noted that in compliance with 23 C.F.R. 635.112 and 636.109, there are certain requirements regarding the timing of release of the RFP and the National Environmental Policy Act (NEPA) process. • Actions include, but are not limited to: design audits, checks, and reviews; construction audits, including, specification compliance reviews, document control, and working plan review; review of material Sampling and Testing results at production sites and the Project site; Fabrication audit of manufacturing/processing facilities and equipment; calibration of test equipment, and independent verification of materials if determined to be necessary. • 7.0 COMPLIANCE WITH APPLICABLE LAWS • The successful Design-Builder shall be responsible for furnishing all labor, material, plant, equipment, services, and support facilities for the following (this list is not intended to be all-inclusive): G) Environmental permit compliance monitoring • The Proposer shall note that no correspondence or information from the LA DOTD or anyone representing the LA DOTD regarding the RFP or the Proposal process in general will have any effect unless it is in compliance with Section 2.2.2. • Form PC4, Project-Wide Environmental Mitigation and Compliance; |

- B2.2.4 Project-Wide Environmental Mitigation and Compliance (Form PC4) For Price Center 4, Project-Wide Environmental Mitigation and Compliance, the Proposer shall provide lump sum prices for the activities shown on Form PC4 (see Appendix C – Proposal Forms). The Proposer may add activities as appropriate to reflect its plan to carry out the Work. The sum of all prices of the activities will be the PCV for Price Center 4.
- Project (Project) that the Design-Builder shall design, construct, and/or install and the associated management, control, monitoring, compliance, and professional services and other elements of the Work.
- Environmental mitigation and compliance monitoring (see Contract Documents, Part 3 – Design Requirements and Performance Specifications, Appendix A – Performance Specifications, Environmental Performance Specification);
- Actions include, but are not limited to: design audits, checks, and reviews; construction audits, including, specification compliance reviews, document control, and working plan review; review of material Sampling and Testing results at production sites and the Project site; Fabrication audit of manufacturing/processing facilities and equipment; calibration of test equipment, and independent verification of materials if determined to be necessary.
- Furthermore, the Design-Builder shall be entitled to compensation only for the incremental costs associated with compliance with the new requirements and shall not be entitled to additional compensation for Work relating to such compliance that was included in its original scope, including any commitments made in Design-Builder’s Proposal (see Part 6 – Design- Builder's Proposal).
- The use of explosives must be in compliance with all laws and ordinances.
- Explosives must be securely stored, in compliance with all laws and ordinances.
- Price Center 4 for Project-wide environmental compliance and mitigation activities shown on Form PC4;
- For PC 4, environmental compliance and mitigation, the submittal of specified plans must be PCPs.
- A PCP certificate included on Form RPP indicating the PCPs the Design-Builder considers to have been achieved during the preceding month and certifying compliance with Contract requirements.
- Non-compliance with environmental requirements that leads to citations, fines, and/or other penalties by environmental authorities;
- The Design Manager and/or staff working under the direct supervision of the Design Manager must conduct an assessment and evaluation of design such that the Design Manager can certify to the Design- Builder and to the LA DOTD that the design satisfies the Contract requirements, including the following requirements: D) Compliance with codes, standards, and permits
- The Design-Builder’s Design Quality Control Manager must also perform the following activities: 1) Identify and report non-conformities/non-compliance

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| | <ul style="list-style-type: none"> • Design assessment must be the review of general compliance with the requirements of the Contract, taking into consideration the proposed method of construction, and must cover the following areas • The Design-Builder’s time and cost impacts of revisions arising from LA DOTD’s and Stakeholders’ participation in Design Reviews and/or caused by Design-Builder’s non-compliance with Contract requirements, including the LA DOTD’s and Stakeholders’ time for reviewing revisions, must be borne by the Design-Builder. • The Designer has conducted its design QC checks throughout the design process in compliance with the Quality Plan and certifies in writing that the design is complete to the appropriate level or stage of review, checked, and ready to be released for construction; • As per Design-Build (DB) Section 113, and prior to the commencement of any design or construction activities, the Design-Builder shall develop and implement a quality program for all phases of the Project, including design, construction, maintenance, and environmental compliance. • The laboratory must have written policies and procedures to assure portable and satellite laboratories performing testing activities on the Project are capable of providing testing services in compliance with applicable test methods. • Compliance with reference standards/codes, quality plans, and/or documented procedures. Referenced standards shall be available to the people at the location where the Work is to be performed to ensure compliance to the specified requirements |
| Monitor | <ul style="list-style-type: none"> • Monitoring for Full Oversight Projects • The successful Design-Builder shall be responsible for furnishing all labor, material, plant, equipment, services, and support facilities for the following (this list is not intended to be all-inclusive): G) Environmental permit compliance monitoring • Environmental Compliance (plans, permits, approvals, reports, records, and monitoring) • Environmental Design and Monitoring of Construction Zone • The Design-Builder shall, in association with the design and construction of the physical components of the Project, perform the following elements of Work: G) Environmental mitigation and compliance monitoring (see Contract Documents, Part 3 – Design Requirements and Performance Specifications, Appendix A – Performance Specifications, Environmental Performance Specification); H) Any additional environmental investigations and monitoring associated with or resulting from the Design-Builder’s actions • The Design-Builder’s Design Quality Control Manager must also perform the following activities: 2) Track, monitor, and report on status of outstanding design-related Non-Conformance Reports; • The Design-Builder’s Design QC Manager must prepare and submit monitoring reports to the LA DOTD of all design issues and review comments resulting from the scheduled and additional checks and reviews, including “over-the-shoulder” reviews. |

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| | <ul style="list-style-type: none"> • Upon completion of the final design for each Design Unit, including all its components and elements, the Design-Builder’s Design QC Manager must notify the Design-Builder, with a copy to the LA DOTD, of any outstanding monitoring report issues or unresolved review comments. • Establishment and documentation of the method(s) for scheduling, monitoring, and reporting on the status of each significant aspect of the design or other Project tasks. • Corrective actions shall be monitored through review of documents, surveillance, or follow-up audits. |
| Mitigation | <ul style="list-style-type: none"> • However, the LA DOTD should not limit what it considers a "complex" project – a complex project may include a project that is a technically complex bridge structure or a project that has a particularly complex environmental issue, whether related to site conditions/constraints or to NEPA mitigations. • Environmental Issues – Environmental mitigation measures and hazardous materials mitigation should be included in the DB contract. • Type and status of environmental documentation, permitting, and environmental mitigation, if necessary • Risks with risk ratings of moderate or high should be afforded particular attention as to allocation and mitigation. • Mitigation measures should also begin to be identified, such as specific contract provisions, additional PE, or third-party agreements. • Any special environmental or community mitigation requirements • 1.13 ENVIRONMENTAL STATUS AND MITIGATIONS [The status of any environmental documentation should be included here.] • Form PC4, Project-Wide Environmental Mitigation and Compliance • B2.2.4 Project-Wide Environmental Mitigation and Compliance (Form PC4) • For Price Center 4, Project-Wide Environmental Mitigation and Compliance, the Proposer shall provide lump sum prices for the activities shown on Form PC4 (see Appendix C – Proposal Forms). The Proposer may add activities as appropriate to reflect its plan to carry out the Work. The sum of all prices of the activities will be the PCV for Price Center 4. • Environmental mitigation and compliance monitoring (see Contract Documents, Part 3 – Design Requirements and Performance Specifications, Appendix A – Performance Specifications, Environmental Performance Specification) • DB 104-8 CHANGES IN BASIC PROJECT CONFIGURATION; UTILITY RELOCATIONS; ENVIRONMENTAL MITIGATION • For PC 4, environmental compliance and mitigation, the submittal of specified plans must be PCPs. <p>DB 104-8.4 Changes in Environmental Mitigation Requirements Changes in environmental mitigation requirements may occur as the result of changes in governmental rules, as the result of changes in the Work directed by the LA DOTD, or as the result of design decisions made by the Design-Builder or its construction methodologies. The LA DOTD will issue a Change Order for changes in the scope of environmental mitigation requirements to be performed by the</p> |

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| | <p>Design-Builder to the extent that they are directly attributable to changes in governmental rules or changes in the Work directed by the LA DOTD (including any assignment of mitigation requirements to the Design-Builder that were originally contemplated to be performed by the LA DOTD or others). The Design-Builder shall bear full responsibility for performance of any mitigation measures required as the result of its design decisions or construction methodologies. Furthermore, the Design-Builder shall be entitled to compensation only for the incremental costs associated with compliance with the new requirements and shall not be entitled to additional compensation for Work relating to such compliance that was included in its original scope, including any commitments made in Design-Builder's Proposal (see Part 6 – Design-Builder's Proposal).</p> <p>DB 113-1.3 Environmental Mitigation In developing its Quality Plan, the Design-Builder shall establish appropriate controls in its management, design, construction/installation, and documentation procedures to ensure that environmental mitigation requirements are met and documented.</p> |
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| Keyword | Presence In Construction QA Program for LA DOTD D-B Program |
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| NEPA | No |
| Environment | <ul style="list-style-type: none"> • Law or Laws means (a) any statute, law, code, regulation, ordinance, rule, or common law; (b) any binding judgment (other than regarding a Claim or Dispute); (c) any binding judicial or administrative order or decree (other than regarding a Claim or Dispute); (d) any written directive, guideline, policy requirement, or other governmental restriction (including those resulting from the initiative or referendum process, but excluding those by LA DOTD within the scope of its administration of the Contract Documents); or (e) any similar form of decision of or determination by, or any written interpretation or administration of any of the foregoing by, any Governmental Entity, in each case which is applicable to or has an impact on the Project or the Work, whether taking effect before or after the Effective Date, including Environmental Laws. • USTs Environmentally Regulated Material |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | <ul style="list-style-type: none"> • The Design-Builders' CQAF must develop a document control system for construction inspections, NCRs, erosion control reports, etc. which is acceptable to LA DOTD. |

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| | <ul style="list-style-type: none"> • A copy of all remaining inspection, sampling and testing data identified by the CQMP, Specification, or special provision shall be transmitted to LA DOTD/OVF for review and acceptance (such as boring logs, stressing reports, erosion control, traffic control, etc.). • Temporary Erosion Control – Mulch – Seeding - Slope Drains - Silt Fencing - Hay Bales • Permanent Erosion Control: Final dressing of area, Area determinations, Spread rate for seed and fertilizer, Watering Soil tested grass • SECTION 204 TEMPORARY EROSION CONTROL • SECTION 720 EROSION CONTROL SYSTEMS |
| Permit | <ul style="list-style-type: none"> • Provide procedures, including coordinating with LA DOTD Districts, to ensure all operational permits are identified for coordination of all QC inspections and testing with Governmental Entities and Utility Owners. • Provide procedures to ensure that the Design-Builder identifies all operational permits for coordination of all QC inspection and testing with Governmental Entities and Utility Owners. • Governmental Approval shall mean any permit, license, consent, concession, grant, franchise, authorization, waiver, variance or other approval, guidance, protocol, mitigation agreement, or memoranda of agreement/understanding, and any amendment or modification of any of them provided by Governmental Entities, including State, local, or federal regulatory agencies, agents, or employees, which authorize or pertain to the Work or the Project, but excluding any such approvals given by or required from any Governmental Entity in its capacity as a Utility Owner. |
| Commitment | LA DOTD’s Owner Verification Testing and Inspection Plan (OVTIP) shall describe LA DOTD’s commitments to perform owner verification (OV) of the Design-Builder’s QA testing and inspection. |
| Compliance | <ul style="list-style-type: none"> • Describe methods of verifying compliance of Monthly Certification (see Appendix E) with the specifications. • Describe the methods established for materials to be in compliance with the specifications at the point of use. • Design-Builder’s Quality Acceptance (QA) portion of the Construction Quality Management Plan (CQMP) shall include the internal procedures used by the Design-Builder’s CQAF to ensure that the Work is inspected and tested to verify compliance with the released for construction plans, accepted shop drawings, working drawings, specifications and accepted Change Orders. |
| Monitor | No |
| Mitigation | Governmental Approval shall mean any permit, license, consent, concession, grant, franchise, authorization, waiver, variance or other approval, guidance, protocol, mitigation agreement, or memoranda of agreement/understanding, and any amendment or modification of any of them provided by Governmental Entities, including State, local, or federal regulatory agencies, agents, or employees, which authorize or pertain to the Work or the Project, but excluding any such approvals |

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| | given by or required from any Governmental Entity in its capacity as a Utility Owner. |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The Design-Build manual has a detailed process to communicate permitting commitments to the Contractor.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The Construction Quality Assurance Program (CQAP) for Design-Build has a checklist for items to monitor.

Maine

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. The Maine Department of Transportation is authorized to use design-build, but no specific process/procedure is outlined.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No, although the state defines design build contracts. The definition states that under such contracts, the vendor is procured through a “Best-Value Procurement process” using a Request for Proposals and evaluation of submitted Proposals using price as one of several evaluation factors as outlined in 23 MRSA 753A.

http://www.maine.gov/mdot/contractors/publications/standardspec/docs/ss_division_100.pdf

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Maryland

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. While the Maryland DOT (MDOT) does apparently regularly issue design-build contracts, there is no dedicated website describing the procurement process.

It should be noted that MDOT tracks the use of innovative contracting methods (such as design-build contracts, construction manager at risk, P3 contracts, and general engineering consultant contracts) through its Excellerator Performance Management System, which is comprised of ten Tangible Results (TR) which drive daily business decisions. TR4 contains Performance Measure 4.3B "Project Value by Contracting Method" which tracks the use of innovative contracting methods. The process acknowledges that such innovative contracts can promote accelerated project completion or facilitate achievement of other project performance objectives. When selecting a project delivery method and identifying innovative contracting options, MDOT takes into account project characteristics such as project size and cost, type (preservation, rehabilitation or reconstruction) and complexity (urban or rural, traffic impact and number of project elements).

http://www.mdot.maryland.gov/newMDOT/Planning/Excellerator/Documents/April_2016/TR_4.pdf

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Massachusetts

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. The Massachusetts DOT does not have a dedicated webpage for Design-Build, but they do have a construction services page where they Design-Build is mentioned. In addition the Massachusetts DOT has a resourceful environmental services page.

<http://www.massdot.state.ma.us/highway/Departments/Construction.aspx>

<http://www.massdot.state.ma.us/highway/Departments/EnvironmentalServices/EMSSustainabilityUnit/EnvironmentalManagementSystem.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. The Massachusetts DOT had a Design Build Guidelines document.

<https://www.massdot.state.ma.us/Portals/8/docs/construction/DesignBuildGuidelines.pdf>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|---|
| NEPA | No |
| Environment | <ul style="list-style-type: none"> • The Department will also identify project development staffing needs and determine who (in-house or consultant) will perform services such as preliminary mapping and baseline survey, hydraulic analysis, geotechnical investigation, traffic management, right of way, environmental studies and permitting. • The project development team will identify the project goals, develop the preliminary design and construction scope of work, develop a detailed description of the project, collect the base data, identify the required design elements, identify environmental permitting requirements, identify ROW needs, etc. FHWA approval of the RFP is required prior to project advertisement on FHWA oversight projects. • Criteria may include geo-technical analysis, surveying, environmental permitting, right of way, utility coordination, etc. • They may also include requirements of the Department directly or through a third party, e.g., site availability, completion of an environmental report/permits or the delivery of Department-furnished equipment or materials. • Preliminary environmental studies and permitting requirements need to be assessed. • 10) Environmental record: The performance of the DB Entities can be evaluated by reviewing citations from DEP, EPA, etc. This information will most generally be published in the daily clips or newspaper articles. District Construction personnel’s experience with the DB Entities with NPDES requirements can also be used. • Method 1 Each Selection Committee member is responsible for scoring the DB Entity’s proposal in the areas of their expertise only. In other |

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| | <p>words, a roadway design engineer would not develop scores for evaluation criteria related to bridge design, but rather only score items, such as approach roadways, MOT, and environmental impacts appropriate to their level of expertise.</p> <ul style="list-style-type: none"> • Method 2 Each Committee member is responsible for obtaining a score for each evaluation criteria by selecting other persons to assist them in those areas where they do not possess an appropriate level of expertise. As an example, a bridge designer may call upon a roadway designer for assistance in scoring each DB Entity’s roadway approach details and MOT, and a permitting or environmental person for input on environmental mitigation details. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> • The Department will also identify project development staffing needs and determine who (in-house or consultant) will perform services such as preliminary mapping and baseline survey, hydraulic analysis, geotechnical investigation, traffic management, right of way, environmental studies and permitting. • The project development team will identify the project goals, develop the preliminary design and construction scope of work, develop a detailed description of the project, collect the base data, identify the required design elements, identify environmental permitting requirements, identify ROW needs, etc. FHWA approval of the RFP is required prior to project advertisement on FHWA oversight projects. • Criteria may include geo-technical analysis, surveying, environmental permitting, right of way, utility coordination, etc. • They may also include requirements of the Department directly or through a third party, e.g., site availability, completion of an environmental report/permits or the delivery of Department-furnished equipment or materials. • Once a project has been identified for Design Build procurement: 1) Preliminary design work may be required prior to advertisement. Such work may include survey, geotechnical data, right of way, permitting and/or other items of work. The more information available, the more detailed the scope of work will be to the prospective DB Entities. A decision needs to be made as to how much preliminary design work will be done. A reasonable target would be a 25% design effort with any specific complex issues being identified in the scope of work prior to advertisement. Preliminary environmental studies and permitting requirements need to be assessed. |

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| | <ul style="list-style-type: none"> • The DB Entity’s members experience with local and state government, permit and regulatory agencies, and community groups can also be evaluated. • Technical proposals should include a detailed project schedule using CPM (or other techniques as appropriate), preliminary design plans, preliminary specifications, technical reports, calculations, permit requirements, total contract time and other data requested in response to the RFP. • As an example, a bridge designer may call upon a roadway designer for assistance in scoring each DB Entity’s roadway approach details and MOT, and a permitting or environmental person for input on environmental mitigation details. |
| Commitment | No |
| Compliance | <ul style="list-style-type: none"> • The Department will provide the quality assurance and independent testing, but the established QC/QA Program is the backbone for which the Department will gauge compliance. |
| Monitor | No |
| Mitigation | <ul style="list-style-type: none"> • As an example, a bridge designer may call upon a roadway designer for assistance in scoring each DB Entity’s roadway approach details and MOT, and a permitting or environmental person for input on environmental mitigation details. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information as found related to monitoring the contractor.

Michigan

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. Michigan DOT does not have a dedicated Design-Build website but they do have an Innovative Contracting website as well as a D-B definition/explanation page.

https://www.michigan.gov/mdot/0,4616,7-151-9625_21539_53226---,00.html

https://www.michigan.gov/mdot/0,4616,7-151-9621_11008_54685-225625--,00.html

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. Michigan DOT has an Innovative Construction Contracting Guide that discusses D-B.

https://www.michigan.gov/documents/mdot/Innovative_Construction_Contracting_340000_7.pdf

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
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| NEPA | <ul style="list-style-type: none"> • Preferred Candidates: Projects with a complete National Environmental Policy Act (NEPA) process • Undesirable Candidates: Projects with uncompleted NEPA process or significant undefinable mitigation requirements from the NEPA process <p>Chapter 8: General Environmental/ NEPA and ROW Process National Environmental Policy Act</p> <p>DB projects, like all other Department projects, require environmental analysis and preparation of environmental documents to comply with the National Environmental Policy Act (NEPA). It is important to remember to limit the amount of design work performed to coincide with the level of design required to support the environmental documentation.</p> <p>At the beginning of a project’s development, the PM should discuss the project’s needs and associated timelines with MDOT’s Environmental staff to ensure they have adequate information to clear the project within the desired time frames. Environmental staff may have additional needs to clear a project based on the project’s scope of work.</p> <p>Environmental clearance should be obtained prior to requesting obligation for the construction phase (A Phase). If environmental clearance is not expected to be obtained before obligation, the FHWA must be contacted and to request an exception. MDOT’s procedures are established based on completing the NEPA process prior to obligation. If it is not expected to have NEPA work completed, the DB template documents must be revised in order to develop contract language and requirements acceptable to MDOT and the FHWA.</p> <p>Commitments and mitigations made in the environmental process need to be completed as part of the DB projects, and must be included in the applicable sections of the RFP.</p> <ul style="list-style-type: none"> • This section includes requirements for floodplains, contaminated properties, regulated materials, groundwater, noise, air quality, water |

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| | <p>quality and quantity, water bodies, wetlands, and compliance to NEPA commitments.</p> <ul style="list-style-type: none"> • Hold Scope Verification Meeting with selected CMGC: d. Discuss available information and restrictions based on items such as NEPA, MDOT needs and stakeholder involvement • The RFQ should accurately describe where the project is in the NEPA process, and how the CMGC's work may be phased based on the NEPA Process (IE, Phase 1: Preconstruction phase with Early Preliminary Engineering work needed to complete NEPA process, Phase 2: Preconstruction phase with Preliminary Engineering work, Phase 3: Construction), and that each phase would be authorized separately and cannot overlap. • 4. Can I advertise for a CMGC before there is NEPA clearance a. Yes, but the RFQ should accurately describe where the NEPA process is, and how the CMGC's work may be phased based on the NEPA Process (IE, phase 1: NEPA, Phase 2: Pre-construction phase, Phase 3: Construction), and that each phase would be authorized separately and cannot overlap. • 11. Are there any special NEPA considerations? |
| <p>Environment</p> | <ul style="list-style-type: none"> • A project chosen to go through this selection would be unique; therefore, the elements used in selection and negotiations would be established just for that contract. It may include items such as coordinating with the public, minimizing impact to road users, environmental issues, aesthetics, and more. • Typically Design-Build contracts are awarded after MDOT has completed some preliminary design, the environmental process is complete (or nearly complete), and right-of-way is secured • Undesirable Candidates: Projects with complicating issues, such as utility conflicts, right-of-way acquisition, hazardous materials, wetland and environmental concerns, or other unresolved issues • In MDOT's standard approach, The RFQ and RFP are developed concurrently with planning and environmental activities necessary to mitigate project specific risk. If the project is designated for DB delivery prior to environmental documentation and preliminary design, these DB planning activities should take place in conjunction with the environmental documentation and preliminary design. • The exact makeup of the team will vary, but at a minimum should include staff from the development and delivery areas and technical staff with expertise in certain areas, such as structures, roadways, hydraulics, environmental and geotechnical work. • Items that provide minimal benefit, such as line weight on plans, should not be a requirement a Design-Builder needs to fulfill in order to start construction. The review of RFC's must be focused on significant items such as geometrics, environmental, mobility, public safety, right-of-way, and drainage during the acceptance process. |

- NOTE: FHWA coordination for other processes (design exceptions, environmental reviews and approvals, financing, etc.) typically follow the same guidance as with regular federal aid contracts.
- In addition to project specific risks, common risks on most projects include right of way (ROW) concerns, environmental items, geotechnical items, utility conflicts, third party items, and railroads.
- Risks might include technical issues such as soils or structures, environmental issues such as permitting, or political issues such as public impacts, municipal consent, or interagency government approvals.
- 5. Determine Environmental Needs: _____
- 6. Est. Date to Clear Environmental: _____
- Chapter 8: General Environmental/ NEPA and ROW Process
- National Environmental Policy Act
- DB projects, like all other Department projects, require environmental analysis and preparation of environmental documents to comply with the National Environmental Policy Act (NEPA). It is important to remember to limit the amount of design work performed to coincide with the level of design required to support the environmental documentation.
- At the beginning of a project's development, the PM should discuss the project's needs and associated timelines with MDOT's Environmental staff to ensure they have adequate information to clear the project within the desired time frames. Environmental staff may have additional needs to clear a project based on the project's scope of work.
- Environmental clearance should be obtained prior to requesting obligation for the construction phase (A Phase). If environmental clearance is not expected to be obtained before obligation, the FHWA must be contacted and to request an exception. MDOT's procedures are established based on completing the NEPA process prior to obligation. If it is not expected to have NEPA work completed, the DB template documents must be revised in order to develop contract language and requirements acceptable to MDOT and the FHWA.
- Commitments and mitigations made in the environmental process need to be completed as part of the DB projects, and must be included in the applicable sections of the RFP.

Section 6—Access to Site;
Utility Relocations;
Environmental Mitigation

Review

Risk allocation changes for right-of-way, utilities, and environmental compliance may affect this chapter. Typically no changes to this section.

Section 4 (Environmental Compliance)

This section includes requirements for floodplains, contaminated properties, regulated materials, groundwater, noise, air quality, water quality and quantity, water bodies, wetlands, and compliance to NEPA commitments. It should identify any known contaminated properties and/or hazardous material sites, such as properties with contaminated soil or groundwater, buildings with hazardous

materials, bridges with lead-based paint and asbestos, and other project-specific requirements.

Book 2, Section 4 should also identify the status of any permits and who is responsible for obtaining each permit. MDOT's approach for DB projects is to obtain as many required permits as possible for a project prior to release of the RFP, and include copies of those permits in the RFP. This includes the Environmental Study for Project Classification, MDOT form 1775. Permits that MDOT did not obtain are typically the responsibility of the Design-Builder. These permits should be identified in Book 2 with information such as the time typically needed to obtain the permit, the associated permit costs, and the coordination between MDOT and the Design-Builder on each permit. Book 2, Section 4 also requires the Design-Builder to submit the soil erosion and sedimentation control information to MDOT in order for MDOT to obtain the Notice of Coverage for the National Pollution Discharge Elimination System (NPDES) for storm water discharges from construction activity permits prior to each phase of construction. Book 2, Section 4 should include project-specific wetland mitigation requirements related to environmental permitting requirements. Book 2, Section 4 may also include additional project-specific standards that the Design-Builder must follow. Examples of this may include local design requirements, watershed management plans, and other environmental documents. The Environmental Compliance section may require close coordination with Book 2, Section 12 (Drainage).

1. PPMS Task 2810 (Project Area Contamination Survey (PACS) should be requested and completed and if depending on the PACS; PPMS Task 2820 (Conduct Preliminary Site Investigation (PSI) for Contamination should be performed as well.

2. Set up a meeting with the Region Environmental Specialist, Lansing Environmental and Hydraulics to review wetland locations and types in order to determine wetland impacts, culvert replacements and extensions, and the project's needs at stream crossings based on drainage areas.

3. Based on Section 11 (Roadway and Grading) and 12 (Drainage) requirements; proceed to develop the necessary Environmental Permit Application per PPMS Task 3720 and 3730. Place a copy of the Environmental Permit Application into the RID and a copy of the Issued Environmental Permit into an Exhibit in Book 2, Section 4.

4. Initiate and Coordinate environmental clearance with the Environmental Project Coordination Section. Categorical Exclusion Environmental Clearance will be developed into an Exhibit and placed in Book 2, Section 4.

5. Coordinate requirements and constraints for environmental compliance with other sections. For example:

Book 1, Section 12 (Shared Risk Item Work and Price Adjustments) – contaminated materials that will be shared risk

Book 1, Section 13 (Changes in the Work) - associated with any contaminated properties and materials

Book 2, Section 11 (Roadway and Grading) – review grading limits within wetland areas

Book 2, Section 12 (Drainage) – culvert and storm sewer replacement within wetlands and regulated streams

Book 2, Section 18 (MOT) – any detours will need MDOT environmental approval

- By completing these agreements, MDOT can avoid issues such as changes in local government requirements, application of conflicting environmental standards, and changes to the local government's permitting and approval processes.
- 6. Coordinate requirements and constraints for environmental compliance with other sections.
- Coordinate requirements and constraints for right-of-way with other sections. For example: Book 1, Section 6 (Access to Site; Utility Relocations; Environmental Mitigation) – Design-Builder access to site.
- The level of mapping should be adequate to support completion of the environmental document (if required), support preliminary engineering activities necessary to mitigation risk, and define the scope of the project.
- Coordinate requirements and constraints for land surveying with other sections. For example: Book 2, Section 4 (Environmental Compliance) – environmental features (i.e. wetlands, county drains, etc.).
- Where the elimination of design exceptions is cost prohibitive, substantially changes the scope of the project, or adversely impacts the project schedule due to environmental or right-of-way impacts these specific design exception should be clearly identified in the assessment report as project elements where design exception requests will be made.
- The drainage section identifies general requirements as well as project-specific requirements, such as computer software to be used for drainage design, additional design criteria from environmental documents or local requirements that are not otherwise addressed in standards.
- Set up separate drainage/environmental coordination meeting with MDOT personnel to further discuss scope of work.
- Coordinate requirements and constraints for drainage with other sections. For example: Book 2, Section 4 (Environmental Compliance) – environmental/drainage permits.
- Coordinate requirements and constraints for landscaping with other sections. For example: Book 2, Section 4 (Environmental Compliance) – soil erosion measures.
- Reference Information Documents: Environmental Documentation
- Check MFOS to ensure that the JN is initiated and that Environmental Clearance, STIP, TIP information is up to date.
- In addition to project specific risks, common risks on most projects include right of way concerns, environmental items, geotechnical items, utility conflicts, third party items, and railroads. Other project risks will be present on each project.
- 4. Determine Environmental Needs: _____
- 5. Est. Date to Clear Environmental: _____

Chapter 8: Environmental Process

The process for receiving environmental clearance on CMGC projects follows a process similar to the traditional methods. The PM should discuss the project's needs and associated timelines with Environmental staff to ensure they have adequate information to clear the project. They may have additional needs to clear

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| | <p>a project based on plans that are not 100% completed. Environmental clearance must be obtained prior to requesting obligation for the construction phase (A Phase).</p> <p>If a project is not expected to be a categorical exclusion the PM should contact MDOT's Environmental staff to discuss the project and develop a timeline for the work. The RFQ must indicate if the CMGC will have tasks in Early Preliminary Engineering or Preliminary Engineering phases. The RFQ should accurately describe where the project is in the NEPA process, and how the CMGC's work may be phased based on the NEPA Process (IE, Phase 1: Preconstruction phase with Early Preliminary Engineering work needed to complete NEPA process, Phase 2: Preconstruction phase with Preliminary Engineering work, Phase 3: Construction), and that each phase would be authorized separately and cannot overlap. Commitments and mitigations made in the environmental process need to be completed on CMGC projects. Changes in the project during the development phase that contradict the final environmental document may require the document to be amended before construction can be authorized.</p> <ul style="list-style-type: none"> • Other items needed prior to requesting obligation include: 4. Environmental Clearance • How are different categories (Categorical Exclusion, Environmental Assessment, and Environmental Impact Statement) of Environmental Classification affected by the CMGC process? a. If a project is not expected to be a categorical exclusion the PM should contact MDOT's Environmental staff to discuss the project and develop a timeline for the work. The RFQ must indicate if the CMGC will have tasks in EPE or PE phases. • Is it realistic to always have the project environmentally classified by 30% plan completion? a. No. <p>Chapter 3: Permits & Environmental Process Environmental Classification</p> <p>The entire project limits and all priorities must be environmentally classified and certified before turning in the project for advertising. Permits required for the entire project limits must be obtained prior to obligating funds.</p> <p>If portions of the project are not able to be completed with the original project, the remaining non-constructed portion of the project will need to be completed within 3 years of the original construction. If all of the work is not completed in the original project a new project will need to be programmed to complete the work. Since the entire project limits were already environmentally cleared, an environmental restudy will be needed and the original certification will be updated and linked to the new project.</p> |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <ul style="list-style-type: none"> • This section includes requirements for floodplains, contaminated properties, regulated materials, groundwater, noise, air quality, water |

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| | <p>quality and quantity, water bodies, wetlands, and compliance to NEPA commitments.</p> <ul style="list-style-type: none"> • Book 2, Section 13 provides requirements for the Design-Builder to design and construct temporary and permanent components for the rehabilitation, replacement, and/or new construction of bridges, retaining walls, noise walls (sound walls), bridge barriers/railings, box culverts, , and precast concrete arches. • Book 2, Section 15 provides requirements to Design-Builder to include the type of aesthetic treatment and architectural details, context-sensitive design, and other visual-related areas for bridges, retaining walls, noise barriers, MSE walls and other structures. • This section includes requirements for floodplains, contaminated properties, regulated materials, groundwater, noise, air quality, water quality and quantity, water bodies, wetlands, and compliance to NEPA commitments. • Book 2, Section 13 provides requirements for the Design-Builder to design and construct temporary and permanent components for the rehabilitation, replacement, and/or new construction of bridges, retaining walls, noise walls (sound walls), bridge barriers/railings, box culverts, , and precast concrete arches. |
| Species | No |
| Stormwater | No |
| Erosion | <ul style="list-style-type: none"> • Book 2, Section 4 also requires the Design-Builder to submit the soil erosion and sedimentation control information to MDOT in order for MDOT to obtain the Notice of Coverage for the National Pollution Discharge Elimination System (NPDES) for storm water discharges from construction activity permits prior to each phase of construction. • If the Design-Builder is responsible for all vegetation, the requirements typically include tree inventory (replacement and establishment), preservation and protection of existing vegetation, noxious weed control, timber utilization, erosion control, soils management, turf establishment, and plant establishment. • Book 2, Section 4 (Environmental Compliance) – soil erosion measures • Based on suggestions and experience from past CMGC projects, adjustable items can include: Soil Erosion and Sedimentation Control Items |
| Permit | <ul style="list-style-type: none"> • Risks might include technical issues such as soils or structures, environmental issues such as permitting, or political issues such as public impacts, municipal consent, or interagency government approvals. • Book 2, Section 4 should also identify the status of any permits and who is responsible for obtaining each permit. MDOT’s approach for DB projects is to obtain as many required permits as possible for a project prior to release of the RFP, and include copies of those permits in the RFP. This includes the Environmental Study for Project Classification, MDOT form 1775. Permits that MDOT did not obtain are typically the responsibility of the Design-Builder. These permits should be identified in Book 2 with information such as the time typically needed to obtain the permit, the |

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| | <p>associated permit costs, and the coordination between MDOT and the Design-Builder on each permit. Book 2, Section 4 also requires the Design-Builder to submit the soil erosion and sedimentation control information to MDOT in order for MDOT to obtain the Notice of Coverage for the National Pollution Discharge Elimination System (NPDES) for storm water discharges from construction activity permits prior to each phase of construction.</p> <ul style="list-style-type: none">• Book 2, Section 4 should include project-specific wetland mitigation requirements related to environmental permitting requirements. Book 2, Section 4 may also include additional project-specific standards that the Design-Builder must follow.• Based on Section 11 (Roadway and Grading) and 12 (Drainage) requirements; proceed to develop the necessary Environmental Permit Application per PPMS Task 3720 and 3730. Place a copy of the Environmental Permit Application into the RID and a copy of the Issued Environmental Permit into an Exhibit in Book 2, Section 4.• The contract documents typically require the Design-Builder to obtain all remaining applicable permits and approvals. By completing these agreements, MDOT can avoid issues such as changes in local government requirements, application of conflicting environmental standards, and changes to the local government’s permitting and approval processes.• Section 5: Contract Document Development Work Steps 1. Review project and determine the affected local agencies, permitting agencies, adjacent construction projects and other parties that would be considered Third Parties.• It also includes reports that the Design-Builder must complete and submit to MDOT for utility tracking, permit applications, and other items.• This section sets forth the optional approaches for obtaining right-of-way, including permanent right-of-way, temporary right-of-way, and/or construction permits. It may also include exhibits/files to be used by the Design-Builder.• Perform preliminary engineering for the project to determine what right-of-way may be required. Identify construction permits, as needed.• Coordinate requirements and constraints for drainage with other sections. For example: Book 2, Section 4 (Environmental Compliance) – environmental/drainage permits.• RID Contract Document Development Work Steps 1. As project information such as scoping documents, as-built plans, and permits are collected and preliminary design is completed, the RID Index can be developed.• They can also assist in utility relocation planning, development of permit applications, public outreach, procuring long lead time items, engage subcontractors to review the specialty and/or unique work on the project, and other services agreed to in the preconstruction contract.• Permits Any required permits should be identified and obtained during the preconstruction phase. If Permits cannot be obtained they must be |
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| | <p>identified in the C.A. Form and a plan must be in place to obtain the permits without affecting the construction schedule.</p> <p>Chapter 3: Permits & Environmental Process Environmental Classification The entire project limits and all priorities must be environmentally classified and certified before turning in the project for advertising. Permits required for the entire project limits must be obtained prior to obligating funds. If portions of the project are not able to be completed with the original project, the remaining non-constructed portion of the project will need to be completed within 3 years of the original construction. If all of the work is not completed in the original project a new project will need to be programmed to complete the work. Since the entire project limits were already environmentally cleared, an environmental restudy will be needed and the original certification will be updated and linked to the new project.</p> |
| Commitment | <ul style="list-style-type: none"> • Commitments and mitigations made in the environmental process need to be completed as part of the DB projects, and must be included in the applicable sections of the RFP. • This section includes requirements for floodplains, contaminated properties, regulated materials, groundwater, noise, air quality, water quality and quantity, water bodies, wetlands, and compliance to NEPA commitments. • Commitments and mitigations made in the environmental process need to be completed on CMGC projects. |
| Compliance | No |
| Monitor | <ul style="list-style-type: none"> • The Bureau of Highways Instructional Memorandum 2002-14 Final Project Reviews, Monitoring Construction Engineering and Incentive/Disincentive Projects, addresses revision to projects with incentives. • Also included in this section is standard language for items such as vibration monitoring or underdrain. |
| Mitigation | <ul style="list-style-type: none"> • Projects with uncompleted NEPA process or significant undefinable mitigation requirements from the NEPA process • Initial mitigation plans are identified for further action based on the outcome of the risk assessment. • Commitments and mitigations made in the environmental process need to be completed as part of the DB projects, and must be included in the applicable sections of the RFP. <p>Section 6—Access to Site; Review Risk allocation changes for right-of-way, Utility Relocations; Environmental Mitigation utilities, and environmental compliance may affect this chapter. Typically no changes to this section.</p> <ul style="list-style-type: none"> • Book 2, Section 4 should include project-specific wetland mitigation requirements related to environmental permitting requirements. • Book 1, Section 6 (Access to Site; Utility Relocations; Environmental Mitigation) – Design-Builder access to site. |

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| | <ul style="list-style-type: none">• The level of mapping should be adequate to support completion of the environmental document (if required), support preliminary engineering activities necessary to mitigation risk, and define the scope of the project.• Meet with affected parties to discuss mitigation measures.• Initial mitigation plans are identified for further action based on the outcome of the risk assessment.• Commitments and mitigations made in the environmental process need to be completed on CMGC projects. |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Minnesota

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes.

<http://www.dot.state.mn.us/designbuild/index.html>

<http://www.dot.state.mn.us/const/tools/innovativecontract.html>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes.

Design-Build Manual:

http://www.dot.state.mn.us/designbuild/documents/online/DB_Manual.pdf

Innovative Contracting Guidelines:

<http://www.dot.state.mn.us/const/tools/docs/Guidelines%20Dec%202008.pdf>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

Design-Build Manual:

| Keyword | Presence |
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| NEPA | <p><u>Definitions</u> National Environmental Policy Act (NEPA) - The United States environmental law that established a U.S. national policy promoting the enhancement of the environment and also established the President's Council on Environmental Quality (CEQ). NEPA sets up procedural requirements for all federal government agencies in preparing Environmental Assessments (EA) and Environmental Impact Statements (EIS). EAs and EISs contain statements of the environmental effects of proposed federal agency actions.</p> <p><u>What is Design-Build Contracting?</u> MnDOT standard practice is to require the completion of the environmental processes such as NEPA prior to moving into the RFP stage of procurement.</p> <p><u>Federal Authorization</u> Unless otherwise authorized by the FHWA, the following items must be completed prior to requesting federal authorization: a. Completion and approval of the NEPA process</p> |
| Environment | <p><u>Manual Purpose</u> This manual does not include all of the processes necessary to deliver the project, such as environmental, right-of-way acquisition, and municipal consent. Except as noted within this manual, all other MnDOT project development guidelines and procedures follow standard processes.</p> <p><u>Design-Build Project Managers</u> The duties of the Design-Build Project Managers include: Managing preliminary design and environmental approvals</p> |

| Keyword | Presence |
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| | <p data-bbox="488 268 792 298"><u>Timesheet Activity Codes</u></p> <p data-bbox="488 306 1471 478">All activities that are related to the development of the project, whether it is design-build or design-bid-build, should be charged to the normal project development charge ID (e.g. if working on the environmental document, charge to the appropriate environmental document activities) except development of contract documents (see below).</p> <p data-bbox="488 520 867 550"><u>General Engineering Consultant</u></p> <p data-bbox="488 558 1419 655">Work orders may include: Tasks for pre-award project development of design-build projects (preparation of environmental documents, geometric layout preparation, preliminary bridge design, etc.)</p> <p data-bbox="488 697 743 726"><u>Project Development</u></p> <ul data-bbox="537 735 1471 1873" style="list-style-type: none"> <li data-bbox="537 735 1448 869">• The development of design-build projects is similar to traditional design-bid-build projects in many aspects. Planning, geometric layout, environmental approvals, and right-of-way generally follow traditional practices. <li data-bbox="537 877 1463 1012">• Sufficient preliminary engineering should be done to determine right-of-way limits, obtain municipal consent, meet environmental and permitting requirements, and determine the project scope to define the project’s requirements in the RFP. <li data-bbox="537 1020 1471 1407">• Environmental Document: <ul style="list-style-type: none"> <li data-bbox="634 1058 1471 1192">○ The process followed to identify, complete, and obtain approvals for the appropriate environmental document (e.g., EA, EIS, etc.) for a design-build project is generally unchanged from the process for a traditional project. This process is discussed in the HPDP. <li data-bbox="634 1201 1471 1297">○ Federal regulation (23 CFR 636.109) permits agencies to proceed with pre-qualifications, industry review, and a short listing process before the environmental study is complete. <li data-bbox="634 1306 1419 1407">○ MnDOT standard practice is to release the RFP after the environmental process has concluded. All deviations from this practice require special FHWA approval. <li data-bbox="537 1415 1471 1835">• Permits: <ul style="list-style-type: none"> <li data-bbox="634 1453 1471 1835">○ To reduce contractor risk, MnDOT should obtain as many permits as possible before accepting proposals. However, the design-build team will often need to obtain permits based upon their operations or design. In these cases, MnDOT should coordinate early with the regulator agency to outline the project’s risks and anticipated environmental impacts. If necessary, it may be appropriate during procurement to obtain conditional permits outlining the anticipated impacts. In these cases, the design-builder would obtain the final permit based upon the final design. Exhibit 3.1-1 for information on the MOU for preliminary approval under the NPDES permit requirements. <li data-bbox="537 1843 675 1873">• Survey: |

| Keyword | Presence |
|---------------------|---|
| | <ul style="list-style-type: none"> ○ MnDOT will provide survey control and preliminary base mapping for the project. The level of mapping should be adequate to support completion of the environmental document and to support preliminary engineering. The mapping will ultimately be provided in the RID. The designbuild team is responsible for all final design surveying and construction staking surveying. ○ Although 23 CFR 636.208 allows the use of existing prequalification lists, the lists should only be used on highly specialized areas of design (e.g. complex roundabouts), technical assistance (e.g. environmental monitoring), and to improve the quality of designers on low-bid projects. <p><u>Standard RFP Format:</u></p> <ul style="list-style-type: none"> ● Book 2 outlines the project specific requirements and is tailored to each project. Book 2 is typically divided into the following subsections: 4. Environmental Compliance |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p><u>Project Development</u></p> <ul style="list-style-type: none"> ● Noise - On projects requiring noise walls, preliminary noise analysis is required prior to releasing the RFP. If necessary, the RFP should include requirements that the design-build team update the noise analysis if the final design varies from the inputs used within the preliminary noise analysis. |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | <p><u>PPMS Activities (PPMS is undefined)</u> This activity assembles the Design-Build team, sets Design-build goals, performs risk allocation, and identifies permit, r/w, and agreement needs.</p> <p><u>Project Development</u></p> <ul style="list-style-type: none"> ● Sufficient preliminary engineering should be done to determine right-of-way limits, obtain municipal consent, meet environmental and permitting requirements, and determine the project scope to define the project’s requirements in the RFP. ● Permits - To reduce contractor risk, MnDOT should obtain as many permits as possible before accepting proposals. However, the design-build team will often need to obtain permits based upon their operations or design. In these cases, MnDOT should coordinate early with the regulator agency to outline the project’s risks and anticipated environmental impacts. If necessary, it may be appropriate during procurement to obtain conditional permits outlining the anticipated impacts. In these cases, the design-builder would obtain the final permit based upon the final design. Exhibit |

| Keyword | Presence |
|------------|--|
| | <p>3.1-1 for information on the MOU for preliminary approval under the NPDES permit requirements.</p> <ul style="list-style-type: none"> • Wetlands - MnDOT should identify all wetlands within the project area. Often, a preliminary permit will be obtained outlining the anticipated (often worst case) impact to the wetlands. The design-build team often is responsible for obtaining the final permit, based upon their design. If the design-build team impacts more wetlands than anticipated, the design-build team should assume the risk of obtaining the permit and mitigating the additional impacts. • Drainage - Preliminary drainage should be conducted to determine right-of-way, cost estimate, and permit requirements. <p><u>Request for Proposal (RFP) Development</u> The PM may request that the RFP be issued prior to obtaining all permits, but the PM will need to provide a schedule to the DBPM and FHWA showing the permits will likely be obtained prior to letting.</p> <p><u>Contract Award and Contract Execution</u> The CLS or DBPM will obtain clearances regarding right-of-way, permits, utility agreements, and municipal agreements.</p> |
| Commitment | 2 times – neither related to environmental compliance |
| Compliance | <p>3 times – 1 related to environment</p> <p><u>Standard RFP Template:</u> Book 2 outlines the project specific requirements and is tailored to each project. Book 2 is typically divided into the following subsections: 4. Environmental Compliance</p> |
| Monitor | <p>1 time</p> <p><u>Project Development – Pre-Qualification Lists</u> Although 23 CFR 636.208 allows the use of existing prequalification lists, the lists should only be used on highly specialized areas of design (e.g. complex roundabouts), technical assistance (e.g. environmental monitoring), and to improve the quality of designers on low-bid projects. The use of pre-qualification lists should not be used to unnecessarily limit competition or provide preferential treatment to local firms on federally funded projects.</p> |
| Mitigation | 2 times – both related to conflicts of interest and not environment |

Innovative Contracting Guidelines:

| Keyword | Presence |
|-------------|---|
| NEPA | No |
| Environment | <p><u>Design-build: description</u> Typically, design-build contracts are awarded after Mn/DOT has completed the layout (30% design), the environmental process is complete (or nearly complete) and right-of-way is in the process of being secured.</p> |

| Keyword | Presence |
|---------------------|---|
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | Is my project a good candidate for A +B (cost-plus-time bidding)? Third-party agreements: Will all permits be secured by the letting date? |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

MnDOT has an RFP template for Design Build: <https://www.dot.state.mn.us/designbuild/rfp.html>

The template includes many of the details included in the manual plus several others, including:

- Designate an environmental team led by the Contract Environmental Compliance Officer (CECO) to communicate directly with the MnDOT Environmental Compliance Manager.
- Design and implement an environmental protection training program
- Environmental and water resource regulatory obligations
- Specific thresholds regarding noise
- Specific cases where failure to submit mitigation plan may result in delays in other steps of the process (e.g., Released for Construction Documents)
- Requirement to clearly communicate all environmental commitments, how they were met by the Project, and what final documentation was prepared for each commitment, as part of a deliverable

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Mississippi

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. However, they have a website for Design Build & Special Project RFPs.

<http://sp.mdot.ms.gov/Contract%20Administration/DesignBuild/Pages/projects.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No. The only manual they have is the 2001 Roadway Design Manual.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Missouri

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes. The D-B information page is housed under Consultant Resources. This page contains a D-B flyer and brief summaries of potential D-B projects (identified in the STIP), D-B projects that are currently underway, and completed D-B projects. MoDOT’s Engineering Policy Guide contains a section on D-B. This page includes links to forms, example documents, including Requests for Qualifications, Requests for Proposals, Instructions to Proposers, and sample project goals.

http://modot.mo.gov/business/consultant_resources/DesignBuildInformation.htm

http://epg.modot.mo.gov/index.php?title=Category:139_Design_-_Build

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? MoDOT’s D-B section of its Engineering Policy Guide appears to serve as a manual.

http://epg.modot.mo.gov/index.php?title=Category:139_Design_-_Build

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|---|
| NEPA | <ul style="list-style-type: none"> • The purpose of the Design-Build Program Agreement is to ensure that MoDOT and FHWA have an understanding of the level of involvement, approval actions, roles, responsibilities and processes that FHWA will provide on Design-Build projects. The agreement addresses the design-build procurement process, the NEPA process as it relates to design-build, the Access Justification Report (AJR) process and other approval requirements during contract execution • In accordance with the RFP, a NEPA re-evaluation or revision may be required, depending on the content of each Proposal. As described in the FHWA Design-Build Program Agreement, to prepare for any potential revision, each proposer may be asked to use the Environmental Commitments Form (Form 139.8.2.2(e)) to request any commitment revisions. • Some examples of Book 4 documents include third party agreements (those between MoDOT and an entity other than the design-build contractor) that the design-build contractor will be required to comply with, permits obtained for the project, and applicable NEPA environmental documents |
| Environment | <ul style="list-style-type: none"> • For some projects environmental commitments have been made prior to the RFP. In these instances it is important to document environmental commitments, and evaluate any proposed changes to the commitments. In these cases, the project team will provide a list of environmental commitments in a spreadsheet. In accordance with the RFP, a NEPA re-evaluation or revision may be required, depending on the content of each Proposal. As described in the FHWA Design-Build Program Agreement, to prepare for any potential revision, each |

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| | <p>proposer may be asked to use the Environmental Commitments Form (Form 139.8.2.2(e)) to request any commitment revisions. This form may not be necessary for all projects.</p> <ul style="list-style-type: none">• In this situation, the Project Director has the responsibility of conferring with subject matter experts, such as design, bridge, environmental, financial, maintenance, traffic, construction or Right of Way staff, to assist in the decision making process, as appropriate.• Under Examples of areas of risks that should be evaluated during a risk allocation include –<ul style="list-style-type: none">○ Environmental – MoDOT may be in the best position to obtain a Section 404 permit from the Army Corps of Engineers, however, the design-build contractor is the best party to obtain new permits or variances to existing environmental permits based upon its design.○ Noise Walls – While MoDOT is probably the best party to assume the risk of dealing with the public regarding many noise wall issues during the environmental process, the Design-Build contractor is the best party to determine where the noise walls are required based upon its final design.• Book 2 can also include items not typically found in any state specifications but could be considered special provisions to a particular project, such as environmental requirements, third party agreement requirements or public information requirements.• Under Book 2, The general technical areas that are addressed in Book 2 include:<ul style="list-style-type: none">○ Basic Configuration. The basic configuration provides the overview of the final product, or what the project will achieve when it is completed. It is a concept of the “envelope” of right of way and physical requirements that the design-build contractor will have to design and construct the project. The basic configuration is usually based upon the design in the environmental documents prepared for FHWA approval of the project. However, if no design of this nature exists or if the environmental document design does not adequately define the “envelope”, the basic configuration may be based upon design work performed specifically for this purpose.○ Environmental Requirements. This section defines the minimum environmental performance requirements for the project, typically outlined from the approved project environmental documents.• Under Book 4 – Some examples of Book 4 documents include third party agreements (those between MoDOT and an entity other than the design-build contractor) that the design-build contractor will be required to comply with, permits obtained for the project, and applicable NEPA environmental documents.• Under Selection Criteria Process Method Selection – Are there environmental compliance needs? |
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| | <ul style="list-style-type: none"> • Under Program Budget and Project Coding – Environmental Mitigation • Under Procurement Schedule – A best practice is to talk with FHWA and Design's Environmental Studies section when developing the project schedule, so they can anticipate required resources. See the FHWA/MoDOT Design-Build Program Agreement for topic specific review times. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>Yes. Three mentions</p> <ul style="list-style-type: none"> • Under Examples of areas of risks that should be evaluated during a risk allocation include – Noise Walls – While MoDOT is probably the best party to assume the risk of dealing with the public regarding many noise wall issues during the environmental process, the Design-Build contractor is the best party to determine where the noise walls are required based upon its final design. |
| Species | No |
| Stormwater | Spell out as one word. |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> • Under Examples of areas of risks that should be evaluated during a risk allocation include – <ul style="list-style-type: none"> ○ Environmental – MoDOT may be in the best position to obtain a Section 404 permit from the Army Corps of Engineers, however, the design-build contractor is the best party to obtain new permits or variances to existing environmental permits based upon its design. • Some examples of Book 4 documents include third party agreements (those between MoDOT and an entity other than the design-build contractor) that the design-build contractor will be required to comply with, permits obtained for the project, and applicable NEPA environmental documents |
| Commitment | <ul style="list-style-type: none"> • 139.8.2.2.5 Environmental Commitments and Access Justification Reports – For some projects environmental commitments have been made prior to the RFP. In these instances it is important to document environmental commitments, and evaluate any proposed changes to the commitments. In these cases, the project team will provide a list of environmental commitments in a spreadsheet. In accordance with the RFP, a NEPA re-evaluation or revision may be required, depending on the content of each Proposal. As described in the FHWA Design-Build Program Agreement, to prepare for any potential revision, each proposer may be asked to use the Environmental Commitments Form (Form 139.8.2.2(e)) to request any commitment revisions. This form may not be necessary for all projects. |
| Compliance | Under Selection Criteria Process Method Selection – Are there environmental compliance needs? |
| Monitor | No |

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| Mitigation | Under Program Budget and Project Coding – Environmental Mitigation |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

MoDOT's Engineering Policy Guide provides detailed information as to what should be included in the D-B proposals and includes an environmental commitments form. The form lists all of the EIS commitments and tracks whether the proposal would require a change to those commitments. The guidelines do not provide a process for ensuring environmental compliance with said commitments.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Montana

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? While MDT does not have a dedicated webpage, they have an “Alternative Contracting” section on their Doing Business page.

<http://www.mdt.mt.gov/business/>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes.

<http://www.mdt.mt.gov/other/webdata/external/const/design-build/DB-GUIDELINES.PDF>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|---|
| NEPA | <ul style="list-style-type: none"> • Firms responding to the RFP may propose changes to the project scope that could invoke an amendment to the planning process and/or NEPA reevaluation. • The Federal Aid program authorization previously established will need to be modified after the contract is awarded. Generally, these contract price modifications should occur following Contract award. Proposals that differ significantly from what was anticipated in the NEPA document may cause a reevaluation and/or an amendment to the STIP. • The RFP documentation should affirm if other checklist items, such as utilities, permits and NEPA status are complete or when they will be completed. • All MDT projects are required to be in compliance with the National Environmental Policy Act (NEPA), Montana Environmental Policy Act (MEPA) and other applicable environmental laws and regulations. This compliance extends from the design phase through the construction phase and into maintenance of a project after construction is completed. NEPA/MEPA regulations are the basis for protection of the environment. • On Federal Aid projects, FHWA usually serves as the lead federal agency for compliance with NEPA and MDT serves as the lead state agency. • The Firm will be responsible to comply with commitments set forth in the NEPA/MEPA documents for the duration of design and construction of the project. • For Federal Aid projects, MDT will obtain FHWA approval of the form of the NEPA reevaluation and the reevaluation before the Firm can proceed with the proposed design change. |
| Environment | <ul style="list-style-type: none"> • When it has been determined that a proposed design-build project will be funded and proceed, MDT’s Fiscal Programming Bureau will obtain three separate programming obligations for design-build projects. First will be an obligation for the estimated cost of preliminary engineering and environmental work required to develop the RFQ, RFP and DCCP. |

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| | <ul style="list-style-type: none"> • Under Project Time/Schedule, MDT or third party dates or time regarding site availability, completion of environmental report/permits, or delivery of MDT equipment or materials (elapsed days). • Items To Be Furnished by MDT – Scope will include sections detailing items and services to be furnished by MDT such as data reports, computer services, materials, equipment, testing devices or other items that may affect Bid Price Proposals, technical approach or environmental permits. • The CPM schedule should also include activities for requirements of MDT directly or through a third party, such as site availability, completion of an environmental report, permits or the delivery of MDT furnished equipment or materials. The RFP should list any non-working days required by MDT. • Under Short List Evaluation Guidelines – The criteria are: <ol style="list-style-type: none"> 1. Past Performance Grades: Contractor, Designer, and CEI Consultant (if CEI is included in Contract). 2. Experience of the businesses working together. 3. Design-Build experience of the Firms. 4. Similar type work experience. 5. The current workload of the Firms. 6. Time delays on past projects. 7. Experience of key personnel. 8. Safety record. 9. Firm organization and regional experience. 10. Environmental record. 11. Incidents of litigation/dispute history. 12. R/W and Utilities 13. Quality Management Plan 14. Other categories the TRC determines. • Section 3.10.10 Environmental Record – Performance of the Firm and its members can be evaluated by reviewing citations issued by Department of Environmental Quality (DEQ), the Army Corps of Engineers and Environmental Protection Agency (EPA). This information will generally be published in newspaper articles. MDT's experience with the Firm related to National Pollutant Discharge Elimination System (NPDES) permit requirements can also be used. • Under Selection Process by Selection Committee – 1. Environmental Protection/Commitments (____ points) Credit will be given for minimizing impacts to the environment during all phases of design/construction and ensuring that all environmental permits and commitments are honored. The amount of credit should be proportional to the amount of reduction in wetlands or other types of mitigation quantities. • Under Selection Process by Selection Committee – 5. Coordination (____ points) Credit will be given for a coordination plan and effort that includes, as a minimum, coordination with the following groups: |
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| | <ul style="list-style-type: none">○ MDT Management Team○ Community and Businesses○ Adjacent Property Owners○ Permitting/Environmental Agencies○ Utility Owners○ Local Governments● Under Selection Process by Selection Committee – 11. Construction Methods (_____ points) Credit will be given for construction methods that minimize impact to the traveling public and the environment, reduce costs, improve worker safety and minimize contract duration. Credit will be given for exceeding minimum material requirements to enhance durability of project components.● Under DEVELOPMENT OF THE DESIGN AND CONSTRUCTION● CRITERIA PACKAGE FOR THE RFP – Bridge project requirements may include but are not limited to alignment, prescribed typical section elements, design criteria, design guidelines, desired aesthetics, project schedule, standard detail drawings, subsurface soil data, minimum vertical and horizontal clearance requirements, load rating, hydraulics, scour requirements, roadway approach needs, environmental commitments and ADA requirements.● Under DEVELOPMENT OF THE DESIGN AND CONSTRUCTION● CRITERIA PACKAGE FOR THE RFP – Building project requirements may include but are not limited to building size, net and gross interior space provisions, building systems, material quality standards, allowed budget amount, project schedule, site development requirements, aesthetic requirements, landscaping, electrical service, telephone service, domestic water requirements, sanitary sewage requirements, storm water disposal, parking provisions, ADA requirements, regulatory, environmental and permitting requirements● As a general rule, it is better to describe unique social, environmental and community values desired and let the Firm select the best construction method and technique.● A detailed list and explanation of potential environmental related permits is included in Chapter 9, Project Development and Environmental Process, of these Guidelines.● Under Site specific permit surveys potentially affecting or restricting the Firm's allowable construction methods, schedule and cost – Other environmental related commitments and surveys.● First will be an obligation for the estimated cost of preliminary engineering and environmental work required to develop the RFQ, RFP and DCCP.● Since the need for additional R/W must be determined and the environmental documentation may be necessary before the RFP is approved, these activities normally will be authorized with Federal funds in advance of the Contract authorization.● 8.4.1 Funding Issues. Since the need for additional R/W must be determined and the environmental documentation may be necessary |
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| | <p>before the RFP is approved, these activities normally will be authorized with Federal funds in advance of the Contract authorization.</p> <ul style="list-style-type: none"> • Environmental approval and completion of R/W plans, title commitments and legal descriptions are required before the notice to commence may be issued. • Chapter 9 - PROJECT DEVELOPMENT AND ENVIRONMENT PROCESS has been attached to this assessment. • As a minimum, the cross-sectional requirements, operational importance of the bridge, environmental classifications and limits of hazardous materials must be stated in the RFP. • The costs of Permits may also be included as a separate item in the Preliminary Cost Estimate. (Check with Environmental Services Bureau for additional cost information) • Since the environmental permit agencies may not allow Firms to perform permit testing such as turbidity, the CEI Consultant could be expected to perform these tests, if required, and any anticipated testing should be covered by the scope of services. • Under Role of MDT Engineering Project Manager (EPM) – Ensuring that all environmental commitments/requirements are honored. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | Under Permits – Local ordinances, including noise and hours of operation |
| Species | Under Site specific permit surveys potentially affecting or restricting the Firm's allowable construction methods, schedule and cost – Endangered species survey. |
| Stormwater | No |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> • MDT will typically provide R/W services and obtain any required R/W, including Construction Permits, for Design-Build Projects. • Under Project Time/Schedule, MDT or third party dates or time regarding site availability, completion of environmental report/permits, or delivery of MDT equipment or materials (elapsed days). • Permits • MDT will state what Permits are anticipated and required, who will be responsible for obtaining, and how coordination will occur. • MDT needs to contact resource agencies up-front and determine what will NOT be permitted for the project. • Utilities - The Firm will provide MDT with utility relocation plans and other information required to obtain Utility Permits. Utility Permits will be processed and issued by MDT. • Items To Be Furnished by MDT – Scope will include sections detailing items and services to be furnished by MDT such as data reports, computer services, materials, equipment, testing devices or other |

items that may affect Bid Price Proposals, technical approach or environmental permits.

- The CPM schedule should also include activities for requirements of MDT directly or through a third party, such as site availability, completion of an environmental report, permits or the delivery of MDT furnished equipment or materials. The RFP should list any non-working days required by MDT.
- Under Selection Process by Selection Committee – 1. Environmental Protection/Commitments (_____ points) Credit will be given for minimizing impacts to the environment during all phases of design/construction and ensuring that all environmental permits and commitments are honored. The amount of credit should be proportional to the amount of reduction in wetlands or other types of mitigation quantities.
- Section 5.4 Permits. MDT must determine who will be responsible for permits and how the coordination process will be handled. FHWA holds MDT responsible for all permits on Federal Aid Projects. The RFP will clearly state when the Firm is to be responsible for identifying and obtaining all required permits. A detailed list and explanation of potential environmental related permits is included in Chapter 9, Project Development and Environmental Process, of these Guidelines. Any permit requiring additional permanent R/W or easements must comply with the MDT Right of Way Operations Manual.

The RFP will identify the required permits and easements and the MDT contact that must approve commitments made by the Firm on behalf of MDT as a result of obtaining permits.

Known commitments and/or permit requirements, especially those affecting the Firm's construction options and costs, should be clearly defined and supplied to the Firms prior to preparing technical proposals. Initial resource agency coordination meetings should begin as the RFP and DCCP are being developed. This does not reduce the Firm's responsibility to acquire all necessary permits or to modify project permits as necessary when the Firm's design alters conditions under which the original permit was obtained. The following are examples of some, but not all, permitting issues/concerns:

- Restrictions for construction access
- Horizontal and vertical requirements for bridge span
- Blasting restrictions or requirements for existing bridge removal
- Special turbidity control requirements
- Mitigation ratios and special mitigation requirements
- Other site-specific permitting restrictions that may include time restrictions affecting construction activities
- Local ordinances, including noise and hours of operation
- Subdivision permits
- Building permits

| | |
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| | <ul style="list-style-type: none"> • MDT will make available to the Firm for inspection, all available existing utility permits, plans and utility relocation information, including 23 CFR, part 645, Subpart A and B, Administrative Rules of Montana and Volume III of the MDT Right of Way Manual. • After all utility relocation work is completed; the Firm will provide MDT copies of as-built utility relocation plans and permit applications for each utility. MDT will process and issue Utility Permits • If additional R/W and Construction Permits is required, in order to avoid potential schedule delays, MDT will typically provide all R/W services for Design-Build Projects instead of including R/W services in the Contract. • Under Items to be Furnished by MDT – Such information might also include survey data, geotechnical information, bridge hydraulic reports, existing plans, utility permits and R/W plans, if available. • These services include utilities/railroad, permits, geotechnical investigations, survey/mapping, R/W and CEI. Depending on the project, some or all of these services may be performed by MDT prior to issuing the RFP. • The RFP documentation should affirm if other checklist items, such as utilities, permits and NEPA status are complete or when they will be completed. • The final completion stage will be initiated by MDT based on an executed Certificate of Completion. The Firm will be responsible for compliance with all permits until the work covered by the permit is completed and the permit is closed. Since each project may require different types of permits, the RFP should specify by whom, how and when permits will be closed. In most cases, MDT’s preference is to have the Firm close all permits, but there may be some permits that extend a considerable time period beyond project completion and it may be beneficial for MDT to close these permits. • MDT will provide all R/W services and obtain any required R/W and Construction Permits for Design-Build Projects unless otherwise specified. • Chapter 9 - PROJECT DEVELOPMENT AND ENVIRONMENT PROCESS has been attached to this assessment. See Section 9.3, Permits. • The costs of Permits may also be included as a separate item in the Preliminary Cost Estimate. (Check with Environmental Services Bureau for additional cost information) |
| Commitment | <ul style="list-style-type: none"> • Under Selection Process by Selection Committee – 1. Environmental Protection/Commitments (____ points) Credit will be given for minimizing impacts to the environment during all phases of design/construction and ensuring that all environmental permits and commitments are honored. The amount of credit should be proportional to the amount of reduction in wetlands or other types of mitigation quantities. • CRITERIA PACKAGE FOR THE RFP – Bridge project requirements may include but are not limited to alignment, prescribed typical section |

| | |
|------------|--|
| | <p>elements, design criteria, design guidelines, desired aesthetics, project schedule, standard detail drawings, subsurface soil data, minimum vertical and horizontal clearance requirements, load rating, hydraulics, scour requirements, roadway approach needs, environmental commitments and ADA requirements.</p> <ul style="list-style-type: none"> • Under Permits – The RFP will identify the required permits and easements and the MDT contact that must approve commitments made by the Firm on behalf of MDT as a result of obtaining permits. • Under Permits – Known commitments and/or permit requirements, especially those affecting the Firm's construction options and costs, should be clearly defined and supplied to the Firms prior to preparing technical proposals. • Under Site specific permit surveys potentially affecting or restricting the Firm's allowable construction methods, schedule and cost – Other environmental related commitments and surveys. • Chapter 9 - PROJECT DEVELOPMENT AND ENVIRONMENT PROCESS has been attached to this assessment. See Section 9.2, Permits. • Under Role of MDT Engineering Project Manager (EPM) – Ensuring that all environmental commitments/requirements are honored. |
| Compliance | <ul style="list-style-type: none"> • The Firm will be responsible for compliance with all permits until the work covered by the permit is completed and the permit is closed. • Section 8.2 Compliance with Existing Requirements – All existing laws, rules, regulations and procedures detailed in the MDT Right of Way Operations Manual; the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended; 23 CFR Part 710; and 49 CFR Part 24; apply to the acquisition of R/W under the design-build process. • Chapter 9 - PROJECT DEVELOPMENT AND ENVIRONMENT PROCESS has been attached to this assessment |
| Monitor | No |
| Mitigation | <ul style="list-style-type: none"> • Under Selection Process by Selection Committee – 1. Environmental Protection/Commitments (____ points) Credit will be given for minimizing impacts to the environment during all phases of design/construction and ensuring that all environmental permits and commitments are honored. The amount of credit should be proportional to the amount of reduction in wetlands or other types of mitigation quantities. • Under Permits – Mitigation ratios and special mitigation requirements • Under Plan Content Requirements – Mitigation Plans • Under Bridge Plans – Mitigation Plans • Under Environmental Process – These documents outline commitments made, conceptual design, avoidance measures, mitigation measures, effects on ROW and resources and other items that may be of public interest. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

MDT guidelines are clear as to the process for communicating environmental permit commitments to the contractor and requires documentation that environmental commitments were met prior to project closeout. MDT guidelines state that the Department must approve any changes to or new environmental commitments made by the contractor on behalf of the Department. The process for specific permits and clearances is not clear (i.e., wetlands permitting, Section 106 process). It appears that MDT takes on and retains much of the responsibility for environmental clearance and permitting.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

Beyond stating that the contractor must comply and requiring the documentation that environmental commitments were met prior to project closeout, MDT's guidelines do not appear to outline a process for monitoring contractor follow-through related to environmental commitments.

activities and the scope must clearly define the activities in order to avoid potential contract disputes and delays in project schedules.

8.11 SCHEDULING

Due to the complexities involved in the R/W process and the necessity for MDT involvement at various stages in that process, scheduling is a very important issue and must be carefully addressed in the Contract (when R/W services are included) to ensure reasonable times are provided for both the Firm and MDT to fulfill their contract obligations. Since the acquisition of R/W may depend on court action and unforeseen circumstances that may arise, it is recommended that the Contract include a provision to assign the risk for project delays due to R/W issues. This section refers to provisions that should be incorporated into the Contract (when R/W services are included) and is not intended to include or provide the contractual language. MDT Legal Services should draft the proper contractual language at the time the Contract is prepared.

8.12 FIRM LEASES

On some construction projects, the Firm may determine it is in its best interest to obtain short-term leases (sometimes referred to as contractor easements) for the sole purpose of Firm use, such as areas for storage of equipment. Such leases may not be used for property incorporated into the construction of the project. These leases are negotiated directly between the Firm and the property owner and do not involve MDT. They may be acquired at any time.

CHAPTER NINE

PROJECT DEVELOPMENT AND ENVIRONMENTAL PROCESS

9.1 ENVIRONMENTAL PROCESS

All MDT projects are required to be in compliance with the National Environmental Policy Act (NEPA), Montana Environmental Policy Act (MEPA) and other applicable environmental laws and regulations. This compliance extends from the design phase through the construction phase and into maintenance of a project after construction is completed. NEPA/MEPA regulations are the basis for protection of the environment. They establish the policy and goals and provide means to carry out the policies. The regulations instruct MDT on methods to be used to comply with the procedures and achieve the goals. These procedures ensure that potential social, economic and environmental impact information is available to public officials and citizens before decisions are made and before action is taken related to projects (See 23 CFR Part 771). These documents outline commitments made, conceptual design, avoidance measures, mitigation measures, effects on ROW and resources and other items that may be of public interest. The project design, construction and maintenance must comply with information contained in the environmental documents.

On Federal Aid projects, FHWA usually serves as the lead federal agency for compliance with NEPA and MDT serves as the lead state agency.

9.2 COMMITMENTS

The Firm will be responsible to comply with commitments set forth in the NEPA/MEPA documents for the duration of design and construction of the project.

9.3 PERMITS

Construction activities are regulated by environmental rules and regulations that are administered by federal, state and local agencies. Environmental permits are required from one or more regulatory agencies for most land alterations such as addition of impervious surfaces, construction, alteration or abandonment of storm water management facilities and wetlands or surface water impacts. The time at which these permits can be obtained vary with the type of project, its impacts and the requirements of a specific resource agency. The acquisition of permits can result in having to re-address environmental issues during design, so it is very important to prepare a complete and thorough document during the PE phase and before preparation of the RFP. The Firm will be responsible to obtain permits required for permanent and temporary project facilities.

The following permits may be required, depending on the type of project and potential impacts to various resources:

a. Water Quality Permits

- Federal Clean Water Act (404 Permit) – There are two types of permits, Nationwide and Individual. Nationwide permits require at least 45 calendar days to obtain approval. Individual permits require at least 120 calendar days to obtain approval. This permit is required when placing fill material in waters of the United States. This includes placing fill material in beds or banks of drainage, below the ordinary high water elevation of a stream or river or within a designated wetland. This permit is obtained from the Army Corps of Engineers.
- Federal Rivers and Harbors Act (Section 10 Permit) – This permit is required when working on, over or under water classified as Section 10. In Montana, the Missouri River, Yellowstone River and the Kootenai River are classified as Section 10 waters. The Firm should coordinate with MDT Environmental Services to identify specific locations along these rivers. This permit is obtained from the U.S. Army Corps of Engineers.
- Stream Protection Act 124 – This permit is obtained from Montana Fish, Wildlife and Parks. It is required for work that may affect the natural existing shape and form of any stream or its banks or tributaries.
- Short-Term Water Quality Standard for Turbidity (DEQ 318) – This permit is obtained from the DEQ. It is required for any construction activity that will cause short-term or temporary violations of surface water quality standards for turbidity.

- Montana Pollutant Discharge Elimination System Permit (MPDES Permit) for Construction Dewatering – This permit is obtained from the DEQ. It is required when discharging construction water into surface waters.
 - Montana Pollutant Discharge Elimination System Permit (MPDES Permit) for Storm Water – This permit is obtained from the DEQ. It is required when there is more than one acre of disturbed ground that could result in storm water runoff discharging into surface waters.
- b. Floodplain Development Permit – This permit is obtained from the Local Floodplain Administrator. It is required if planning new construction within a designated 100-year floodplain.
- c. Montana Land-Use License or Easement on Navigable Waters – This license or easement is required when a project is on lands below the low water mark elevation of State navigable waters. The license or easement is obtained from the Montana Department of Natural Resources and Conservation.
- d. Other – Other permits or authorizations may be required, depending on the type of project or the construction work proposed by the Firm. For specific requirements or unusual conditions, the Firm should contact MDT Environmental Services. Other types of permits may include:
- UST Removal
 - Hazardous Waste Disposal
 - Water Rights

In the interest of shortening the permit application and approval period, the following methods will be proposed to the various resource agencies for design-build projects:

1. MDT will coordinate with the resource agencies and keep them involved in the decision-making during development of the PE, RFQ, RFP and DCCP and have one-on-one periodic meetings with the resource agencies to obtain “preliminary” commitments in writing during development of the PE, RFQ, RFP and DCCP to help expedite the permit application and approval process after award of the Contract and start of design and construction.
2. MDT may perform enough preliminary engineering work early to identify permit constraints or requirements during development of the PE, RFQ, RFP and DCCP. This would eliminate part of the permitting scope of work from the Contract, but would require additional MDT resources. Prior written concurrence should be obtained from the resource agencies if this procedure is to be utilized.
3. The Firm should identify construction activities that can begin before final permits are received. This would enable the Firm to start design for project features that do not require permits. The Firm could start working in those areas while work continues on other design and permit application activities.

The Firm will be responsible for compliance with all permits until the work covered by the permit is completed and the permit is closed. Since each project may require different types of permits, the RFP should specify by whom, how and when permits will be closed. In most cases, MDT's preference is to have the Firm close all permits, but there may be some permits that extend a considerable time period beyond project completion and it may be beneficial for MDT to close these permits.

9.4 REEVALUATIONS

After award of the Contract, if the Firm proposes design changes that result in construction activities outside the environmentally cleared "footprint", invalidates previous commitments, or results in a change of project scope from that identified in the approved environmental document, a written reevaluation may be required. The Firm will be responsible for preparing and obtaining approval of any reevaluation resulting from the proposed change and the time required for agency approval. Prior to performing the reevaluation, the Firm will coordinate with MDT and the impacted resource agencies to determine if the proposed design changes warrant a reevaluation. The Firm will be responsible for conducting any required additional environmental studies and completing the documentation for the environmental reevaluation. For Federal Aid projects, MDT will obtain FHWA approval of the form of the NEPA reevaluation and the reevaluation before the Firm can proceed with the proposed design change.

CHAPTER TEN

GEOTECHNICAL (SOILS AND FOUNDATIONS) PROCESS

10.1 DESIGN-BUILD PROJECTS

Design-build projects are handled differently than the typical design/bid/build projects. For a design-build project, the Firm takes on many of the responsibilities and control normally provided by MDT or its representatives. This requires a change in the approach to the project by the various groups involved. For a design-build project to work properly, this change in approach must happen.

10.2 RESPONSIBILITIES

The responsibilities between MDT's Geotechnical Engineer and the Firm can be broken down as follows.

10.2.1 Planning and Development Phase

MDT's Geotechnical Engineer – Gathers readily available existing data on the conditions at the site. Helps prepare the RFQ, RFP and DCCP including any geotechnical limitations/requirements and construction requirements for the project.

Nebraska

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, Nebraska DOT has a Design-Build page with contractor/design resources, current business opportunities and information about accelerated project delivery methods.

<https://dot.nebraska.gov/business-center/design-build/>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes, the Nebraska DOT has an accelerated project delivery guidelines with design-build procedures in Section 3.

file:///C:/Users/shoffman/Desktop/28_accelerated-project-delivery-guidelines.pdf

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

Additionally, there is an environmental services webpage for environmental stewardship.

<https://dot.nebraska.gov/projects/environment/>

| Keyword | Presence |
|---------------------|---|
| NEPA | <ul style="list-style-type: none"> • Lastly, NDOR reserves the right, in its sole discretion, to make the final determination regarding whether a particular circumstance precludes a firm from pursuit of a particular D/B or CM/GC project. E. Performing environmental studies related to the National Environmental Policy Act (NEPA) and other federal permits. • Project Selection Guidelines: Nearing completion of NEPA/USACE approvals |
| Environment | <ul style="list-style-type: none"> • If acceleration of project completion is the reason to select D/B project delivery, there are outside constraints that could affect project delivery (such as, environmental permits, extensive right-of-way (ROW) acquisition, and complex third party agreements). • Project Selection Guidelines: Environmental/USACE permits not started |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | Risk management guidelines: Archaeological, paleontological discovery ** |
| Paleontological | Risk management guidelines: Archaeological, paleontological discovery ** |
| Noise | No |
| Species | Endangered Species will be reviewed under the ACOE general permit. |
| Stormwater | No |
| Erosion | <ul style="list-style-type: none"> • Risk management guidelines: Erosion Control • Design Builder responsibilities: N. Installation of drainage and erosion control |

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| Permit | <p>Design Builder responsibilities: H. Securing certain environmental and construction permits; P. Required clearances, licenses, construction easements, and permits for Design/Builder Work, Work sites, storage areas, etc., both on- and off-site; R. Material location and storage, acquisition, permits, and transportation;</p> <p>Permitting: The Project will require several environmental, utility, and local permits/approvals. The NDOR is responsible for obtaining the environmental permits described in the table below (unless noted otherwise). Utility permits and/or local permits will be the responsibility of the Design-Build team. Though the NDOR may not have received final environmental permits when the RFP is issued, they expect to have permit conditions reasonably well defined by that time. The NDOR expect to have the NEPA process completed and to have acquired all of the necessary environmental permits before the commencement of construction. However, anticipated permit issuance dates may change depending on design and other factors. The Design/Builder may be required to support the preparation of any remaining permits as needed, as final design proceeds, and Nebraska DOR will submit the permit applications. If the Design/Builder varies from the conceptual plans to a degree that would necessitate additional permits or permit amendments, any delay and associated costs caused by procuring the permits, will be the responsibility of the Design/Builder. Additional permits or permit amendments may affect the Project design and schedule. The following table summarizes the anticipated required permits/approvals to be acquired by the NDOR and their associated status: The responsibility for obtaining each of the permits/approvals will be detailed in the RFP.</p> |
| Commitment | No |
| Compliance | <p>G. Environmental Compliance Manager:</p> <ul style="list-style-type: none"> • The Environmental Compliance Manager will work directly for the Design/Builder under the direct supervision of the Project Manager. The Environmental Compliance Manager will be available to the Project full time and will be required to be on-site during critical activities for the duration of the Project. • [INSERT QUANTITY – DEFAULT VALUE IS 10] years of experience implementing environmental programs on complex transportation/infrastructure projects. • [INSERT QUANTITY – DEFAULT VALUE IS 5] years of experience is securing environmental permits. • The Environmental Compliance Manager must not be assigned any other duties or responsibilities on this Project unless approved by the Department. <p>Additional mention of compliance:</p> <ul style="list-style-type: none"> ❖ Design builder responsibilities: G. Environmental mitigation and compliance monitoring; ❖ Qualifications of the proposed Environmental Compliance Manager (maximum 4 pts.) |
| Monitor | Design Builder Responsibilities: |

| | |
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| | G. Environmental mitigation and compliance monitoring; I. Perform additional environmental investigations, monitoring, and investigation associated with or resulting from Design/Builder's activities; |
| Mitigation | 5.4.1.3 Technical Solutions (points) The Technical Solutions evaluation subfactors are as follows: • Environmental Permitting, Mitigation and Impacts |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Nevada

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Nevada DOT does not have a dedicated webpage for D-B, P-3, or alternative delivery but Nevada DOT does have a website for vendor opportunities for current design builds.

<https://www.nevadadot.com/doing-business/vendor-opportunities>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes, the Nevada DOT has a Pioneer Programs Guideline that addresses design-build projects, specifically SECTION 3.4 DB/DBF PROJECT DEVELOPMENT CONSIDERATIONS.

<https://www.nevadadot.com/home/showdocument?id=5256>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

Also, there is an environmental services webpage and each discipline has their own manual for compliance.

<https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/engineering/environmental-services>

| Keyword | Presence |
|-------------|--|
| NEPA | 3.4.4.2 Environmental Studies, Permitting, and Compliance <ul style="list-style-type: none"> • Under the DB/DBF delivery process, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA). • In addition, responsibility for obtaining any other environmental clearances required outside of the NEPA process may also be shifted to the Design-Builder, particularly if they relate to more construction-specific permits and approvals, such as those required for soil disturbing operations. • Some additional guidelines to help establish the appropriate level of preliminary engineering are as follows: obtain the information needed to support the NEPA process. • The NEPA process may require a noise study to describe Project impacts and required mitigation measures. • Target NEPA and ROW schedule/approach |
| Environment | 3.4.4.2 Environmental Studies, Permitting, and Compliance Under the DB/DBF delivery process, the Department will continue to retain responsibility for obtaining the bulk of the environmental approvals required under the National Environmental Policy Act (NEPA). The preliminary engineering and environmental studies, definition of major Project features, selection of the preferred alternative, and preparation of the appropriate environmental documents will therefore remain the Department’s responsibility, requiring little |

change to the Project Report and Environmental Document phase of the Department's traditional design-bid-build process.

There may be some deviation from the Department's traditional handling of environmental issues involving permit modifications or amendments necessitated by subsequent changes to, or refinement of, the original design by the Design-Builder. Responsibility for any such amendments must be transferred to the Design-Builder, including responsibility for any schedule and/or cost impacts incurred in awaiting a final approval by the sponsoring or regulatory agency. In addition, responsibility for obtaining any other environmental clearances required outside of the NEPA process may also be shifted to the Design-Builder, particularly if they relate to more construction-specific permits and approvals, such as those required for soil disturbing operations. However, prior to shifting this risk to the Design-Builder, the Department must carefully consider the appropriate level of conceptual design needed to convey environmental conditions and mitigation requirements to the Design-Builder.

Typically, taking preliminary highway design to 10 percent to 30 percent is sufficient to provide enough detail to complete early action permit processes, demonstrate constructability, identify impacts and alternates, and minimize risk to both the Department and Design-Builder. If, however, the initial Environmental Assessment or Environmental Impact Statement suggests some high-risk elements (e.g., wetland mitigation), the Department may consider securing the necessary permits itself, in advance of the RFP, or providing a higher level of preliminary design and/or environmental studies to offset some of the risk to the Design-Builder.

- The Department will perform some of the tasks described as part of the environmental process or allocate them to the Design-Builder.
- Acquiring environmental approvals is the Department's responsibility and determining the noise impacts of the Project may be part of that process.
- A possible way to encourage superior performance is to tie incentives to a Proposer's performance that exceeds Project goals. The incentives must focus on key areas of performance that are important to the Department or other stakeholders. Such areas could include schedule, quality, environmental compliance, public relations, and public and worker safety.
- The RFP typically includes, among other items: The general requirements for the project, describing the goals, objectives, and operational constraints for the project (e.g., environmental or third party issues)

3.6.2.7 Environmental Permitting

On a DB/DBF Project, since the design is incomplete at the procurement stage, the Department has limited control in obtaining any environmental permits that require a more complete design and understanding of the final Project conditions. Because the Design-Builder has more control over the final Project design, the DB/DBF Agreement can be used to shift some permitting responsibilities from the Department to the Design-Builder. The RFP must be clear in identifying which party is responsible for acquiring which permits.

Permit conditions may also result in unexpected design and/or construction requirements that may be more costly or time consuming than anticipated in the Design-Builder's Proposal. The RFP must therefore provide enough detail about environmental conditions and commitments and the general status of the

| | |
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| | <p>permitting process to clearly convey the level of risk to be absorbed by the Design-Builder for environmental compliance issues.</p> <p>The RFP may also stipulate, regardless of the operator named on the permit (i.e., the Department or the Design-Builder), that all environmental violation costs are the responsibility of the Design-Builder.</p> <p>For Projects having extreme environmental sensitivity, the RFP may require the Design-Builder to retain a qualified onsite inspector to ensure environmental compliance and to coordinate with the Department on environmental issues as they develop. Under a best-value procurement process, the Department may also structure the evaluation criteria to reward Proposers that offer approaches designed to reduce environmental impacts beyond that approved during the permitting process.</p> |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>3.4.5.5 Noise</p> <p>The NEPA process may require a noise study to describe Project impacts and required mitigation measures. Acquiring environmental approvals is the Department’s responsibility and determining the noise impacts of the Project may be part of that process. Maintaining a balance between fulfilling regulatory requirements, allocating risk, and losing innovation benefits requires modification to a typical environmental process.</p> <p>One means of accomplishing this balance involves using an assumed alignment, rather than a final alignment configuration, for the noise study and environmental applications. Calculate the impact to receivers based on an assumed alignment and document the required mitigation based on the assumed parameters. Prepare the Noise Technical Report, which documents the allowable impact to receivers, the analysis assumptions (including profiles and alignments), and the required mitigation measures to gain NEPA approval.</p> <p>Development of the Project concept ideally balances variations in the alignment, set by the roadway geometric design criteria, with effects on required mitigation measures. In the RFP, clearly define changes in the alignment that will require an adjustment to the prescribed mitigation measures. If significant variability is allowed in the design criteria, define the reapplication process and how the schedule and cost risk will be allocated.</p> <p>Make the Department’s noise analysis model available to Proposers in order to maintain consistency of the Proposers’ conceptual designs. In situations where the Proposers are allowed to deviate from Department’s conceptual design, include the noise study as an attachment and provide scoring criteria during the RFP process to assist them in making design decisions.</p> |
| Species | Unexpected conditions (e.g., differing site conditions, hazardous materials, endangered species, etc.) that may arise during construction will usually remain the Department’s responsibility and will be treated as changed conditions |
| Stormwater | No |
| Erosion | No |
| Permit | Ensuring that all environmental obligations are met and permits are in |

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| | place |
| Commitment | No |
| Compliance | <ul style="list-style-type: none"> • The RFP must therefore provide enough detail about environmental conditions and commitments and the general status of the permitting process to clearly convey the level of risk to be absorbed by the Design-Builder for environmental compliance issues. • For Projects having extreme environmental sensitivity, the RFP may require the Design-Builder to retain a qualified onsite inspector to ensure environmental compliance and to coordinate with the Department on environmental issues as they develop. |
| Monitor | No |
| Mitigation | See noise above, the mention of mitigation is in that section. |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

Nevada DOT has an Environmental Services Procedures Guide with specific chapters dedicated to NEPA.

<https://www.nevadadot.com/doing-business/about-ndot/ndot-divisions/engineering/environmental-services/environmental-documents-and-projects>

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The Road Design Guide 2010 Edition has detailed policy and procedures provided in Section 4. In Section 5.6 *Environmental Services*, it states:

The Designer is to provide Environmental Services a set of plans along with the approved PDFS report so they can obtain necessary permits or clearances. For complex projects such as new construction, capacity projects, sound walls, etc., early and periodic coordination will need to occur during the preliminary design phase in an effort minimize environmental impacts.

Coordination specified in *Section 5.14 Project Management* states:

The Project manager will coordinate the exchange of information with external entities such as counties, cities, and stakeholders. Road Design will provide technical support and/or engineering services and will coordinate internally with divisions such as Hydraulics, Materials, Environmental, Construction, etc.

New Hampshire

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, NHDOT does have a dedicated webpage for P-3. Additionally, they have a Bureau of Environment site:

<https://www.nh.gov/dot/org/projectdevelopment/environment/index.htm>

<https://www.nh.gov/dot/programs/public-private-partnership/index.htm>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No, the NHDOT does not have a D-B or P-3 guidebook.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

It should be noted that selection criteria is still TBD for the following sections of the consultant selection manual:

- 2.3 Design Build Contracts - TBD
- 2.4 Construction Manager General Contractor Contracts - TBD
- 2.5 Best Value (QBS with Cost Consideration) Contracts - TBD
- 2.6 Public-Private Partnership (P3) Contracts - TBD

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

New Jersey

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. New Jersey is not authorized to use design-build for transportation projects.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

New Mexico

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No. NMDOT does not appear to use design build regularly. They are authorized to use it for projects over \$50 million. Most of the district projects listed on the website did not trip this threshold. For the two that did, they may be design build, as a contractor contact was listed. Districts 2 and 6 each have one project listed in this way. No additional information is provided regarding the projects.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

New York

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes. NYSDOT has a Design-Build Initiative page housed within the Engineering Division, Office of Design.

<https://www.dot.ny.gov/divisions/engineering/design/dqab/design-build>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. The first link is to the page housing all five volumes. The subsequent links are to each volume.

Volumes I-V – <https://www.dot.ny.gov/divisions/engineering/design/dqab/design-build/dbpm>

Volume I: Design-Build Procedure Manual –

<https://www.dot.ny.gov/divisions/engineering/design/dqab/dqab-repository/2011%20Design%20Build%20Manual%20%20Volume1%20of%205.pdf>

Volume II: Request for Letters of Interest and Qualifications for Design-Build Services –

<https://www.dot.ny.gov/divisions/engineering/design/dqab/dqab-repository/2011%20Design%20Build%20Manual%20Volume%202%20of%205.pdf>

*Key word search not tabulated. This is a template document. It is clear from a review of the document that the procedures outlined in Volume I are captured in this RFQ template.

Volume III: Design-Build Contract Document –

<https://www.dot.ny.gov/divisions/engineering/design/dqab/dqab-repository/2011%20Design%20Build%20Manual%20Volume%203%20of%205.pdf>

*Key word search not tabulated. This is a template document. It is clear from a review of the document that the procedures outlined in Volume I are captured in this Contract template. Historic resources are included in the contract language.

Volume IV: Evaluation Templates – <https://www.dot.ny.gov/divisions/engineering/design/dqab/dqab-repository/2011%20Design%20Build%20Manual%20Volume%204%20of%205.pdf>

*Key word search not tabulated. This is a template document. It is clear from a review of the document that the procedures outlined in Volume I are captured in this evaluation template. Environmental mitigation and monitoring are specifically included as evaluation criteria.

Volume V: Sample Forms for Department Use –

<https://www.dot.ny.gov/divisions/engineering/design/dqab/dqab-repository/2011%20Design%20Build%20Manual%20Volume%205%20of%205.pdf>

No key words present.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence in Volume I |
|---------|--|
| NEPA | <ul style="list-style-type: none">Under General Changes: Section added on NEPA Class I (EIS) projects (Section 3.3.1), also shown in the table of contents |

- It is preferred by the Department that the Environmental Process Phase be completed before issuing the Request for Proposals (RFP) in the DB Procurement Phase, however, FHWA DB regulations (revised by SAFETEA-LU) do not preclude issuance of the RFP, proceeding with award of the DB Contract or issuing a NTP for preliminary design work prior to NEPA compliance. Concurrence of the Chief Engineer must be obtained to proceed ahead of NEPA.
- The relationship among the environmental classes [National Environmental Policy Act (NEPA)] and environmental types (SEQR) and Design Phases I through IV outlined in the Project Development Manual remain essentially the same as with the Department's design-bid-build process.
- **Section 3.3.1 NEPA Class I (EIS) Projects:** Section 6002 of SAFETEA-LU added section 139, —efficient environmental reviews for project decision-making, to 23 USC. This section requires lead agencies to develop a coordination plan early in the EIS process, and revise the plan as required as the project develops. The coordination plan should define the roles of each lead agency within the environmental review process and how the lead agencies will provide for stakeholder input. The plan should also identify key coordination points throughout the process. In addition, the coordination plan may establish a schedule of regular meetings, identifying which persons, organizations, or agencies should be included for each coordination point. Timeframes may be set for stakeholder input. Additional guidance for compliance with SAFETA-LU Section 6002 is available on the FHWA's website (<http://www.fhwa.dot.gov/hep/section6002/index.htm>).
- One of the most significant determinations to be made relates to the type and amount of PE (or design) that needs to be accomplished prior to award of the DB contract. This decision must be consistent with NEPA, risk issues, Stakeholder concerns and the Project specific approaches for Utilities, ROW, drainage, and railroads.
- RFQ Recommended Appendix: Appendix A provides a more detailed description of the scope of work, including the Project limits, physical components to be designed and constructed, current status of the Project, NEPA process status, anticipated Design-Builder roles and responsibilities, anticipated Department roles and responsibilities, Material or Equipment available from the Department, and Stakeholder roles and responsibilities.
- Related to RFPs: Originally under the FHWA DB regulations (23 CFR 636.109) the NEPA process was required to be completed. However, SAFETEA-LU removed that restriction, and the RFP can be issued prior to compliance with NEPA. It is preferred by the Department that NEPA be completed prior to issuance of the RFP, however, there may to circumstances that compel a project to proceed ahead of NEPA compliance, in which case the Department's Project Manager must obtain concurrence from the Chief Engineer;
- As indicated in the FHWA Major Project Delivery timeline (http://www.fhwa.dot.gov/ipd/pdfs/project_delivery/timeline_major_projects_sep08.pdf), there are generally two Cost Estimate Reviews (CER) - one at

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| | <p>the end of the NEPA process and the other before the start of construction - in the delivery of a Major Project.</p> <ul style="list-style-type: none"> • A draft PMP should be completed a minimum of 60 days prior to submitting the final NEPA document to FHWA for review, with the final document submitted no later than 90 days after the NEPA process is complete. • [Acronym defined]: NEPA National Environmental Policy Act • Attachment 4, Risk Identification, Assessment, and Allocation – Law suits related to time; cost (settlement or mitigation) <ul style="list-style-type: none"> ○ NEPA ○ Property owners ○ Community groups • Attachment 4, Risk Identification, Assessment, and Allocation – Law suits related to time – NEPA (EIS & ROD) • Attachment 5: SPECIFIC APPROACHES FOR ROUTE 9A PROJECT (in addition to procedures of the DBPM) – DOT manage NEPA process; other permits assigned to party that can best manage them <ul style="list-style-type: none"> ○ RFP should include requirements for D/B Contractor Team to have permit experience in NYC. • D-B Training slides (see attached, pages 16 and 37). |
| Environment | <ul style="list-style-type: none"> • The DBPM covers the entire spectrum of DB project delivery from planning and environmental documentation through project execution and closeout. • Within the purpose: The DB planning, environmental process, Preliminary Engineering (PE), procurement, and project execution procedures to be followed; • The four sub phases of DB Phase II, Environmental Process, are very similar to Design Phases I through IV outlined in the Department’s Project Development Manual... For instance, the activities and steps listed in the Preliminary Engineering and DB Procurement Phases should be performed concurrently with the subphases of the Environmental Process to ensure a successful project. It is preferred by the Department that the Environmental Process Phase be completed before issuing the Request for Proposals (RFP) in the DB Procurement Phase, however, FHWA DB regulations (revised by SAFETEA-LU) do not preclude issuance of the RFP, proceeding with award of the DB Contract or issuing a NTP for preliminary design work prior to NEPA compliance.... The phases for DB projects are: <ul style="list-style-type: none"> ○ DB Phase I Procurement Strategy Development ○ DB Phase II Environmental Process <ul style="list-style-type: none"> ▪ DB Subphase IIA Development of Feasible Design Alternatives, Identification and ▪ Assessment of Impacts ▪ DB Subphase IIB Advisory Agency Review (if needed) ▪ DB Subphase IIC Public Hearing/Informational Meeting (if needed) ▪ DB Subphase IID Final Evaluation and Recommendation ○ DB Phase III Preliminary Engineering ○ DB Phase IV DB Procurement ○ DB Phase V DB Execution |

- Figure 1-1 shows how the procurement strategy development kicks off the concurrent start of the environmental process, the preliminary engineering, and the development of both the RFQ and RFP documents. It further shows how the preliminary engineering is tailored to support both the environmental process as well as the design-build process.
- Section 1.5 RELATIONSHIP AMONG ENVIRONMENTAL CLASSES/TYPES, DESIGN-BUILD PHASES, AND DESIGN APPROVAL DOCUMENTS – The relationship among the environmental classes [National Environmental Policy Act (NEPA)] and environmental types (SEQR) and Design Phases I through IV outlined in the Project Development Manual remain essentially the same as with the Department’s design-bid-build process. The basic exception is that no Design Approval documents are required under design-build procurement. In its place is the requirement to obtain approval of the RFP document from FHWA for Federal-Aid projects. The procedures outlined for remaining DB Phases are essentially identical for all environmental classes and types.
- The scope should carry through any environmental or community commitments.
- Design-Build has proven to be particularly adaptable to and able to handle miscellaneous project requirements, such as erosion and sediment control, public information, community relations, environmental mitigation, MPT, and maintenance of access.
- Environmental Risks/Issues: The method of project delivery (DB, design-bid-build, and others) does not have a direct bearing on or relationship to the environmental documentation for a project. However, the environmental issues and required mitigation measures on some projects may require design to be taken to a high level of completion, thereby reducing (or possibly negating) the benefits of DB. Environmentally sensitive projects have been delivered successfully using DB, and DB can handle the —moving target|| associated with such projects provided the overall contract provides flexibility and the means to mitigate or minimize the uncertainties and risks in an equitable manner.
- Section 3.3 Stakeholder Identification – Federal agencies, such as the Federal Highway Administration (FHWA), United States (US) Army Corps of Engineers, and Environmental Protection Agency (EPA);
- **Section 3.3.1 NEPA Class I (EIS) Projects:** Section 6002 of SAFETEA-LU added section 139, —efficient environmental reviews for project decision-making, to 23 USC. This section requires lead agencies to develop a coordination plan early in the EIS process, and revise the plan as required as the project develops. The coordination plan should define the roles of each lead agency within the environmental review process and how the lead agencies will provide for stakeholder input. The plan should also identify key coordination points throughout the process. In addition, the coordination plan may establish a schedule of regular meetings, identifying which persons, organizations, or agencies should be included for each coordination point. Timeframes may be set for stakeholder input. Additional guidance for

compliance with SAFETA-LU Section 6002 is available on the FHWA's website (<http://www.fhwa.dot.gov/hep/section6002/index.htm>).

- Within Project Goals – Minimize disturbance to the environment/mitigate environmental impacts.
- Within Risk Identification – A typical list may include the following: A) Environmental approvals; ...
- Incentive fee pool amounts for superior performance on such elements as environmental monitoring and mitigation and/or community relations are difficult to calculate. The relative value of their importance calls for judgment on the part of the Department's Project Management Team. Tangible benefits may be difficult to quantify, but the relative importance of such factors is generally easy to determine. If any of the factors is relatively unimportant, there would be no need to provide an incentive fee.
- Specific approaches cover a range of issues including, but not limited to: the level and type of preliminary engineering and/or design; the use of stipends; the use of and the type of
- incentives/disincentives; long-term maintenance; Warranties; wrap-up insurance; the use of options and a stipulated sum; Design-Builder responsibilities in ROW acquisition, utility relocation, permits (construction and environmental) and public information; partnering; subcontracting safeguards; the project organization including whether or not to use a support consultant for project management; the need for a SEP-14 Request (for those instances when procurement procedures or techniques are needed for a project that are not allowed by the FHWA DB regulations); and the use of Alternate Proposals or alternate technical concepts.
- As with design-bid-build projects, a certain level of PE is necessary to support the environmental process for a DB project as well as advance acquisition of ROW.
- It is not uncommon for project owners to undertake a greater level of PE than is necessary. The extent of PE should be driven by the requirements of the environmental document and information gleaned from the risk identification, assessment, and allocation process.
- The focus of PE for a specific DB project should be on the following: 1) Providing information necessary for the environmental documents; ...
- One of the focal points of PE is to provide sufficient data and information to support the environmental process. Care should be taken, however, to focus on defining those elements that are actually needed to determine the potential environmental impacts.
- Within Table 3.8, Procurement Process Outline – Obtain approvals of applicable environmental documents and design approval
- Project Support, including the following: a) Maintenance and Protection of Traffic; b) Public information/community relations, if such work is included in the scope of the Project;
- c) Soil and erosion control; d) Environmental mitigation and monitoring, including aesthetics; and e) The Department maintains a Consultant database.

- Chapter 4 ENVIRONMENTAL DOCUMENTATION AND DESIGN-BUILD PRELIMINARY ENGINEERING (see PDF)
- Informational meetings – At significant milestones in the development of the RFP or other significant project related milestones, such as the approval of environmental documents, execution of key agreements, or securing funding;
- Informational meetings – Information relative to environmental, Stakeholder, and community concerns and constraints;
- RFQ: General information relating to project schedule, environmental status, funding status and plans, governing law, insurance, and bonding requirements; how inquiries from Proposers will be handled; RFQ amendment procedures; Department notification procedures; other administrative matters; and —rules of contact|| (how the parties will communicate with each other during the SOQ preparation and evaluation phases);
- The RFP development needs to be a continuously and fully integrated process among those responsible for procurement, management, technical development, and project support activities, such as ROW acquisition, environmental analysis and decision-making, public information/community relations, and Stakeholder involvement and coordination.
- Project Support (may include environmental mitigation and monitoring and public information/community relations).
- Everything produced by the Department and its consultants in support of a DB procurement (i.e., PE/design; agreements with Utilities and others; ROW; environmental assessments and permits; and Performance Specifications) is interrelated with the RFP.
- Performance Specifications, tailored to the needs of a specific project and focused on the desired end result rather than the —how to|| approach in traditional design-bid-build specifications (may also include applicable design policies and procedures), including environmental constraints and commitments from the environmental process for the Project;
- Reference documents may be in the form of Department manuals (such as the Contract Administration Manual, Materials Inspection Manual, etc.), the environmental documents and decisions, old contract plans or As-built Plans, reports, condition surveys, agreements, other contracts, photographs, boring logs, correspondence, and meeting minutes.
- The Department cannot require work to be done in accordance with the reference documents. For example, environmental documents included in the reference documents may identify certain mitigation or permit requirements. If the Department wishes to require the Design-Builder to fulfill any of those requirements, those requirements should be duplicated and included in the Contract Documents as mandatory. The Contract Documents may incorporate portions of the reference documents by reference, thereby converting that portion of the reference document into a Contract Document. However, it is preferable to avoid this approach because it can lead to confusion regarding the intent of the parties.

- Project Support (may include environmental mitigation and monitoring and public information/community relations).
- Basic Project Configuration – Since the RFP only represents PE, it is necessary to define the physical constraints within which the Proposer may submit its Proposal and complete the final design and construction. Such constraints, defined in the environmental documents and Contract Documents, are referred to as the Basic Project Configuration.
- The DB Section 107 of the DB Section 100 addresses legal relations for the Project as well as the Design- Builder’s insurance requirements and responsibility to the public during the Project. This Section identifies requirements for Project safety and security, in various environmental and Cultural Resources areas, and for ROW.
- Environmental Monitoring and Mitigation (if included in the contract) (PC 4);
- Meeting the PCP not only includes accomplishing the physical work, but also performing and documenting associated work such as the specified QC activities and erosion control and environmental mitigation work.
- A more complex project’s Quality Plan should address the following: ... Environmental mitigation and monitoring.
- Section 10.5.2.1 Environmental Monitoring – The responsibility for monitoring compliance with environmental requirements may vary from one contract to another. It is not unusual for the Design-Builder to have responsibility for monitoring its own compliance through the use of environmental specialists assigned to the Design-Builder’s QC staff. If the Design-Builder has such responsibilities, the Department would need to perform such activities as the following: A) Verifying qualifications of Design-Builder environmental staff; B) Spot checking compliance; and C) Auditing Design-Builder environmental monitoring records.
- If the Department assigns responsibility to the Design-Builder (through its QC organization) to inspect and monitor compliance with SPDES requirements, the Department will still need to conduct Oversight activities similar to those for environmental monitoring in Section 10.5.2.10 of this DBPM.
- Section 10.6.5 Environmental Mitigation – A change in the Work may be deemed to occur if environmental measures are required by the Department or others that are not specified or reasonably implied in the Contract Documents, including the mitigation measures included in the Design-Builder’s Proposal. In other words, if the Design-Builder proposes certain mitigation measures in its Proposal that are not required by the Contract Documents, but subsequently are required by the Department or other agency, the Design-Builder would not be entitled to an Order-on-Contract under the provision. See Exhibit III, Division 2, Part 2, DB Section 104-4.4.
- CERCLA Comprehensive Environmental Response, Compensation and Liability Act
- EIS Environmental Impact Statement
- EPA Environmental Protection Agency
- NEPA National Environmental Policy Act
- An Alternate proposal shall not conflict with criteria contained in the environmental documents (ROD, FONSI, or categorical exclusion, as

appropriate for the Project). An Alternate proposal may provide alternate solutions (affecting both quality and price) relating to, but not limited to, the Design-Builder's capability, resources, management tools, and design, construction and technical innovation, that are almost always, but not necessarily, outside of the requirements of the RFP, except for the environmental criteria.

- Construction Compliance Engineer - The Department's representative with primary responsibility for monitoring and/or auditing the Design-Builder's construction and environmental field activities for compliance with the Contract's requirements.
- Environmental Approvals - The Governmental Approvals contained or referenced in the environmental provisions of the Contract.
- Environmental Resource - The physical and biological components of the human and natural environment.
- Hazardous Materials - The term Hazardous Materials shall mean any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 United States Code (USC) 9601, et seq.; the Hazardous Materials Transportation Act, 49 USC 5101, et seq.; the Resource Conservation and Recovery Act, 42 USC 6901, et seq.; the Toxic Substances Control Act, 15 USC 2601, et seq.; the Clean Water Act of 1977, 33 USC 1251, et seq.; the Clean Air Act, 42 USC 7401, et seq.; and the New York State Environmental Conservation Law, or any other federal, state, or local statute, law, ordinance, resolution, code, rule, regulation, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning any hazardous, toxic, or dangerous waste, substance, or material.
- Within Quality Control – Inspection, sampling and testing of Materials, plants, production and construction; Material certifications; calibration and maintenance of Equipment; production process control; and monitoring of environmental compliance
- Within D-B Scope of Work – Execute all environmental mitigation assigned.
- Attachment 2, Stakeholders: Environmental Groups, Focal point for interest/ environmental and civic groups
- Minimize impacts to community and environment
- Attachment 4, Risk Identification, Assessment, and Allocation – Fitting into environment associated with time and quality (flexibility)
- Attachment 4, Risk Identification, Assessment, and Allocation – Obtaining other environmental permits associated with time
- Attachment 7, RFP EVALUATION FACTORS (tentative) (for Cut and Cover Tunnel and
- At-Grade Alternatives) – Management Approach (emphasis on managing a design-build project involving cut and cover tunnel work (or at-grade work) in an urban environment; public information plan; QC plan; public involvement; schedule; EPC management and compliance; team inter-coordination; logistics of labor access; material procurement; etc.)

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| | <ul style="list-style-type: none"> • D-B Training slides (see attached, pages 7, 13, 16, 19, 27, 33, 36, 37, 40, 41, 42, 43). |
| Cultural (resource) | <ul style="list-style-type: none"> • The DB Section 107 of the DB Section 100 addresses legal relations for the Project as well as the Design- Builder’s insurance requirements and responsibility to the public during the Project. This Section identifies requirements for Project safety and security, in various environmental and Cultural Resources areas, and for ROW. • Cultural Resource - Any prehistoric or historic period artifact, site, building, structure, material remain, or traditional use area resulting from, or associated with, human cultural activity. Historically important cultural resources are those eligible for inclusion on the National Register of Historic Places. |
| Historic | <ul style="list-style-type: none"> • SHPO State Historic Preservation Office • Cultural Resource - Any prehistoric or historic period artifact, site, building, structure, material remain, or traditional use area resulting from, or associated with, human cultural activity. Historically important cultural resources are those eligible for inclusion on the National Register of Historic Places. |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | <ul style="list-style-type: none"> • Miscellaneous Requirements: Design-Build has proven to be particularly adaptable to and able to handle miscellaneous project requirements, such as erosion and sediment control, public information, community relations, environmental mitigation, MPT, and maintenance of access. • Project support, including the following: ...Soil and erosion control; • For construction items, the PCs should be distinct physical components of the Project that are clearly delineated and defined in terms of their location. Examples of construction PCs include the following: ...Erosion control and revegetation • Erosion Control - Erosion control is any action taken or item used as part of the Project, or as a separate action, to minimize the destructive effects of wind and water on surface soil. The use and placement of berms and dams, fiber mats, grasses, sod, mulches, slope drains, sediment basins, and drainage systems may be temporary and used only during construction or permanent and installed for the anticipated life of the facility. • Landscaping - The use and placement of plant Materials (trees, shrubs, vines, and certain ground covers) consistent with an approved landscape architectural Design Plan. Planting vegetation for screening and erosion control purposes does not constitute landscaping. |
| Permit | <ul style="list-style-type: none"> • Within 3.5 RISK IDENTIFICATION, ASSESSMENT, AND ALLOCATION, Step 1 (identification)...A typical list may include the following: ...Permits |

- Various additional procurement options are available for the Department's DB projects consistent with applicable law and Department policy and as reflected in this DBPM. Specific approaches cover a range of issues including, but not limited to: the level and type of preliminary engineering and/or design; the use of stipends; the use of and the type of incentives/disincentives; long-term maintenance; Warranties; wrap-up insurance; the use of options and a stipulated sum; Design-Builder responsibilities in ROW acquisition, utility relocation, permits (construction and environmental) and public information; partnering; subcontracting safeguards; the project organization including whether or not to use a support consultant for project management; the need for a SEP-14 Request (for those instances when procurement procedures or techniques are needed for a project that are not allowed by the FHWA DB regulations); and the use of Alternate Proposals or alternate technical concepts.
- Other PE efforts should focus on the following: ...Department-secured permits.
- It is also desirable to obtain advance agreement regarding the process to be followed for any permits required by local agencies, preferably including an expedited process for issuance of permits, waivers of restrictions on night and weekend work, provisions regarding traffic management, coordination of the work with adjacent projects, and addressing any issues relating to work within local agency rights-of-way.
- Section 4.3.6 Permits – Major permits which have not been obtained prior to the due date for Proposals are likely to be considered a major project risk by the Proposers. It is therefore advisable for the Department to take steps to obtain such permits during this phase of project development if not previously obtained during Design Phases I through IV. This is the case even though such permits may normally be obtained during Design Phases V and VI of a design-bid-build project. It may not be feasible to obtain all permits until after 100% design has been completed. The Department should evaluate the risks associated with such permits and determine whether it wishes to retain responsibility or transfer the responsibility to the Design-Builder. It may be possible to obtain a generic permit covering the major issues, and to delegate responsibility to the Design-Builder to obtain specific permits once the design reaches an appropriate level. Certain other permits may typically be obtained by a contractor on a design-bid-build project after award of the contract. The Department should examine such permits and, if they require long lead times, may wish to work out alternative arrangements in order to expedite the Project schedule. In assessing the value or viability of obtaining a permit prior to award to the Design-Builder, the Department should balance the advantages of obtaining the permit against the disadvantages of producing the higher level of design required to obtain the permit, with reference to the Project goals, the desired allocation of project risk, and the need to provide design flexibility to the Design-Builder. As noted above, some permits may be best obtained by the Design-Builder or completed based on interim or draft permits obtained by the Department. Where it is not possible to obtain an interim or draft permit, the Department should work with regulatory agencies to facilitate approval of permits prior

to advanced levels of design or final design. In some cases agencies will provide the criteria for permit approval and agree to issue the permit once the Design-Builder satisfies those criteria.

- Everything produced by the Department and its consultants in support of a DB procurement (i.e., PE/design; agreements with Utilities and others; ROW; environmental assessments and permits; and Performance Specifications) is interrelated with the RFP.
- The Department cannot require work to be done in accordance with the reference documents. For example, environmental documents included in the reference documents may identify certain mitigation or permit requirements.
- Regarding D-B Section 107 Legal Relations and Responsibility to the Public – Currently, this Section requires the Design-Builder to acquire all licenses and permits for the Project. If the Department determines that there are some licenses or permits that it will acquire for the Project, those licenses or permits that the Department will acquire should be identified in a Special Provision.
- Within Pricing, Harmful and Hazardous Materials Remediation (if known to exist and included in the contract) (PC 6). Although Hazardous Materials remediation includes construction activities, it also may include significant design and permitting activities and is typically separated from the other construction PCs.
- The Department’s current design-bid-build procedures indicate that the Department will conduct a series of meetings, including the following:
...meetings with permitting agencies
- Governmental Approval - Any approval, authorization, certification, consent, decision, exemption, filing, lease, license, permit, registration, or ruling required by or with any Governmental Person in order to design and construct the Project.
- Governmental Rule - Any statute, law, regulation, ordinance, rule, judgment, order, decree, permit, concession, grant, franchise, license, agreement, directive, guideline, policy requirement, other governmental restriction, or any similar form of decision of, determination by, interpretation of, or administration of any of the foregoing by any Governmental Person, which is applicable to the Work or the Project, whether now or hereafter in effect.
- Right of Way Acquisition Schedule - The schedule for acquisition of ROW permits or easements by the Department set forth in the Contract and/or ITP.
- The stakeholders of the Project may include the following: ... Federal and State regulatory and permitting agencies having jurisdiction over portions of the Work;
- Within the Scope of Work for a D-B contract – Obtain all required and necessary construction permits and all other assigned permits.
- Attachment 2, Stakeholders. NYSDEC with a focus area of permits, EPC
- Attachment 4, Risk Identification, Assessment, and Allocation – Obtaining other environmental permits associated with time

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| | <ul style="list-style-type: none"> • Attachment 5: SPECIFIC APPROACHES FOR ROUTE 9A PROJECT (in addition to procedures of the DBPM) – DOT manage NEPA process; other permits assigned to party that can best manage them <ul style="list-style-type: none"> ○ RFP should include requirements for D/B Contractor Team to have permit experience in NYC. • D-B Training slides (see attached, pages 12 and 27). |
| Commitment | <ul style="list-style-type: none"> • The scope should carry through any environmental or community commitments. • Performance Specifications, tailored to the needs of a specific project and focused on the desired end result rather than the —how to approach in traditional design-bid-build specifications (may also include applicable design policies and procedures), including environmental constraints and commitments from the environmental process for the Project; • Attachment 8, ALTERNATE PROPOSAL OPPORTUNITIES (for Cut and Cover Tunnel and At-Grade Alternatives – MPT criteria (changes to MPT requirements subject to concurrence of certain stakeholders within provisions of EIS mitigation commitments) |
| Compliance | <ul style="list-style-type: none"> • It is preferred by the Department that the Environmental Process Phase be completed before issuing the Request for Proposals (RFP) in the DB Procurement Phase, however, FHWA DB regulations (revised by SAFETEA-LU) do not preclude issuance of the RFP, proceeding with award of the DB Contract or issuing a NTP for preliminary design work prior to NEPA compliance. • Additional guidance for compliance with SAFETA-LU Section 6002 is available on the FHWA's website (http://www.fhwa.dot.gov/hep/section6002/index.htm). • Originally under the FHWA DB regulations (23 CFR 636.109) the NEPA process was required to be completed. However, SAFETEA-LU removed that restriction, and the RFP can be issued prior to compliance with NEPA. It is preferred by the Department that NEPA be completed prior to issuance of the RFP, however, there may to circumstances that compel a project to proceed ahead of NEPA compliance, in which case the Department's Project Manager must obtain concurrence from the Chief Engineer; • Organization chart that includes Design and Construction Compliance Engineers and Monitors; definitions provided below. • The Department, primarily though the Construction Compliance Engineer (CCE) and the Construction Compliance Monitors (CCM), will oversee the Design-Builder's safety (public and Worker) and security programs to verify that the Design-Builder is conducting its operations in accordance with contract requirements and the Design-Builder's Safety Plan and Security Plan. • The responsibility for monitoring compliance with environmental requirements may vary from one contract to another. • Section 10.5.2.1 Environmental Monitoring – The responsibility for monitoring compliance with environmental requirements may vary from one contract to another. It is not unusual for the Design-Builder to have responsibility for monitoring its own compliance through the use of |

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| | <p>environmental specialists assigned to the Design-Builder’s QC staff. If the Design-Builder has such responsibilities, the Department would need to perform such activities as the following: A) Verifying qualifications of Design-Builder environmental staff; B) Spot checking compliance; and C) Auditing Design-Builder environmental monitoring records.</p> <ul style="list-style-type: none"> • The Design-Builder will be responsible for complying with the State Pollutant Discharge Elimination System (SPDES) in all cases. If the Department assigns responsibility to the Design-Builder (through its QC organization) to inspect and monitor compliance with SPDES requirements, the Department will still need to conduct Oversight activities similar to those for environmental monitoring in Section 10.5.2.10 of this DBPM. • Within Final Acceptance, ... The United States (US) Coast Guard or US Army Corps of Engineers relative to compliance with clearance requirements affecting navigation; or • Acceptance - A determination by the Federal Highway Administration (FHWA.) regarding compliance with applicable Governmental Rules. • Construction Compliance Engineer - The Department’s representative with primary responsibility for monitoring and/or auditing the Design-Builder’s construction and environmental field activities for compliance with the Contract’s requirements. • Construction Compliance Monitor - A representative of the Construction Compliance Engineer (CCE), with responsibility for monitoring and/or auditing the Design-Builder’s construction activities for compliance with the Contract’s requirements. • Design Compliance Engineer - The Department’s representative with primary responsibility for monitoring and/or auditing the Design-Builder’s design and engineering activities for compliance with the Contract’s requirements. • Design Compliance Monitor - A representative of the Design Compliance Engineer (DCE), with responsibility for monitoring and/or auditing the Design-Builder’s design activities for compliance with the Contract’s requirements. • Within Quality Control – For construction this includes, but is not limited to, procedures for Materials handling and construction quality. Inspection, sampling and testing of Materials, plants, production and construction; Material certifications; calibration and maintenance of Equipment; production process control; and monitoring of environmental compliance. Quality Control also includes documentation of all QC design and construction efforts. • D-B Training slides (see attached, pages 42 and 44). |
| Monitor | <ul style="list-style-type: none"> • Some guidelines for determining incentive fee pool amounts follow: ... Incentive fee pool amounts for superior performance on such elements as environmental monitoring and mitigation and/or community relations are difficult to calculate. The relative value of their importance calls for judgment on the part of the Department’s Project Management Team. Tangible benefits may be difficult to quantify, but the relative importance of such factors is generally easy to determine. If any of the factors is relatively unimportant, there would be no need to provide an incentive fee. |

- Project support including the following: ... Environmental mitigation and monitoring, including aesthetics; and
- Engineering and design costs must be considered as well as the costs of additional responsibilities assigned to Design-Builders that are normally performed by the Department in design-bid-build projects (such as, certain QC activities and documentation, public information/community relations, monitoring environmental mitigation, and As-built Plans), and the potential costs associated with risks that have been allocated to the DB contractor.
- The quality factors/subfactors in an RFP might include the following: ... Project Support (may include environmental mitigation and monitoring and public information/community relations).
- Within Evaluation Factors – Quality factors for the RFP/Proposal often include the following: ... Project Support (may include environmental mitigation and monitoring, public information/community relations, and community impacts).
- Within Pricing – Environmental Monitoring and Mitigation (if included in the contract) (PC 4);
- Within QA/QC – Department representative [the Design Compliance Engineer (DCE) and/or Design Compliance Monitors (DCM)] will provide continuous design Oversight throughout the Project. See Section 10.4 of this DBPM for a discussion of typical design Oversight activities;
- 10.1.1 Department’s Role A) The Department’s Oversight roles are primarily the following: 1) Monitoring; 2) Auditing; and 3) Verifying.
- Organization chart that includes Design and Construction Compliance Engineers and Monitors; definitions provided below.
- A more complex project’s Quality Plan should address the following: ... Environmental mitigation and monitoring.
- The DCE, Design Compliance Monitors (DCM) and other participants in design reviews should record their comments on Form DR (Design Review Comments). See Exhibit III, Division 2, Part 2, Appendix 111A; and
- Section 10.5.2.1 Environmental Monitoring – The responsibility for monitoring compliance with environmental requirements may vary from one contract to another. It is not unusual for the Design-Builder to have responsibility for monitoring its own compliance through the use of environmental specialists assigned to the Design-Builder’s QC staff. If the Design-Builder has such responsibilities, the Department would need to perform such activities as the following: A) Verifying qualifications of Design-Builder environmental staff; B) Spot checking compliance; and C) Auditing Design-Builder environmental monitoring records.
- If the Department assigns responsibility to the Design-Builder (through its QC organization) to inspect and monitor compliance with SPDES requirements, the Department will still need to conduct Oversight activities similar to those for environmental monitoring in Section 10.5.2.10 of this DBPM.
- Construction Compliance Engineer - The Department’s representative with primary responsibility for monitoring and/or auditing the Design-Builder’s construction and environmental field activities for compliance with the Contract’s requirements.

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| | <ul style="list-style-type: none"> • Construction Compliance Monitor - A representative of the Construction Compliance Engineer (CCE), with responsibility for monitoring and/or auditing the Design-Builder's construction activities for compliance with the Contract's requirements. • Design Compliance Engineer - The Department's representative with primary responsibility for monitoring and/or auditing the Design-Builder's design and engineering activities for compliance with the Contract's requirements. • Design Compliance Monitor - A representative of the Design Compliance Engineer (DCE), with responsibility for monitoring and/or auditing the Design-Builder's design activities for compliance with the Contract's requirements. • D-B Training slides (see attached, pages 8, 42, and 44). |
| Mitigation | <ul style="list-style-type: none"> • Miscellaneous Requirements: Design-Build has proven to be particularly adaptable to and able to handle miscellaneous project requirements, such as erosion and sediment control, public information, community relations, environmental mitigation, MPT, and maintenance of access. If such issues are a significant element of a project, DB may provide an opportunity for the Department to review and evaluate a number of alternate solutions during the selection process and to benefit from all the good solutions offered by Proposers (including ideas submitted by unsuccessful Proposers) during execution of the Project. • Incentive fee pool amounts for superior performance on such elements as environmental monitoring and mitigation and/or community relations are difficult to calculate. The relative value of their importance calls for judgment on the part of the Department's Project Management Team. Tangible benefits may be difficult to quantify, but the relative importance of such factors is generally easy to determine. If any of the factors is relatively unimportant, there would be no need to provide an incentive fee. • Project Support, including the following: ... d) Environmental mitigation and monitoring, including aesthetics; and • Within Cost Estimating – Engineering and design costs must be considered as well as the costs of additional responsibilities assigned to Design-Builders that are normally performed by the Department in design-bid-build projects (such as, certain QC activities and documentation, public information/community relations, monitoring environmental mitigation, and As-built Plans), and the potential costs associated with risks that have been allocated to the DB contractor. Design-Build Price Proposals are not made on the basis of quantities and Unit Prices, except for a few items (typically Hazardous Materials remediation work). • Within RFP – Project Support (may include environmental mitigation and monitoring and public information/community relations). • The Department cannot require work to be done in accordance with the reference documents. For example, environmental documents included in the reference documents may identify certain mitigation or permit requirements. |

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| | <ul style="list-style-type: none"> • Quality factors for the RFP/Proposal often include the following: ... Project Support (may include environmental mitigation and monitoring, public information/community relations, and community impacts). • Environmental Monitoring and Mitigation (if included in the contract) (PC 4); • Meeting the PCP not only includes accomplishing the physical work, but also performing and documenting associated work such as the specified QC activities and erosion control and environmental mitigation work. • A more complex project’s Quality Plan should address the following: ... Environmental mitigation and monitoring. • Section 10.6.5 Environmental Mitigation – A change in the Work may be deemed to occur if environmental measures are required by the Department or others that are not specified or reasonably implied in the Contract Documents, including the mitigation measures included in the Design-Builder’s Proposal. In other words, if the Design-Builder proposes certain mitigation measures in its Proposal that are not required by the Contract Documents, but subsequently are required by the Department or other agency, the Design-Builder would not be entitled to an Order-on-Contract under the provision. See Exhibit III, Division 2, Part 2, DB Section 104-4.4. • Attachment 4, Risk Identification, Assessment, and Allocation – Mitigation Responsibility is a column populated for each risk. • ALTERNATE PROPOSAL OPPORTUNITIES (for Cut and Cover Tunnel and At-Grade Alternatives) ...MPT criteria (changes to MPT requirements subject to concurrence of certain stakeholders within provisions of EIS mitigation commitments) • D-B Training slides (see attached, pages 8, 15, and 43). |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NYSDOT’s D-B manual provides a thorough documentation of the overall D-B process with enough flexibility to accommodate different types and scales of projects. The templates provided in Volumes II, III, and IV could be replicated for other states.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

As noted through the key word search, monitoring of environmental commitments is a high priority for NYSDOT. The construction compliance monitor position seems to be important to ensure contractor follow-through related to environmental commitments.

- C) Price:
- 1) Total price (it may be beneficial to base the price evaluation on present value for large, multi-year projects to discourage “front-loading” of the Price Proposal);
 - 2) Price reasonableness of specific items, including options;
 - 3) Responsiveness; and
 - 4) Conformity of time-price curve to the work schedule (for larger, more complex projects).

The following are key items to keep in mind when establishing evaluation factors:

- a) Focus on what is important to the Department and other Stakeholders;
- b) Only ask what is necessary to make a decision (consider the cost to prepare Proposals and the cost to evaluate them); and
- c) Direct efforts towards discriminators where the RFP allows Proposers the flexibility to develop different approaches.

4.0 ENVIRONMENTAL DOCUMENTATION AND DESIGN-BUILD PRELIMINARY ENGINEERING

4.1 INTRODUCTION AND CORRELATION OF DESIGN PHASES I THROUGH IV TO DESIGN-BUILD

Design-Build projects, like all other Department projects, require environmental analysis and preparation of environmental documents. The DB process includes DB Subphases IIA-IID, which, except for the elimination of design approval documents and the activities associated with their drafting and approvals, are essentially the same as Design Phases I through IV as delineated in the Project Development Manual with several other exceptions as noted herein.

During DB Subphases IIA_IID, it is important to remember to limit the amount of design work performed to coincide with the level of design required to support the environmental documentation. In a design-bid-build project, the design work performed in connection with the environmental analysis is often performed by the same team who will produce the final design, and therefore it is largely irrelevant to the end product whether work is performed earlier or later—although even for design-bid-build projects the risk of a “no project” decision or an alternative alignment should be considered in deciding whether to spend the Department’s resources on design work relating to a specific alternative. In the case of DB, not only is additional design work unnecessary, but it may also result in the following adverse consequences:

- A) Artificial constraint of options and opportunities for DB innovation and creativity;
- B) Elimination of potential qualified Proposers or creation of a competitive disadvantage if a Proposer’s preferred means and methods are eliminated in the design process; and/or
- C) Duplicative design efforts and associated duplicative expenses, if the selected Design-Builder opts for a different design solution.

4.2 RELEVANCE OF DESIGN PHASES I THROUGH IV ACTIVITIES FOR DESIGN-BUILD

The procedures outlined in the Project Development Manual for Design Phases I through IV for a design-bid-build project are essentially the same (with the exception of no Design Approval) as DB Phase II,

Environmental Process (Subphases IIA through IID), of a DB Project. Note that all references to Design Phases V and VI are not applicable to DB.

DB Subphases IIA through IID can and should progress concurrently with supplemental PE and with development of the procurement and Contract Documents. *See* Figure 1-1 in this DBPM.

The procedural steps of Chapter 4, Sections 4.4 and 4.5, of the Project Development Manual are applicable to DB Projects for Design Phases I through IV only (i.e., DB Subphases IIA through IID). Design Phases V and VI are not applicable for DB. Also, since Design Approval is likewise not applicable to DB, activities related to Design Approval should be replaced with activities aimed at obtaining RFP Approval.

Throughout DB Subphases IIA through IID, the extent of PE done in support of the environmental process needs to be closely coordinated with any supplemental PE for the DB Project (*see* Section 4.3 of this DBPM) and with the risk identification, assessment, and allocation process (*see* Section 3.5 of this DBPM). To the extent feasible, definition of the alternatives and the preferred alternative should allow sufficient flexibility and not unnecessarily constrain design options for the potential Design-Builders. Care should be taken not to negate the advantages in DB by being overly prescriptive and restrictive in DB Subphases IIA through IID.

4.3 SUPPLEMENTAL PRELIMINARY ENGINEERING AND ESTIMATING FOR DESIGN-BUILD

4.3.1 Purpose of Supplemental Preliminary Engineering and Estimating

As noted above during DB Subphases IIA through IID, certain minimum PE work is required to support the environmental documents and analysis. Additional or supplemental PE and estimating may be necessary or desirable to further the Projects goals, to better define the scope and Project criteria/parameters, and/or to support the assessment and allocation of project risks and minimize contingency costs on the part of the Department and the Design-Builder. The engineer's estimate will also serve as the basis for a price analysis prior to Award. For certain projects, some supplemental activities may be advisable to facilitate the overall Project Development Schedule. As a general matter it is the Department's goal to perform and/or complete activities in such a manner so as to allow the Design-Builder to proceed expeditiously once the Project is Awarded.

The focus of the PE effort should be on identifying and defining issues and problems and defining criteria and parameters applicable to Project work. To maximize the benefits of DB, project solutions should be left to the Design-Builder.

4.3.2 Supplemental Data Acquisition

In most DB Projects major risks or unknowns include issues associated with relocation of existing Utilities, subsurface conditions, and Hazardous Materials remediation. While some preliminary information regarding Utility Relocations and Site conditions may have been gathered as part of DB Subphases IIA through IID, it is frequently beneficial to perform additional, more detailed investigations (such as geotechnical investigations, subsurface utility engineering, and pavement subgrade investigations) to provide more information to Proposers regarding existing conditions in order to lessen uncertainty and reduce contingency amounts included in Proposal prices.

Additional drainage studies or data gathering may be necessary, particularly if development has occurred in the Project area subsequent to installation of the existing drainage facilities or if it is desirable to provide joint facilities among agencies.

It may also be desirable to obtain additional information in order to speed up project development. For example, taking geotechnical borings while the RFP is being developed, in lieu of including the borings in the Design-Builder's scope, could shorten the time required to complete the Project.

In some cases it may be desirable to conduct preconstruction condition surveys of buildings and structures to document their condition and provide a basis for settlement of or defense against damage claims during construction.

Decisions regarding steps to be taken to obtain additional data should be guided by the risk identification, assessment, and allocation process outlined in Section 3.5 of this DBPM. As with all other information provided to Proposers, the Department should consider whether the Proposers should be allowed to rely on any additional investigations performed by the Department or whether the results of such investigations should be included in the reference documents.

4.3.3 Supplemental Design, Analysis, and Reports

Limited analysis and design may be desirable to allow the Department to more accurately estimate the design and construction efforts and their associated costs. Care should be taken in developing design information beyond the minimum necessary because of the associated reduction in DB flexibility and increased risk of retained liability.

Due to Project phasing constraints, access requirements, or difficulties with obtaining approvals or defining criteria for obtaining approvals from certain Stakeholders, it may even be necessary to carry the design of certain elements of a Project to a relatively high level of completion; in some cases, to final design. In such cases, the Department project management staff should consult with counsel regarding its ability to transfer responsibility and risk to the Design-Builder for the adequacy and accuracy of the design documents.

4.3.4 Third Party Agreements

Preliminary work to draft and execute agreements relating to the Project can do much to provide for smoother execution of the Project and lessen risk (and contingency costs) to the Department and the Design-Builder. The Contract Documents should specify which of the requirements included in an agreement that are to be carried out by the Design-Builder and which are to be performed by the Department. The agreements themselves should in most cases be included in the RFP either as reference documents or in some instances, contract requirements.

Third party agreements to be included in the RFP may include agreements with:

- A) Utility Owners;
- B) Railroads;
- C) Political subdivisions;
- D) Regulatory agencies; and
- E) Landowners.

4.3.4.1 Utilities

Agreements with Utilities should cover a number of issues that arise during a DB Project. Design-bid-build projects involve the same issues, but the differences in timing of design and construction necessitate different solutions. Issues to be addressed include the following:

- A) Responsibility for design and/or construction with a desirable option of having the Design-Builder design and construct the relocations;
- B) Design requirements and construction specifications;
- C) Betterments, including the approach to determining whether an item is a betterment;
- D) Notifications to the involved parties;
- E) Review of designs and/or cost estimates by the Utility or the Design-Builder, including timelines;
- F) Emergency response actions and timing;
- G) Limitations on timing of construction or interruption of service;
- H) Damage repair;
- I) Inspections and testing by the Utility and/or Design-Builder;
- J) Approvals (including provisions for early start of construction); and
- K) Payment for relocation.

4.3.4.2 Non-Utility Facility Rearrangements

The agreements for local agency non-utility facility rearrangements should cover similar issues as noted for Utilities. Non-utility facility rearrangements could include the relocation or mitigation of impacts to local agency buildings, roads, or pedestrian or bike paths, among others.

It is also desirable to obtain advance agreement regarding the process to be followed for any permits required by local agencies, preferably including an expedited process for issuance of permits, waivers of restrictions on night and weekend work, provisions regarding traffic management, coordination of the work with adjacent projects, and addressing any issues relating to work within local agency rights-of-way.

4.3.4.3 Railroads

If a project interfaces with railroads, advance agreements with the railroad operator can be critical in terms of schedule and costs. While the typical agreement may be similar to a railroad agreement for a design-bid-build project, due to the fast track schedule in DB, the potential impacts of any failure of the railroad operator to cooperate with the Department and its contractors can be costly. Issues to be addressed include the following:

- A) Design criteria and requirements relating to construction on railroad property and for facilities affecting railroad operations;
- B) Investigations to be conducted on railroad property;
- C) Treatment of railroad-related or owned Utilities;
- D) Railroad procedures and schedule for design and construction approval;
- E) Conditions under which construction on railroad property may start prior to completion of design;
- F) Railroad design reviews and construction inspections;
- G) Time periods during which field and construction activities can occur, including designated construction windows;
- H) Operational constraints and requirements for field and construction activities, including flagging responsibility and costs; and

- I) Payments to railroad.

As an example of the differences between DB and design-bid-build projects, railroads typically require their review and approval of 100% design submittals prior to allowing any construction on or over their property. For DB Projects, it would be preferable to obtain railroad agreement to participate in over-the-shoulder Design Reviews and allow construction to commence based on a release for a construction design package rather than requiring a final design.

4.3.4.4 Interagency/Intergovernmental Agreements

When projects are jointly developed (funded) or when different agencies or governmental entities have jurisdiction over portions of the Project, it is advisable to execute a joint agreement among all such entities covering the following:

- A) Applicable criteria and specifications for all components of the Project;
- B) Procedures for implementing changes to the Project;
- C) Approvals of changes desired by one or more parties;
- D) Limits on changes in scope, criteria, or specifications;
- E) Responsibility for cost or credits for changes;
- F) Involvement of parties in Design Reviews and construction inspection;
- G) Designation and authority of representatives of each entity; and
- H) Designation and recognition of the contracting agency and the relationship of other parties with the Design-Builder.

These issues may be similar to those in design-bid-build projects but may be addressed in different ways. The purpose of such agreements is to make the relationship among the various agencies or governmental entities as transparent to the Design-Builder as possible in order to avoid perceived risk and contingency costs. Since the DB contract will be between the Design-Builder and the Department, the Design-Builder only needs to know that the funding is available and should not be concerned with the source of funds. Also, even though different agencies may be responsible for Design Reviews and construction inspection for different portions of the Project, a single process should be specified and followed by all responsible agencies.

4.3.5 Specifications

Additional PE efforts may focus on preparing Performance Specifications and Special Provisions (modifications to the Standard Specifications) specific to the Project.

Performance Specifications focus on defining the design and performance requirements to be met by the Design-Builder while allowing the Design-Builder the latitude to develop the specific means and methods of accomplishing the specified level of performance. Additional information and examples regarding Performance Specifications and Special Provisions for DB are provided in Sections 7.4 and 7.5 of this DBPM and Exhibit III, Division 2, Part 4 – Performance Specifications and Part 5 – Special Provisions.

4.3.6 Permits

Major permits which have not been obtained prior to the due date for Proposals are likely to be considered a major project risk by the Proposers. It is therefore advisable for the Department to take steps to obtain such permits during this phase of project development if not previously obtained during Design Phases I through IV. This is the case even though such permits may normally be obtained during Design Phases V and VI of a design-bid-build project.

It may not be feasible to obtain all permits until after 100% design has been completed. The Department should evaluate the risks associated with such permits and determine whether it wishes to retain responsibility or transfer the responsibility to the Design-Builder. It may be possible to obtain a generic permit covering the major issues, and to delegate responsibility to the Design-Builder to obtain specific permits once the design reaches an appropriate level. Certain other permits may typically be obtained by a contractor on a design-bid-build project after award of the contract. The Department should examine such permits and, if they require long lead times, may wish to work out alternative arrangements in order to expedite the Project schedule. In assessing the value or viability of obtaining a permit prior to award to the Design-Builder, the Department should balance the advantages of obtaining the permit against the disadvantages of producing the higher level of design required to obtain the permit, with reference to the Project goals, the desired allocation of project risk, and the need to provide design flexibility to the Design-Builder.

As noted above, some permits may be best obtained by the Design-Builder or completed based on interim or draft permits obtained by the Department. Where it is not possible to obtain an interim or draft permit, the Department should work with regulatory agencies to facilitate approval of permits prior to advanced levels of design or final design. In some cases agencies will provide the criteria for permit approval and agree to issue the permit once the Design-Builder satisfies those criteria.

4.3.7 Rights-of-Way and Easements

Work on a DB Project performed during Design Phases I through IV includes identification of needed ROW and easements, similar to a design-bid-build project. However, the process for acquisitions is likely to be different for DB Projects, particularly if the Department wishes to award the DB contract soon after issuance of the final environmental decision, and if it is precluded from commencing the acquisition process until after the final environmental decision has been issued. Some of the Department's procedures will likely have to be revised to enable acquisitions to proceed based on the limits identified during Design Phases I through IV or during supplemental PE, instead of basing the acquisition on the final design. In addition, procedures will need to be instituted to allow acquisitions to occur after Advertisement and even after Award of the DB contract. If any parcels remain to be acquired following Award, the RFP should include a ROW acquisition schedule indicating dates when access to properties will be provided by the Department. The Department's Project Manager for the DB Project should notify the Director of the Real Estate Division when a DB Project commences to ensure completion of the ROW identification and acquisition process in accordance with a DB methodology.

For Federal-aid projects, information on the status of ROW must be provided in the RFP indicating either all ROW will be acquired prior to the Award of the contract or all necessary arrangements have been made to acquire the ROW [23 CFR 635.309(p)(1)(vi)]. The Department may elect to have the Design-Builder acquire the ROW, in which case the requirements of 23 CFR 710.313 must be included in the RFP.

In addition, the Contract Documents should specify how acquisition of additional ROW or easements for the benefit of the Design-Builder will be handled. The Department may wish to require the Design-Builder to prepare supporting documentation and, under certain circumstances, to assume responsibility for acquisition costs.

For additional information, *see* Exhibit III, Division 2, Part 2, DB Section 107-22.

4.3.8 Cost Estimating

While preliminary cost estimates will be prepared during Design Phases I through IV, refinements to such estimates will be necessary as the RFP is developed, to ensure that all costs are recognized in the estimate. Cost estimates obtained by the Department for design-bid-build projects are based on: (1) having a design

(plans and specifications); and (2) review of comparable prices for the construction of the design. A different process must be used for DB cost estimates. A DB estimate (engineer's estimate) needs to be developed generally following the same process that will be used by the Proposers—involving selection among different design alternatives, MPT scheme, and means and methods of construction. Engineering and design costs must be considered as well as the costs of additional responsibilities assigned to Design-Builders that are normally performed by the Department in design-bid-build projects (such as, certain QC activities and documentation, public information/community relations, monitoring environmental mitigation, and As-built Plans), and the potential costs associated with risks that have been allocated to the DB contractor. Design-Build Price Proposals are not made on the basis of quantities and Unit Prices, except for a few items (typically Hazardous Materials remediation work). Unit Prices need to be analyzed and adjusted to compensate for the different pricing schemes, responsibilities, and risk allocation associated with DB. For Federal Aid Projects \geq \$500M, a Cost Estimate Review is required. *See* Section 10.2.2 of this DBPM for further discussion of Cost Estimate Reviews.

Additionally, to facilitate analysis and comparison of the Price Proposals, the DB estimate should follow the same format as that required for the Price Proposals.

See Exhibit III, Division 1 - Instructions to Proposers, for the format of the Price Proposal. *See* Section 7.2.9 of this DBPM and Exhibit III, Division 2, Part 2, DB Section 109[S or L] for further discussion of the pricing and payment concepts.

When preparing the cost estimate, the estimator(s) should also determine the appropriate amount to be included in the Contract Price for Interim Payments. *See* Exhibit III, Division 2.

4.3.9 Value Engineering

Value Engineering is a valuable tool for DB Projects, just as it is in design-bid-build.

Significant benefits can often be derived by performing a VE study in the early stages of DB Project development as PE and the environmental documents are being done, project requirements are being defined, and specifications and other contract requirements are being prepared. For Federal-aid DB Projects, the Department is required to perform a VE analysis prior to the release of the RFP (*see* 23 CFR 627.5).

It should be noted that the greatest opportunity for VE in DB occurs during the Proposal preparation process for procurements using a best value as the basis of selection. For such procurements, Proposers essentially go through a VE process as they prepare their Proposals, including analyzing the options to reduce project costs as well as the costs and benefits of quality enhancements. The Department receives full value of the benefits of such work done by the Proposers.

Although the primary opportunity for VE occurs prior to Award of the DB Contract, additional opportunities for VECs existing following contract execution. The Department's standard DB contract provisions provide for VE cost savings to be shared on much the same basis as for design-bid-build projects. This gives the Design-Builder a continuing incentive to look for creative and innovative design solutions as it develops the project design.

5.0 DESIGN-BUILD PROCUREMENT DOCUMENTS

This Section 5.0 covers the various documents to be prepared and issued during the procurement process and those to be used during the actual contract execution phase. *See* Figure 1-1, Department Design-Build Project Development Process and Section 3.8, Table 3.8.



Design-Build



Orientation on Design-Build in Transportation and NYSDOT Design-Build Process

Updated July, 2005

1



NYSDOT Design-Build Training

Three Sessions

First: Orientation on NYSDOT DB Process

- Part I: Overview of Design-Build
- Part II: NYSDOT Design-Build Process

Second: Technical – Procurement

Third: Technical – Award to Contract Closeout



2



NYSDOT Design-Build Training

Three Sessions

**First: Orientation on NYSDOT DB Process*

- Part I: Overview of Design-Build
- Part II: NYSDOT Design-Build Process

Second: Technical – Procurement

Third: Technical – Award to Contract Closeout



* Current Orientation Training

3



Design-Build
Orientation



Part I
Overview of Design-Build

4




Design-Build through
the Ages

- ❖ The Great Pyramids
- ❖ The Parthenon
- ❖ The Great Wall of China
- ❖ The Cathedrals of Europe
- ❖ The Brooklyn Bridge




Robert McManamy, Editor-in-Chief, Design - Build

5



The Owner's Approach

- ❖ The Design-Build Decision
- ❖ Procurement Strategy Development
- ❖ Procurement Process Development
- ❖ Evaluation & Selection
- ❖ Contract Administration



6

Best Practices



The Owner's Approach

DBPM Section 2.0

- ❖ **The Design-Build Decision**
- ❖ Procurement Strategy Development
- ❖ Procurement Process Development
- ❖ Evaluation & Selection
- ❖ Contract Administration



7



The Design-Build Decision

Traditional

- ❖ Big Projects Split ... "Spread the Work"
- ❖ Separate Designer and Contractor
- ❖ Designer ... "Mini-Brooks Bill" (QBS)
- ❖ Full Design Review
- ❖ Owner Owns Design
- ❖ Contractor ... "Low Bid"
- ❖ Owner Manages Interfaces
- ❖ Owner QC / QA
- ❖ Changes & Claims & Litigation



8



The Design-Build Decision

Future Industry Trends

Alternate Delivery Techniques

- ❖ Prequalification
- ❖ Source Selection (Best Value) & QBS
- ❖ Packaging
- ❖ Financing
- ❖ Warranties & Long-Term Maintenance
- ❖ Design-Build & CM at Risk
- ❖ Contractor QC / QA
- ❖ Incentives ... Award Fees
- ❖ Trust ... Partnering



9



The Design-Build Decision

Alternative Delivery Methods

- ❖ Design-Bid-Build
 - ◆ A+B
 - ◆ Lane Rental
 - ◆ Warranties
 - ◆ Lump Sum
 - ◆ Incentive
 - ◆ Time Value
- ❖ CM at Risk
 - ◆ CM / GC
- ❖ Design-Build
 - ◆ DBOM
 - ◆ Low Bid Design-Build
 - ◆ Best Value Design-Build
 - ◆ QBS Design-Build



10



The Design-Build Decision

Reasons for Design-Build

DBPM Section 2.0

- ❖ Early Completion
- ❖ Lower Cost & Certainty of Final Cost
- ❖ Increased Quality
- ❖ Innovation
- ❖ Available Owner Staffing
- ❖ Less Management Effort
- ❖ Less Conflict



11



The Design-Build Decision

Benefits of Design-Build

DBPM Section 2.0

- ❖ Single Source Responsibility / Accountability
- ❖ Less Management / Coordination by Owner
- ❖ Avoid Adversarial Interface / Disputes between Design & Construction
 - ◆ Change Orders Reduced
 - ◆ Claims Reduced
- ❖ Improved Risk Management
- ❖ Time Savings
- ❖ Cost: Savings / Known Early / Certainty
- ❖ Increase in Quality
 - ◆ Innovation / Creativity
 - ◆ Maximize Strength of Contractor



12



The Design-Build Decision

Contractor Concerns

- ❖ "Design-Build only works on 'big' projects."
- ❖ "The 'big' contractors will take all the work."
- ❖ "Won't be able to get a fair subcontract price ... I'll be squeezed"
- ❖ "Don't want to be responsible for design or MPT or quality."



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The Design-Build Decision

Contractor Concerns (continued) ... but

- ❖ "If I could have designed this ..."
- ❖ "I do quality work ... I'm offended by the implication, that I can't be trusted!"
- ❖ "We take 'pride' in our construction."
- ❖ "I welcome the responsibility to plan, design, construct and control this project."



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The Design-Build Decision

Owner Concerns

- ❖ #1: "Quality."
- ❖ "I can't trust a contractor."
- ❖ "My job is to protect the public trust and safety."
- ❖ "We are the only ones that can assure the project is done right."
- ❖ "We'll lose control."



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The Design-Build Decision

Trends (Owners)

DBPM Section 2.0

- ❖ Faster, Better, Less Cost
- ❖ Less Conflict
- ❖ Efficient Management
- ❖ Seeking More Innovation
- ❖ Prequalifying & Shortlisting
- ❖ Selecting on "Best Value"
- ❖ Sharing Risks & Releasing Control
- ❖ Going to "Design-Build"



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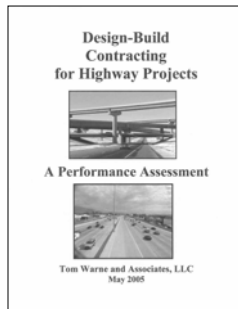


The Design-Build Decision

Recent Study

DBPM Section 2.0

- ❖ 21 Highway Projects
 - ◆ \$83M - \$1.3B
- ❖ Findings:
 - ◆ 76% completed ahead of schedule
 - ◆ 100% ahead of DBB
 - ◆ 1 - 4% growth (5 - 10% DBB)
 - ◆ 38% paid stipends
 - ◆ 100% owner satisfaction



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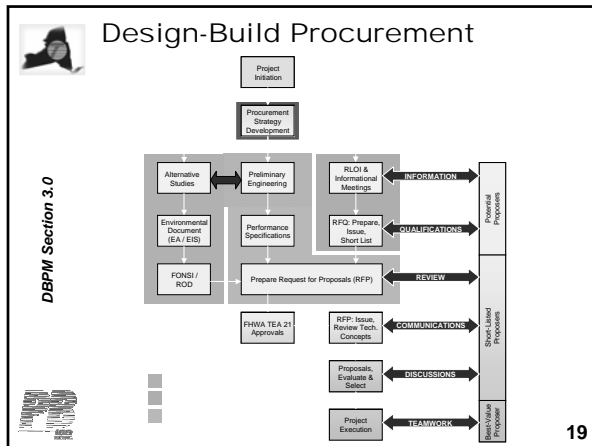
The Owner's Approach

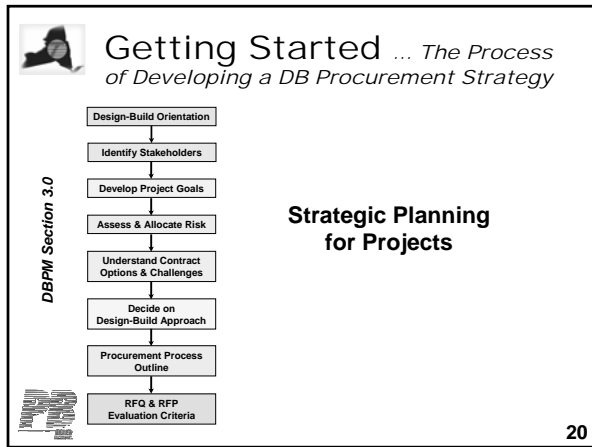
DBPM Section 3.0

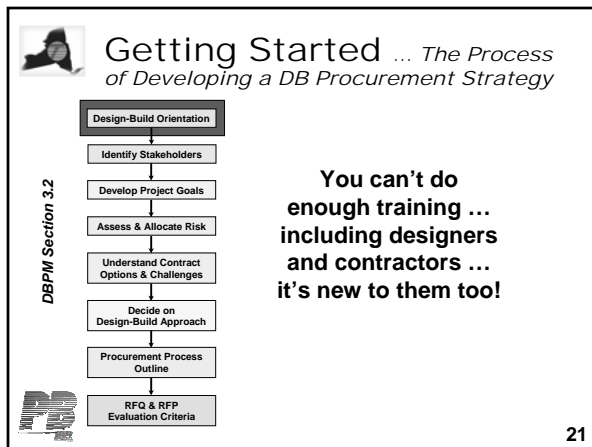
- ❖ The Design-Build Decision
- ❖ Procurement Strategy Development
- ❖ Procurement Process Development
- ❖ Evaluation & Selection
- ❖ Contract Administration



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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.3

Involvement in the Process Builds "Ownership"

Examples:

- FHWA
- RPO
- Cities
- Counties
- COE / EPA
- Coast Guard
- Wildlife; Fish
- Businesses
- Land Owners
- State DEP
- Neighborhood Communities

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.4

Key to the Strategy! "Guides Every Decision"

- TIME
- QUALITY
- COST

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.5

Risk Analysis

| Risk | Effect | Prob. | Impact | Rating | Mitigation |
|----------------|----------------------|-------|--------|--------|--|
| Hazmat | Time/S | 1 | 3 | | Invest/Ana price |
| Utilities | Time/S | | 2 | | Agreement/DB |
| RR | Time | | | | Agreement/Involve |
| MOT | Time/Impact/PR | | | | Stakeholders/peel specs/DB solve (cont. phasing) |
| Expansion | FS & Impact | 2 | 2 | 4 | Study/options/DB |
| Mercy Hospital | Time/S/Future Impact | 2 | 2 | 4 | Coordinate/study/RFP/option/DB |
| ACOE | Time | 2 | 1 | 2 | Monitor |
| ROW | Time | | 2 | 2 | FHWA waiver/RFP |
| EA Delay | Time | 1 | 2 | 2 | Monitor |
| EIS | Time | 1 | | 3 | Monitor/PE/ROW |
| Envir. Prob. | Time/S | 2 | 1 | 2 | RFP/DB |
| Geotech | Time/S | 2 | 2 | 4 | Invest/RFP/DB |

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.6

There are many ways to contract for Design-Build ... some better than others

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Understanding Contracting Options

- ❖ Private Sector vs. Public Sector
- ❖ State and Federal Law ... and Rules and Regs
- ❖ Options ... Some Examples
 1. Competitive Bids (low price)
 2. Competitive Bids w/High Responsibility Standards
 3. Competitive Bids w/Alternative Proposals
 4. Price & Other Factors (without discussions or BAFO)
 5. Price after Discussions and BAFO
 - ➔ 6. Price & Other Factors after Discussions & BAFO ... I.e., Best Value
 7. QBS (w/highest rated proposer) ... Two Phases
 8. Sole Source Negotiating
- ❖ Project Goals & Owner Objectives

DBPM Section 3.6

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.6

Challenges

- Tradition & Culture ... Managing Change ... Traditional Rules & Regulations
- Building Trust
- Instilling Teamwork
- Transfer of Control ... Fear of Loss of Control
- Education & Training
- Stakeholder Concerns ... and Involvement
- Allocating Risks
- Timely Decisions ... Resolve Issues
- Communicate & Communicate

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.7

```

    graph TD
      A[Design-Build Orientation] --> B[Identify Stakeholders]
      B --> C[Develop Project Goals]
      C --> D[Assess & Allocate Risk]
      D --> E[Understand Contract Options & Challenges]
      E --> F[Decide on Design-Build Approach]
      F --> G[Procurement Process Outline]
      G --> H[RFQ & RFP Evaluation Criteria]
  
```

Design-Build is a “different way” of doing business, and there are “different ways” to do the Design-Build Business.



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Deciding on a Design-Build Approach

DBPM Section 3.7

- ❖ Every Design-Build Project is Unique
- ❖ Variations in Approach to DB:
 - ◆ *Bidding to Proposing to Negotiating*
 - ◆ *Low Price to Best Value to QBS to Sole Source*
 - ◆ *Significant to Little to No Preliminary Design*
 - ◆ *Traditional to Shared to No Owner's Risk*
 - ◆ *Prescriptive or Performance Specifications*




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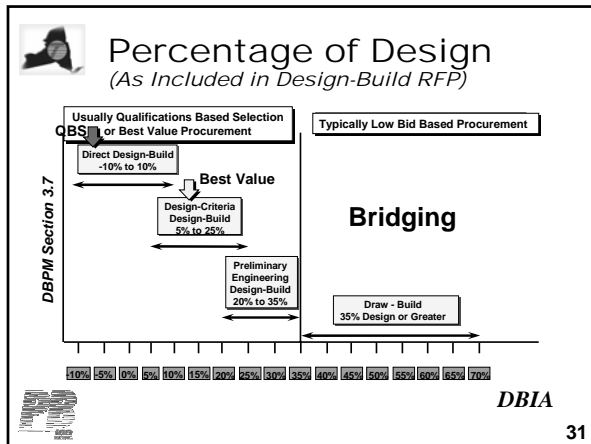
Deciding on a Design-Build Approach

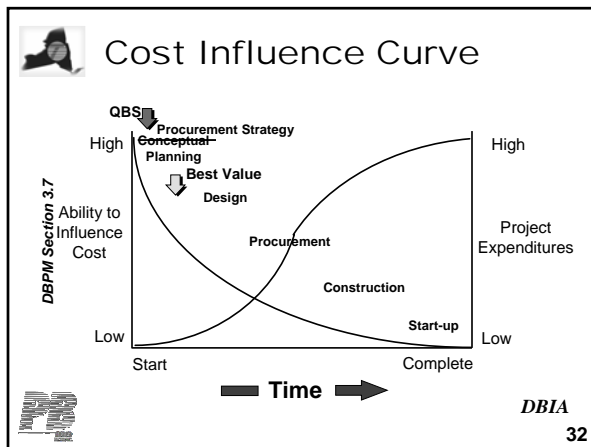
DBPM Section 3.7

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 - ◆ *Prescriptive or Performance Specifications*



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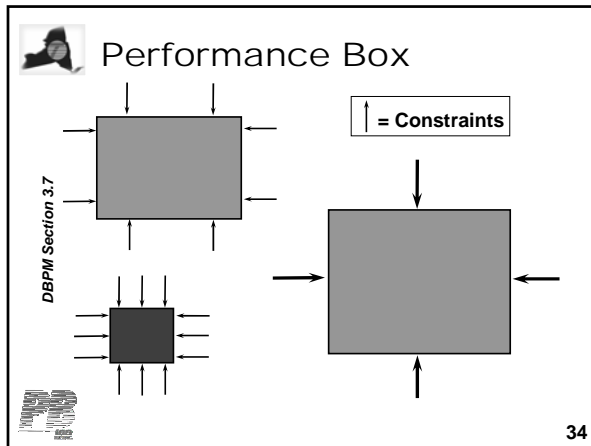
Specifications for Design-Build

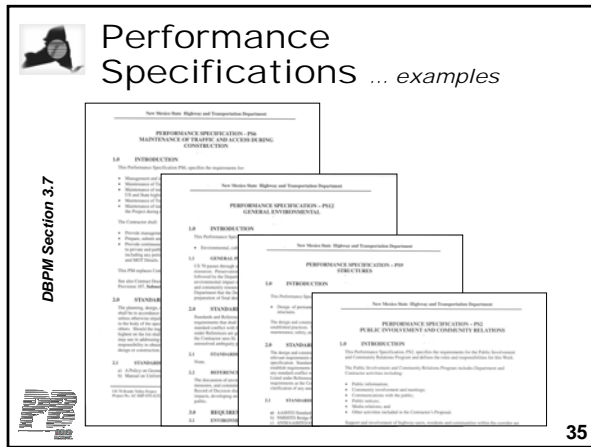
DBPM Section 3.7

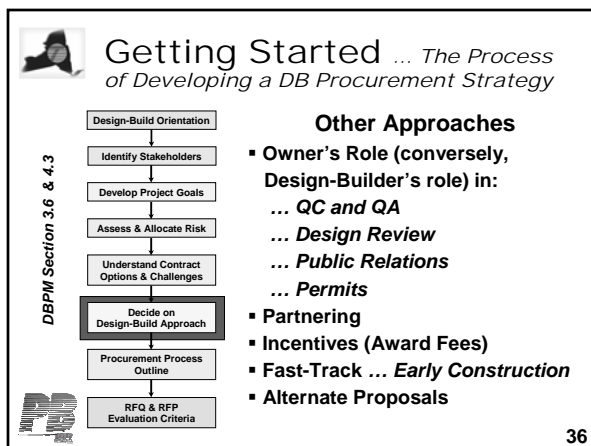
- ❖ Prescriptive vs. Performance
 - ◆ *Prescriptive (traditional)*
 - "How to" do it
 - ◆ *Performance*
 - Define "required results"

DBIA

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.6 & 4.3

Other Approaches ... continued

- Financing
- Warranties/Maintenance
- Utility Agreements
- ... Relocation by DB
- Concurrent ROW
- ... Executed by DB
- RR Coordination
- Community Gateways
- Wrap-up Insurance
- Stipends
- Price Centers

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.7

Additional Approaches ... and challenges

- ❖ Organization to Procure
 - ◆ *It's Different*
- ❖ RFP is the Product
- ❖ Change in Traditions/Culture
 - ◆ *Managing vs. Engineering*
 - ◆ *Defining vs. Problem Solving*
- ❖ Continuous Creativity

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Organization Procurement Process ... Typical

DBPM Section 3.7

Construction Planning

- Performance Specifications
- Prelim. Engr.

Engineering Management

- RFQ & RFP
- Contract
- Eval & Sel

Procurement Management

- Utilities
- ROW
- Railroad

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Continuous Creativity

DBPM Section 3.7

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.8

Typical Steps

- Request for Letters of Interest (RLOI)
- Request for Qualifications (RFQ)
- Informational Meeting
- Short Listing
- Review Draft Request for Proposals (RFP)
- Issue RFP
- Technical / Alternate Concepts Review
- Proposal Evaluation (incl. Alt. Proposals)
- Selection
- Award / Post Award Negotiations
- Contract Execution / Notice to Proceed

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Getting Started ... The Process of Developing a DB Procurement Strategy

DBPM Section 3.9

Starts Preparation of:

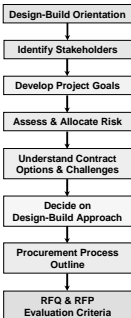
- Evaluation & Selection Plans
- Request for Letters of Interest (RLOI)
- Informational Meeting
- Request for Qualifications (RFQ)
- Request for Proposals (RFP)

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Getting Started ... The Process of Developing a DB Procurement Strategy


DBPM Section 3.0



Products of the Procurement Strategy Workshop:

- List of Stakeholders (with significance)
- Project Goals
- Risk Identification, Assessment, Mitigation & Allocation
- Specific Project Approaches (including specific performance specs)
- Scope of Work for DB Contract
- RFQ and RFP Evaluation Factors
- Future Tasks

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The Owner's Approach

DBPM Section 5.0

- ❖ The Design-Build Decision
- ❖ Procurement Strategy Development
- ❖ Procurement Process Development
- ❖ Evaluation & Selection
- ❖ Contract Administration

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FHWA and Design-Build

FHWA Design-Build Regulations allow:

DBPM Section 5.0

- ❖ Two-Phase Process: I: Short-Listing; II: Proposals (quality & price)
- ❖ Best Value (any combination of quality & price)
- ❖ Performance Specs and Minimum PD / PE
- ❖ Draft RFP Review; Alternate Proposals; Stipends
- ❖ Adjectival Evaluation; Tradeoffs; Discussions; Revised Proposals
- ❖ Negotiations after Selection and Prior to Contract Execution
- ❖ ROW (by Agency or DB'er) after Award; Utility Relocations by DB'er
- ❖ QC / Partial QA by Design-Builder (design & construction)
- ❖ QA Oversight by Owner
- ❖ Long and Short Term Warranties
- ❖ Flexibility in DBE Procedures

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FHWA Practices

FHWA Design-Build Regulations

require:

- ❖ Projects > \$50 Million; SEP-14 Below or Outside
- ❖ Final NEPA Decision Prior to Issuing RFP
- ❖ Approval of RFP Document by FHWA Division Administrator ... *Project Authorization*
- ❖ Verification and IA Testing by STD

anticipate under TEA-21 Reauthorization:

- ❖ No Limitation on Size of Project
- ❖ QBS Design-Build as Experimental Procurement (House)
- ❖ Relaxation of NEPA Restriction (Senate)

DBPM Section 5.0





Transit Design-Build

FTA Circular 4220.1E and BPPM allow:

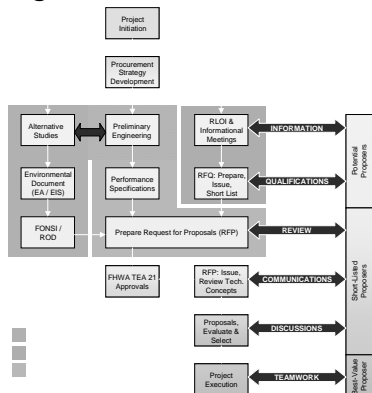
- ❖ Circular 4220.1E (very broad and flexible)
 - ◆ *Design-Build Delivery Method*
 - ◆ *Best Value Selection*
 - ◆ *Competitive Proposal / Request for Proposals Procurement*
 - ◆ *QBS Design-Build (restricted)*
 - ◆ *Options*
 - ◆ *Basically, NO Restrictions on Procurement Details*
- ❖ Best Practices Procurement Manual (BPPM)
 - ◆ *Discourages Point Scoring and Equations*
 - ◆ *Encourages Adjectival Grading and Tradeoff Analysis*
 - ◆ *Discussions and Best and Final Offers*
 - ◆ *Factually Based Selection Decision*

DBPM Section 5.0





Design-Build Procurement



DBPM Section 5.0





Steps in the Procurement Process ... *Recommended*

DBPM Section 5.0

- Request for Letters of Interest (RLOI)
- Request for Qualifications (RFQ)
- Informational Meeting
- Short Listing
- Review Draft Request for Proposals (RFP)
- Issue RFP
- Technical and/or Alternate Concepts Review
- Proposal Evaluation (incl. Alternate Proposals)
- Selection / Award / Post Award Negotiation
- Contract Execution / Notice to Proceed



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The DB Procurement Process ... *What's Different: What's Needed or Required?*

DBPM Section 5.0

❖ Processes and Procedures that:

- ◆ *Are Consistent with:*
 - FHWA Regulations
 - State Law & Regulations
- ◆ *Incorporate "Best Practices" of Design-Build Procurement*



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The DB Procurement Process ... *What's Different?*


DBPM Section 5.0

❖ Basic Documents are:

- ◆ *Request for Letters of Interest (RLOI)*
- ◆ *Request for Qualifications (RFQ)*
- ◆ *Request for Proposals (RFP)*




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Request for Letters of Interest (RLOI) ... Elements

DBPM Section 5.1

- ❖ Contents
 - ◆ *Brief Project Description and Scope of Work*
 - ◆ *Brief Description of Procurement Process*
 - ◆ *"Teamwork" Statement* "... seeking Design-Builders ... committed to quality, have proven experience in design and construction of ... will bring innovative design-build approaches to ensure timely completion ... willing to partner with Department for the mutual success of the Project"
- ❖ Purpose
 - ◆ *Announces Project* ◆ *Facilitates Formation of DB Teams*
 - ◆ *Defines Project*
 - ◆ *Stimulates Interest* ◆ *Provides Contact Info*
 - ◆ *Initiate Communication & Info Exchange*




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Request for Qualifications (RFQ) ... Elements

DBPM Section 5.4

- ❖ Brief Project Description
- ❖ Outline of Overall Procurement Process
 - ◆ *Anticipated E&S Criteria for Proposals*
- ❖ "Rules of the Game"
- ❖ Evaluation and Short List Criteria
- ❖ Information to Submit with Statement of Qualifications (SOQ)
 - ◆ *Forms*




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The DB Procurement Process ... What's Different?

DBPM Section 5.4

- ❖ RFQ Evaluation Factors:
 - ◆ *(Pass/Fail) Legal*
 - ◆ *(Pass/Fail) Financial*
 - ◆ *(Pass/Fail) Responsiveness*
 - ◆ *Organization and Key Managers**
 - ◆ *Experience**
 - ◆ *Past Performance** * *Design and Construction*
 - ◆ *Backlog / Capacity**
 - ◆ *Project Understanding / Plan*



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The Request for Proposals (RFP) ... Elements


❖ Instructions to Proposers

❖ Contract Documents


- ◆ Agreement
 - Project Scope
 - Federal Provisions
- ◆ DB Standard Specifications (DB Section 100)
- ◆ DB Special Provisions (project)
- ◆ DB Standard Specifications (Construction & Materials)
- ◆ Performance Specifications & Design Criteria
- ◆ Requirements (i.e., utilities; environmental)
- ◆ Preliminary Engineering & Design

❖ Reference Documents (Project Data & Info.)

DBPM Section 5.5



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Instructions to Proposers

❖ Factors to be Evaluated

❖ What to Submit (and when)

- ◆ Forms

❖ Criteria Guiding Evaluation


- ◆ "What's Important to Owner"

❖ Ratings Guidelines


❖ How Selection will be Made

❖ Stipend

DBPM Section 6.0



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The Owner's Approach

❖ The Design-Build Decision


❖ Procurement Strategy Development

❖ Procurement Process Development

❖ Evaluation & Selection

❖ Contract Administration

DBPM Section 9.6



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The Evaluation & Selection Process ... *What's Different?*

DBPM Section 9.6

❖ Selection Committees:

- ◆ *Unique to Project*
- ◆ *Legal & Financial (comprehensive)*
- ◆ *Use of Evaluation Teams (subject matter experts ... could include Department, PM consultant, stakeholder, and/or other outside DB experts)*



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The Evaluation & Selection Process ... *What's Different?*

DBPM Section 9.6

❖ The Evaluation Process uses:

- ◆ *Clarifications & Communications*
- ◆ *Adjectival Rating Method*
- ◆ *Recommendations by Evaluation Teams*
- ◆ *Consensus of Committees for:*
 - Quality Ratings for Each Technical Evaluation Factor
 - Overall Technical Quality Rating for Each Proposal
- ◆ *Discussions / Final Proposal Revision (i.e., BAFO)*
- ◆ *Best Value Selection*



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The Evaluation & Selection Process ... *Adjectival Ratings*

EXCEPTIONAL - The Proposer has demonstrated an approach that is considered to significantly exceed stated criteria in a way that is beneficial to the Department. This rating indicates a consistently outstanding level of quality, with very little risk that this Proposer would fail to meet the requirements of the solicitation. There are essentially no weaknesses.

GOOD - The Proposer has demonstrated an approach that is considered to exceed stated criteria. This rating indicates a generally better than acceptable quality, with little risk that this Proposer would fail to meet the requirements of this solicitation. Weaknesses, if any, are very minor.

ACCEPTABLE - The Proposer has demonstrated an approach that is considered to meet the stated criteria. This rating indicates an acceptable level of quality. The Proposal demonstrates a reasonable probability of success. Weaknesses are minor and can be readily corrected.

POTENTIAL TO BECOME ACCEPTABLE - The Proposer has demonstrated an approach that fails to meet stated criteria as there are weaknesses and/or deficiencies, but they are susceptible to correction through discussion. The response is considered marginal in terms of the basic content and/or amount of information provided for evaluation but overall the Proposer is capable of providing an acceptable or better Proposal.

UNACCEPTABLE - The Proposer has demonstrated an approach that indicates significant weaknesses/deficiencies and/or unacceptable quality. The Proposal fails to meet the stated criteria and/or lacks essential information and is conflicting and/or unproductive. There is no reasonable likelihood of success, weaknesses/deficiencies are so major and/or extensive that a major revision to the Proposal would be necessary.

In assigning ratings the Department may assign "+" or "-" (such as "Exceptional -", "Good +", "Acceptable +") to the rating to more clearly differentiate between the proposals.



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The Evaluation & Selection Process ... *What's Different?*

DBPM Section 9.5

- ❖ Evaluation Process Guided by :
 - ◆ *Evaluation & Short-List Plan (RFQ)*
 - ◆ *Evaluation & Selection Plan (RFP)*
- ❖ A Procurement Management Team to Manage Actual Evaluation Process



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"RFP Evaluation & Selection Plans"

DBPM Section 9.5

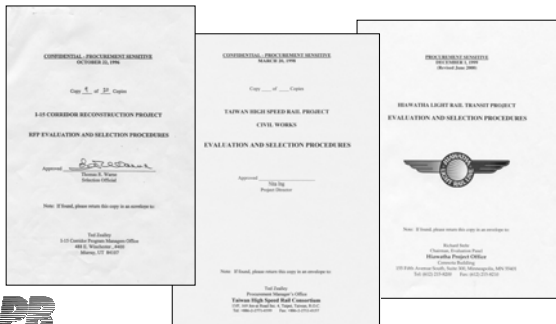
- ❖ Critical to the Discipline, Confidentiality, Fairness, Credibility & Dependability of the Process
- ❖ Modeled after: Federal "Source Selection Plan"
- ❖ Contains all the Functions, Procedures & Guidelines for Everyone in the Process



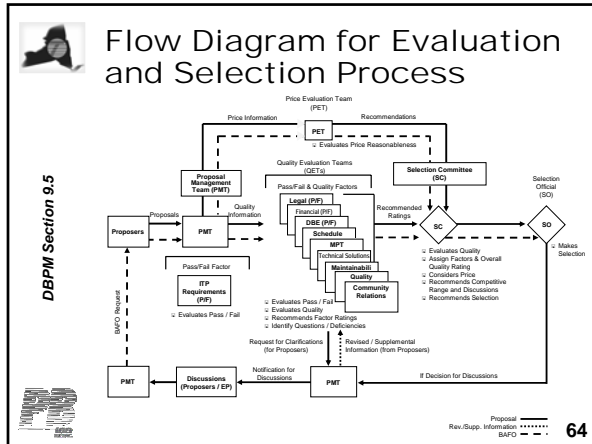
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E&S Plans ... *Examples*



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- ### The Owner's Approach
- DBPM Section 10.0**
- ❖ The Design-Build Decision
 - ❖ Procurement Strategy Development
 - ❖ Procurement Process Development
 - ❖ Evaluation & Selection
 - ❖ Contract Administration
- 65

- ### Keys to Successful Administration
- DBPM Section 10.0**
- ❖ Organize to Do What You've Said
 - ◆ Staff (consistent with QA responsibility)
 - ❖ Be Consistent with the Concepts
 - ◆ Partnering
 - ◆ Fast Track
 - ◆ DB QC - NYSDOT QA [Oversight] (design & construction)
 - ❖ People Continuity
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Keys to Successful Administration *(Continued)*

DBPM Section 10.0

- ❖ Preserve the Trust
- ❖ Foster Teamwork
- ❖ Be Fair & Firm
- ❖ Resolve Issues
- ❖ Don't Slip Back to Traditional
- ❖ More Specifics on NYSDOT Administration Under Part II



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Case Studies



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Case Study



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UDOT's Program Objectives

- ❖ Transform UDOT
- ❖ Resolve Issues ... "No Litigation"
- ❖ Meet UDOT Staffing Goals
- ❖ Reduce Project Management by UDOT
- ❖ Address Public Desires



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The Design-Build Decision

Public Relations Research (1995)

*The public would prefer
a greater level of impact
in exchange for a
shorter construction duration.*



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I-15 Project Goals

❖ TIME

- ◆ Replace Structures Before Failure
- ◆ Public Opinion ... "Faster"
- ◆ 2002 Winter Olympics ... "An End Date"

❖ QUALITY

- ◆ High... Seismic
- ◆ Safe... Maintainable

❖ COST

- ◆ Reasonable



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TIME (I-15)

- ❖ 4 1/2 Years! (Demanding public & 2002 Olympics & Safety)
- ❖ Must provide FLEXIBILITY for Design-Builder to "Plan, Design, Construct, and Control" project
- ❖ FLEXIBILITY Incorporated by:
 - ◆ One contractor
 - ◆ Contractor quality control/quality assurance
 - ◆ Early construction
 - design oversight
 - "over the shoulder"



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QUALITY (I-15)

- ❖ Traditional Techniques not consistent with D-B
- ❖ Quality Incorporated by: "Quality Hooks"
 - ◆ Design-Build with Performance Specs (Up front value engineering)
 - ◆ Best Value (price and other factors)
 - ◆ Long Term Maintenance/Warranty
 - ◆ ISO 9001
 - ◆ Award Fee (\$50 M)
 - ◆ Stipends (\$950 K)



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I-15 Performance Specifications

- | | |
|----------------------|--------------------------------------|
| ❖ Drainage | ❖ Maintenance of Traffic (i.e., MPT) |
| ❖ Roadway Geometrics | ❖ Maintenance During Construction |
| ❖ Geotechnical | ❖ Maintenance After Construction |
| ❖ Water Quality | ❖ ATMS |
| ❖ Lighting | ❖ Concrete Barriers |
| ❖ Pavements | ❖ Landscape & Aesthetics |
| ❖ Signing | |
| ❖ Traffic Signals | |
| ❖ Structures | |



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Lighting ... Performance Specification

- ❖ General Criteria
 - ◆ Design & Construct a Durable Lighting System
 - ◆ Provide Appropriate Illumination
 - ◆ Avoid Light Pollution Outside Corridor
 - ◆ Avoids Disability and Discomfort Glare to Users
 - ◆ Provide for Ease of Maintenance
- ❖ Specific Criteria
 - ◆ AASHTO Guides; National Electric Code
 - ◆ Incorporate ATMS & Aesthetic Requirements
 - ◆ Minimize Lane Closures During Maintenance
 - ◆ Uniformity Ratio of 3:1
 - ◆ Average Lux of 6.5 to 8.6 (maximum 1.85)
 - ◆ Lamp Types as Outlined in FEIS
 - ◆ Use Sylvania, Phillips or GE Lamps!!



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Award Fee

- ❖ Philosophy & Benefits:
 - ◆ Motivates Desired Performance in:
 - Schedule/Completion
 - Quality of Work
 - Management
 - Community Relations & MPT
 - ◆ Positive Means for Achieving Results
 - Financial Incentive to Contractor
 - Consistent with Partnering
 - ◆ Incentivize Performance Throughout Schedule (not just at end)
- ❖ Proven and Successful



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Stipends

- ❖ \$950,000 to Unsuccessful Proposers
- ❖ Recognition of Proposer's Investment
- ❖ Facilitates Quality in the Proposal
- ❖ Ownership of Concepts
- ❖ Encourages Participation in Next DB Project



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COST (I-15)

- ❖ Increased Efficiency (design & construction)
- ❖ Economies of Scale
- ❖ Less Uncertainties/Contingencies
- ❖ Standardization
- ❖ Time is Money
- ❖ Premium for Compressed Schedule



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More Strategy (I-15)

- ❖ Utah Laws
 - ◆ Rules
- ❖ Federal 23CFR & FHWA
 - ◆ Special Experimental Project 14 (SEP-14)
 - ◆ MOU
- ❖ Risk Analysis/Risk Allocation
- ❖ Up front efforts (jump start D-B)
 - ◆ 100% Designs for Early Construction
 - ◆ Refinements to Roadway Geometry
 - ◆ Geotechnical Investigations
 - ◆ Utilities
 - ◆ Drainage
 - ◆ Railroads
 - ◆ ROW (Right of Way)
 - ◆ Maintenance of Traffic (i.e., MPT)
 - ◆ Aesthetics
 - ◆ Environmental Permits



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Risk Allocation (I-15)

| Risk/Responsibility Category | "Traditional" Design-Bid-Build | | Typical Design-Build | | I-15 Design-Build | |
|---|--------------------------------|------------------------------------|------------------------|----------------|-------------------|----------------|
| | Owner | Designer or Constructor | Owner | Design-Builder | Owner | Design-Builder |
| Final Alignment Geometry | X | | | X | | X |
| Geotechnical Data | X | | | X | X | |
| Environmental Permits | X | X | | X | X | |
| Design Criteria | X | | X | | X | |
| Design Defects | X | | | X | | X |
| Constructibility of Design | X | | | X | | X |
| Obtaining ROW | X | | | X | X | |
| Coordinating with Utilities & Railroads | | | | X | Agreements | Coordination |
| Quality Control and Quality Assurance | | Significant inspection and testing | Quality of Workmanship | Oversight only | X | Oversight Only |
| Coordination with other work | X | | | X | | X |



81



Utilities

- ❖ 1500 Crossings
- ❖ 600 Potential Conflicts/Relocations
- ❖ 40 Utility Owners
- ❖ Agreements in Place



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Utilities (continued)

Design and Construction of Utility Work

| Number | Utility Owner | Name | Type | Who Does the Work? | |
|---------|--|--|---------|--------------------|--------------|
| | | | | Design | Construction |
| 1 | Coburn & McElroy Ingoten Company | IR | DB | DB | |
| 2 | Ingoten Cable Television | CTV | DB | DB | |
| 3 | Moore City | SS, SS, WTR | DB | DB | |
| 4 (163) | Moore Park Paddy Company | DB | DB | DB | |
| 4 | Moore City Sewer / Water | SS, SS, WTR | DB | DB | |
| 7 | Moore City Power - Operations | EL | Utility | Utility/DB | |
| 8 | Shel Lake City - Dept. of Public Utilities | SS, SS, WTR | DB | DB | |
| 9 | Shel Lake City Suburban Services Dist. #1 | SS | DB | DB | |
| 10 | Shel Lake City Suburban Dist. Sewer Dist. #2 | SS | Utility | DB | |
| 11 | Shel Lake County | SS | DB | DB | |
| 12 | St. Charles Sewer and Dist. No. 1 | SS | Utility | DB | |
| 13 | St. Charles Water Conservancy District | SS | DB | DB | |
| 14 | Steady City | SS, SS, WTR | DB | DB | |
| 16 | Steady Education Dist. District | DB | Utility | DB | |
| 16 | City of Steady - Justice | SS, SS, WTR | DB | DB | |
| 17 | Steady Shel Lake City | SS, SS, WTR | DB | DB | |
| 18 | TCO Communications | CTV | Utility | Utility | |
| 19 | US West Communications | Tel | DB | DB | |
| 20 | Utah Power | EL | Utility | Utility | |
| 21 | WSP | No utility conflicts identified at this time | | | |
| 22 | MCI | FO | DB | DB | |
| 23 | US Sprint | FO | DB | DB | |
| 24 | Ball Canyon Ingoten Company | No utility conflicts identified at this time | | | |
| 25 | Big Bend Ingoten Company | IR | DB | DB | |
| 26 | East Jordan Ingoten Company | IR | DB | DB | |
| 27 | Moore Ingoten Company | IR | DB | DB | |
| 28 | Moore & East Jordan Ingoten Company | IR | DB | DB | |
| 29 | Quest | FO | DB | DB | |
| 30 | AMSCO Oil Company | DB | DB | DB | |
| 31 | Fluorocarbon | FO | DB | DB | |
| 32 | Brooks Fiber Properties | FO | DB | DB | |
| 33 | Taligent Communications Group | No utility conflicts identified at this time | | | |
| 34 | Greenway Telecommunications | No utility conflicts identified at this time | | | |
| 35 | Chadron Irrigation Dist | SS | Utility | DB | |
| 40 | Moore City - Communications - Computer work only | FO | DB | DB | |
| 40 | Moore City | FO | DB | DB | |
| 41 | Headline | FO | DB | DB | |
| 42 | Central Valley Water Reclamation | SS | DB | DB | |



83



ROW Traditional Design/Build

- ❖ Appraisals begin only AFTER all funding available → Began appraisals in anticipation of funding
- ❖ Acquisition STARTS at 100% design → Acquisition started during RFP development ... obtained rights of entry & Options
- ❖ IFB AFTER all land is acquired → Acquired land through first year of design & construction
- ❖ 3 years (162 parcels) → 18-20 (concurrent) months



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Other Concepts (I-15)

- ❖ Partnering ... "Issue Resolution"
- ❖ OCIP (Owner Controlled Insurance Program)
 - ◆ (Cost Avoidance: \$ 20 -25 M)
- ❖ Expedited Payment
 - ◆ (Cost Avoidance : \$ 30 M)
- ❖ Public Information Program
- ❖ 4 CD-ROMS
- ❖ Subcontracting



85



More Challenges (I-15)

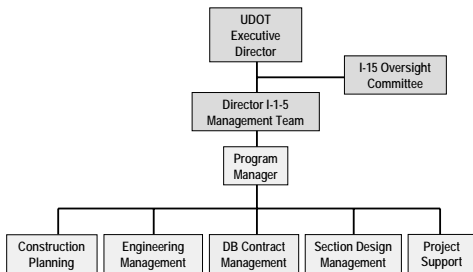
- ❖ Procurement Organization
- ❖ Concrete vs. Asphalt
- ❖ MPT
- ❖ Aesthetics & Landscaping
- ❖ Cost Estimate
- ❖ Long-Term Maintenance & Warranty
- ❖ Continuous Creativity



86



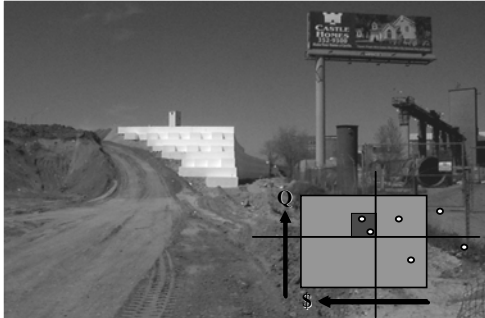
Organization Procurement Process ... Utah I-15



87



Continuous Creativity



88



Steps in the Procurement Process (1-15)

- ❖ Request for Letters of Interest (RLOI) ❖ Mar 96
- ❖ Informational Meeting ❖ 15 May 96
- ❖ Request for Qualifications (RFQ) ❖ 30 May 96
- ❖ Selection of Prequalified ❖ 18 Jul 96
- ❖ Develop Request for Proposals (RFP) ❖ Feb-Sep 96
- ❖ Review Draft RFP ❖ Aug-Sep 96
- ❖ Issue RFP ❖ 1 Oct 96
- ❖ Technical Concepts Review ❖ 23 Oct-1 Dec 96
- ❖ Receive Proposals ❖ 15 Jan 97
- ❖ Evaluation of Proposals (initial) ❖ Jan-Feb 97
- ❖ Discussion & BAFO (if required) ❖ Feb-Mar 97
- ❖ Best Value Selection ❖ Apr 97
- ❖ Award/Notice to Proceed (NTP) ❖ 15 Apr 97

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Evaluation Factors

- ❖ Technical Solutions
 - ◆ Maintenance of Traffic (i.e., MPT)
 - ◆ Geotechnical
 - ◆ Structures
 - ◆ Pavement
 - ◆ Maintainability
 - ◆ Other: Aesthetics, Drainage, Roadway Geometry, Lighting, Traffic Signals, Signing, Water Quality, Harmful/Hazardous Materials Remediation, Concrete Barriers, & ATMS
- ❖ Work Plan/Schedule
- ❖ Management
- ❖ Organizational Qualifications
- ❖ Price

90





Technical Proposal

3.5.4 EVALUATION FACTORS

The technical and price proposals are **approximately equal in weight**.

The Technical Proposal is composed of the following four technical factors listed in **descending order of importance**:

- Technical Solutions
- Work Plan/Schedule
- Management
- Organizational Qualifications

Technical Solutions are broken down further into the following six technical subfactors. **All six are of equal weight**.

- Maintenance of Traffic
- Geotechnical
- Structures
- Pavement
- Maintainability
- Others, in **three levels of significance**:
 - High:** ATMS, Drainage and Water Quality, Roadway Geometrics
 - Intermediate:** Aesthetics, Lighting, Traffic Signals, Signing (evaluated together)
 - Low:** Concrete Barriers, Harmful/Hazardous Materials Remediation



Technical Proposal Ratings Guidelines

EXCEPTIONAL: The proposer has demonstrated an approach which is considered to significantly exceed stated requirements/objectives in a beneficial way and provides a consistently outstanding level of quality. There is very little or no risk that this proposer would fail to meet the requirements of the solicitation. There are essentially no weaknesses.

GOOD: The proposer has demonstrated an approach which is considered to exceed stated requirements/objectives and offers a generally better than acceptable quality. There is little risk that this proposer would fail to meet the requirements of the solicitation. Weaknesses, if any, are very minor.

ACCEPTABLE: The proposer has demonstrated an approach which is considered to meet the stated requirements/objectives and has an acceptable level of quality. The proposal demonstrates a reasonable probability of success. Weaknesses are minor and can be readily corrected.

SUSCEPTIBLE TO BECOMING ACCEPTABLE: The proposer has demonstrated an approach which fails to meet stated requirements/objectives as there are weaknesses and/or deficiencies, but they are susceptible to correction through discussion. The response is considered marginal in terms of the basic content and/or amount of information provided for evaluation but overall the proposer is capable of providing an acceptable or better proposal.

UNACCEPTABLE: The proposer has demonstrated an approach which contains significant weaknesses/deficiencies and/or unacceptable quality. The proposal fails to meet the stated requirements/objectives and/or lacks essential information and is conflicting and/or unproductive. There is no reasonable likelihood of success; weaknesses/deficiencies are so major and/or extensive that a major revision to the proposal would be necessary.



Evaluation Matrix

EVALUATION MATRIX

Technical Factors
Descending Order of Importance

| Proposer | TEB | Org. Qual. | Work Plan/Schedule | Technical Solutions |
|------------------|-----|------------|--------------------|---------------------|
| Laker Brownville | A* | G* | G* | A* |
| Still Lake | G* | G* | A* | G* |
| Wauatch | E* | G* | G* | E* |

Technical Subfactors
Equal Weight

| Proposer | TEB | Org. Qual. | Work Plan/Schedule | Technical Solutions | Other |
|------------------|-----|------------|--------------------|---------------------|-------|
| Laker Brownville | A* | A* | A* | G* | G* |
| Still Lake | G* | G* | G* | E* | A* |
| Wauatch | E* | E* | G* | E* | E* |

Other Technical Subfactors
High Significance to Low Significance

| Proposer | TEB | Org. Qual. | Work Plan/Schedule | Technical Solutions | Other | TEB | Org. Qual. | Work Plan/Schedule | Technical Solutions | Other |
|------------------|-----|------------|--------------------|---------------------|-------|-----|------------|--------------------|---------------------|-------|
| Laker Brownville | G* | E* | A* | A* | G* | G* | E* | G* | E* | G* |
| Still Lake | A* | G* | G* | G* | A* | E* | A* | E* | A* | G* |
| Wauatch | E* | E* | G* | E* | E* | A* | A* | A* | A* | E* |

* Initial rating shown in parenthesis if rating was adjusted during BAFO evaluation

 I-15 MPT Plan
(Wasatch Proposal)




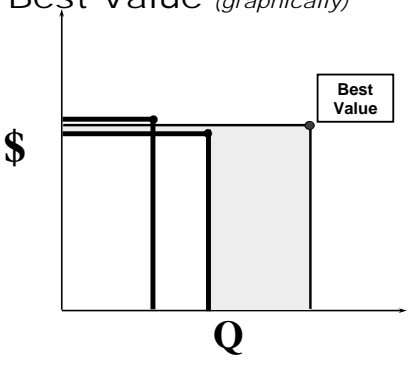
94

 Re-striping of I-215 (West)



95

 Best Value (graphically)



96



Utah's I-15 ... Design-Build Approach Summary

- ❖ FLEXIBILITY for Design-Builder to "Plan, Design, Construct, and Control" Project
- ❖ One Contractor
- ❖ Performance Specifications
- ❖ Proposals & Best Value Selection
- ❖ Little Overall Preliminary Design / Engineering
- ❖ Shared Risk
- ❖ Contractor Quality Control / Quality Assurance
- ❖ Provisions for Early Construction



97



I-15 Reconstruction

... Salt Lake City, Utah



- 5 Months Ahead of Schedule
- \$ 30 Million under Budget
- No Claims



- ❖ \$1.325 Billion ... 4 ½ Years
- ❖ 16 Miles ... 142 Bridge Structures
 - ◆ 3 Interstate Junctions
 - ◆ 9 SPUI Interchanges
 - ◆ Valley-wide ATMS
- ❖ Innovative Procurement
- ❖ Best Value Selection
 - ◆ Highest Quality
 - ◆ Second Lowest Price
 - ◆ Adjectival Ratings
- ❖ Critical Project Goals:
 - ◆ Complete Before Olympics
 - ◆ High Quality ... Seismic
 - ◆ Safe ... Maintainable

98



US 70 Widening

... Hondo Valley, New Mexico



- ❖ \$130 Million
- ❖ 38 Miles ... 5 Bridges
 - ◆ 14 Stakeholders
 - ◆ Environmentally Sensitive
- ❖ Best Value Selection
 - ◆ To Other Than Low Price
 - ◆ Adjectival Ratings
- ❖ Critical Project Goals:
 - ◆ Award by June 2002
 - ◆ Completion NLT Sept 2004
 - ◆ High Quality
 - ◆ Under Budget

99



Admiral Clarey Bridge


... Ford Island, Hawaii



- ❖ \$80 Million Max. (sale of property)
- ❖ Effectively a "Design Competition"
- ❖ "Creative Stipend & Geotech "
- ❖ Best Value Selection
 - ◆ \$68.5 Million (lowest price)
 - ◆ Highest Quality
 - ◆ Adjectival Ratings
- ❖ Added Additional Lane for \$10 M
- ❖ Critical Project Goals:
 - ◆ Design and Cost




100




Cooper River Bridge

... Replacement Project, Charleston, SC




Current



Future

- ❖ \$531 Million
 - ◆ \$119M less than DBB Estimate
- ❖ Main Span:
 - ◆ 1,546 Ft Long – 186 Ft High
 - ◆ 1,000 Ft Navigational Channel
 - ◆ Longest Cable-Stayed Span in North America
- ❖ Fast-Track 5-Year Completion
- ❖ Critical Project Goals:
 - ◆ Quality (signature design), Cost and Time



101



I-285 Bridge Structures

... RW and TW Expansion at Atlanta Airport



- ❖ \$159 Million
 - ◆ \$91M less than DBB Estimate
 - ◆ \$20M below Next Lowest
- ❖ Best Value Selection
 - ◆ Lowest Price
 - ◆ Innovative Design Solutions for Ventilation, Abutments and RW-TW Surface/Bridge Decks
- ❖ Fast-Track 3-Year Completion
- ❖ Critical Project Goals:
 - ◆ Time and Cost



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Bath-Woolwich Bridge


... New Bridge Replacement, Bath, ME



- ❖ \$62 Million
- ❖ Best Value Selection
 - ◆ High Quality and Low Price
- ❖ Critical Project Goals:
 - ◆ Speed of Procurement ... Early Price Saved \$38M in Discretionary Bridge Funds
 - ◆ Saved 2 Years Off Traditional Delivery
 - ◆ Pier and Segmental Girder Design Innovation ... a Bonus





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Toll Roads

(Transportation Corridor Agencies)
... Orange County, California





- ❖ San Joaquin Hills
 - ◆ \$813 Million
 - ◆ 15 Miles; 58 Bridges; 10 Interchanges
 - ◆ Completed 3 Months Early
- ❖ Eastern
 - ◆ \$750 Million
 - ◆ 28.5 Miles; 63 Bridges; 9 Interchanges
 - ◆ \$114 Million below Budget
 - ◆ Completed 12 Months Early
- ❖ Foot Hill-South
 - ◆ \$600 Million (estimate)
 - ◆ 16 Miles; 16 Bridges; 5 Interchanges
 - ◆ Quality Based Selection

Currently in Phase 1 →




104




Alameda Corridor


... Long Beach, California



- ❖ \$770 Million ... 5 years (2006)
- ❖ Midcorridor Trench (10 miles)
 - ◆ Two Rail Tracks & Access Road
 - ◆ Track for Entire Corridor
 - ◆ 2/3 of Program (\$)
 - ◆ First ACTA Design-Build
 - ◆ 19 other D-B-B Contracts
- ❖ Best Value Selection
 - ◆ 2nd Highest Quality / Lowest Price
- ❖ Critical Project Goals:
 - ◆ Time
 - ◆ Min. Impact to Community, Public
 - ◆ Quality Project within Budget




105




T-REX


... Denver, Colorado



- ❖ \$1.186 Billion ... 5 years (2006)
- ❖ Highway & Light Rail
 - ◆ 17 Miles I-25 / I-225
 - ◆ 19 Miles Double Track
 - ◆ First Major CDOT Design-Build
- ❖ Best Value Selection
 - ◆ 2nd Highest Quality / Lowest Price
 - ◆ Adjectival Ratings
- ❖ Critical Project Goals:
 - ◆ Fully Operational (June 2008)
 - ◆ Min. Impact to Community, Public
 - ◆ Quality Project within Budget






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T-REX

Plan View






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State Highway 130


...Austin, Texas



- ❖ \$1.36 Billion ... Toll Road
- ❖ 90 Miles
 - ◆ 4-Lanes (expandable to 6)
 - ◆ 15-Year Provision for Maintenance
 - ◆ First TxDOT Design-Build
- ❖ Best Value Selection
 - ◆ Best Long-Term Value (concrete)
- ❖ Critical Project Goals:
 - ◆ Time (compressed time from 25 years to less than 5 years)
 - ◆ Environmentally Sensitive
 - ◆ Transfer Responsibility / Liability




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Carolina Bays Parkway

...Myrtle Beach, South Carolina




- ❖ \$240 Million
 - ◆ 20 Miles
 - ◆ Six Lanes
 - ◆ 36 Bridges
- ❖ Best Value Selection
 - ◆ Max. Stipulated Sum
 - ◆ Scope Adds
 - ◆ "Added Value" Options
- ❖ Environmentally Sensitive
- ❖ Completed in 27 Months
 - ◆ 7 Months Early
 - ◆ 7 Years Ahead of DBB

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Carolina Bays Parkway

The roadway travels through an environmentally sensitive area. "Carolina bays" are isolated wetlands in natural shallow depressions that are largely supported by rain and shallow groundwater. The wetlands are a habitat for a wide range of wildlife, including such animals as frogs, salamanders, turtles, snakes, and alligatoric birds including herons, egrets, and migratory wildfowl; and such mammals as deer, raccoons, skunks, and opossums. Additionally, the wetlands provide erosion control, water purification, and flood control. The U.S. Army Corps of Engineers permit for the project defined a basic "footprint" of the impacted wetland area. A key goal was not to exceed this footprint, and if possible, reduce the total acres of impacted wetlands.




Carolina Bays Parkway bridge crossing environmentally-critical wetlands area



Carolina Bays Parkway bridge crossing Atlantic Intracoastal Waterway

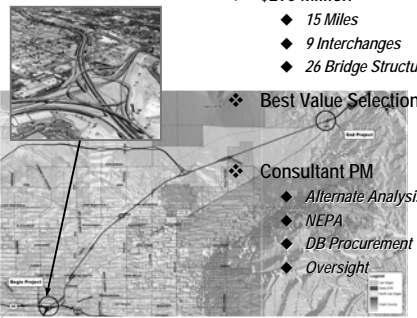
UNDER PROMISING AND OVER DELIVERING
While the Carolina Bays Parkway was the second design-build project completed by SCDDOT, it was the first design-build project that included design, right-of-way, significant risk sharing, utility relocation, and construction services under a single contract. The Carolina Bays Parkway was open to traffic on December 17, 2002, over seven months ahead of the revised project schedule that incorporated SCDDOT options and change orders. The final contract price was \$253.9 million, a 5.8 percent growth over the project budget. This modest increase reflected additional scope changes by SCDDOT or change orders requested by other agencies and municipalities. Moreover, the project not only minimized wetlands impact, but also ultimately resulted in fewer acres of impacted wetlands than allowed under the Corps of Engineers permit. Environmental agencies permit to this project as a "showcase project" of how to navigate a project through an environmentally sensitive area.

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I-15 North Widening

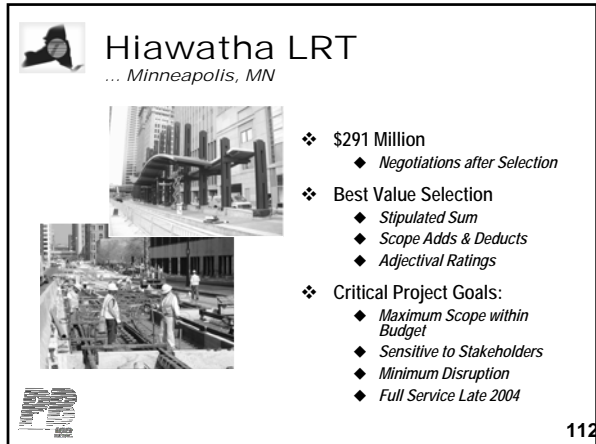
... Las Vegas, Nevada




- ❖ \$290 Million
 - ◆ 15 Miles
 - ◆ 9 Interchanges
 - ◆ 26 Bridge Structures
- ❖ Best Value Selection
- ❖ Consultant PM
 - ◆ Alternate Analysis
 - ◆ NEPA
 - ◆ DB Procurement
 - ◆ Oversight

Current Work

111



Hiawatha LRT
... Minneapolis, MN




- ❖ \$291 Million
 - ◆ *Negotiations after Selection*
- ❖ Best Value Selection
 - ◆ *Stipulated Sum*
 - ◆ *Scope Adds & Deducts*
 - ◆ *Adjectival Ratings*
- ❖ Critical Project Goals:
 - ◆ *Maximum Scope within Budget*
 - ◆ *Sensitive to Stakeholders*
 - ◆ *Minimum Disruption*
 - ◆ *Full Service Late 2004*

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University & Medical Center LRT ... Salt Lake City, UT



- ❖ \$208 Million
 - ◆ *Negotiations after Selection*
 - ◆ *Used Provisional Sums*
- ❖ Best Value Selection
 - ◆ *Option to add Medical Center*
 - ◆ *Adjectival Ratings*
- ❖ Critical Project Goals:
 - ◆ *University: Before Olympics*
 - ◆ *University: Obtain Funding*
 - ◆ *MC: Low Cost / Get Funding*

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AirTrain LRT
... Elevated Transit to JFK Airport



- ❖ \$930 Million
 - ◆ *8-Mile Elevated Track*
 - ◆ *DBOM Contract*
- ❖ Best Value Selection
 - ◆ *Two Short Lists*
 - ◆ *Negotiations after Selection*
 - ◆ *High Quality / Lowest Price*
- ❖ Critical Project Goals:
 - ◆ *Service Proven Technology*
 - ◆ *Within Budget*

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Successful Design-Build

The Successful Owner's Approach

DBPM Section 3.0

- ❖ Develop a Procurement Strategy "First"
 - ◆ *Project Goals are the "Key"*
 - ◆ *Decide on a Design-Build Approach*
- ❖ Embrace "Teamwork & Trust"
- ❖ Encourage Creativity
- ❖ Manage Cultural Change
- ❖ Administer Consistent with Strategy



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Successful Design-Build

The Contractor's Perspective

- ❖ Well Planned Procurement Strategy and Process
 - ◆ *Communicated Well; Understood; Fair*
 - ◆ *Performance Specs; Flexibility*
 - ◆ *Opportunity for Innovation & Creativity*
 - ◆ *Best Value Selection*
- ❖ Be Serious about "Teamwork & Trust"
- ❖ Provide Positive Incentives
- ❖ Recognize "Different Way of Doing Business" When Administering Contract



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Design-Build Orientation



Part II NYSDOT Design-Build Process

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Development of NYSDOT's Design-Build Process

NYSDOT's Design-Build Process

- ❖ Review of Existing NYSDOT Policies & Procedures
- ❖ Industry Research of Design-Build Practices: *Design-Build Practice Report*
- ❖ Recommended Process for Design-Build: *Design-Build Process Report*
- ❖ Supporting and Related Documents for Design-Build Procurement Process and Revised NYSDOT Manuals and Procedures: *Design-Build Procedures Manual (includes guidance, templates, forms and Design-Build Standard Specifications)*
- ❖ Training



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Design-Build Procedures Manual – Volume I ... Contents

NYSDOT's Design-Build Process

- Guidance to Department Staff in Procuring Design-Build
- ❖ The Design-Build Decision
 - ❖ Project Procurement Strategy
 - ❖ Environmental Documents & Preliminary Engineering
 - ❖ Request for Letters of Interest (RLOI)
 - ❖ Informational Meeting
 - ❖ Request for Qualifications (RFQ) & Short Listing
 - ❖ Request for Proposals (RFP) ... (review and issuance)
 - ❖ Proposal Evaluation
 - ❖ Best Value Selection
 - ❖ Design-Build Project Execution



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Design-Build Procedures Manual – Exhibits ... Contents

NYSDOT's Design-Build Process

- ❖ Sample of RLOI
- ❖ Sample of RFQ
- ❖ Sample of RFP
 - ◆ *Instructions to Proposers (including forms)*
 - ◆ *Design-Build Agreement (template)*
 - ◆ *Design-Build Standard Specifications (Section 100)*
 - ◆ *Sample Design Requirements*
 - ◆ *Sample Performance Specifications*
 - ◆ *Sample Design-Build Specifications*
 - ◆ *Sample Design-Build Utility Requirements*
- ❖ Sample Evaluation and Selection Plans
 - ◆ *Statement of Qualification (SOQ)*
 - ◆ *Proposal*
- ❖ Sample Forms for Department Use



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Project Procurement Strategy

DBPM Provides Basic Strategy

Each Project Unique

- ◆ **Project Stakeholders**
- ◆ **Project Goals**
- ◆ **Project Risks & Challenges**
- ◆ **Project Specific Approaches**
 - ➔ Preliminary Engineering
 - ➔ Utilities / Right-of-Way
 - ➔ Incentives / Warranties
 - ➔ Insurance / Public Relations
 - ➔ Alternate Proposals / (others)
- ◆ **Project Evaluation Criteria**

NYS DOT's Design-Build Process DBPM Section 2.0 & 3.0

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Relation to Current Procedures

NYS DOT's Design-Build Process DBPM Section 1.2 & Figure 1-1

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Contract Administration

... Overview (Roles)

- ❖ **Design-Builder... responsible for:**
 - ◆ *Planning, scheduling, designing, constructing, managing and controlling the work;*
 - ◆ *QC (new definition)*
- ❖ **Department ... responsible for:**
 - ◆ *Oversight Management*
 - ◆ *QA (new definition)*

NYS DOT's Design-Build Process DBPM Section 10.1

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Contract Administration

... QA / QC

NYS DOT's Design-Build Process
DBPM Section 10.1

❖ Quality Control (QC)

- ◆ Responsibility of Design-Builder
- ◆ Includes traditional QC plus some traditional QA
- ◆ Design: "... procedures for design quality; checking; design review ... and approval of Working Plans."
- ◆ Construction: "... procedures for Materials handling and construction quality; Inspection, sampling and testing of Materials, plants, production and construction; Material certifications; calibration and maintenance of Equipment; and monitoring of environmental compliance."
- ◆ Documentation of All QC Design and Construction



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Contract Administration

... QA / QC

NYS DOT's Design-Build Process
DBPM Section 10.1

❖ Quality Assurance (QA)

- ◆ Responsibility of Department
- ◆ Oversight to Provide Confidence that Design-Builder is Performing to Quality Plan
- ◆ Design: "... monitoring and verification ... through auditing, spot-checking, and participation in the review of the design."
- ◆ Construction: "... monitoring and verification ... through auditing, spot inspections, and Verification Sampling and Testing ..."
- ◆ Independent Assurance & Documentation of QA
- ◆ Final Inspection and Acceptance



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Contract Administration

... Design Review

NYS DOT's Design-Build Process
DBPM Section 10.4

❖ Fully Defined in DB Section 111

❖ Design-Builder Responsible for:

- ◆ Design Quality Control Plan
- ◆ Conducting Design Review of:
 - Preliminary Design
 - Readiness for Construction or Interim Design
 - Final Design
 - Working Plans
- ◆ Signing and Stamping of Drawings



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Contract Administration

... Design Review (continued)

NYS DOT's Design-Build Process
DBPM Section 10.4

- ❖ Department Responsible for:
 - ◆ Participating in Design Review
 - ◆ Providing "Consultation and Written Comment" ... Department does not Approve Design Prior to As-Built Plans.
 - ◆ Non-Conformance Reports
 - ◆ Conducting Design Review and Approval of As-Built Plans



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Contract Administration

... Construction Oversight

NYS DOT's Design-Build Process
DBPM Section 10.5

- ❖ Fully Defined in DB Section 112
- ❖ Responsibility of Department
- ❖ More Efficient use of Staff
- ❖ Elements:
 - ◆ Facilitates Design-Builder's Success
 - ◆ Empowered to Resolve Issues
 - ◆ Use of Verification, Auditing & Checking Techniques
 - ◆ Verification & IA Sampling & Testing
 - ◆ QA Documentation
 - ◆ Final Inspection and Acceptance



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Contract Administration

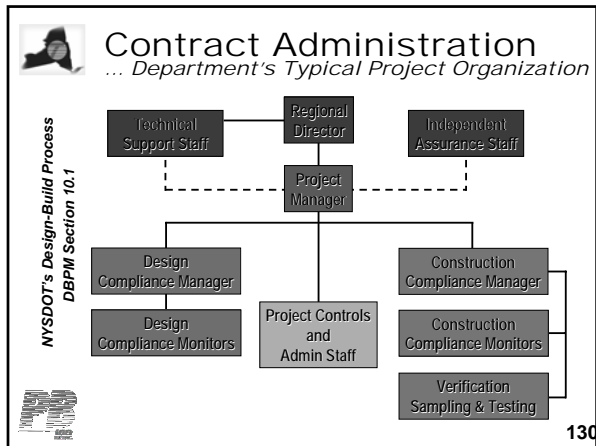
... Changes and Orders on Contract

NYS DOT's Design-Build Process
DBPM Section 10.6

- ❖ Mechanics the Same; Justifications Different
- ❖ Most Changes are Derived Based on Incorrect or Erroneous Information Provided in Contract:
 - ◆ EX: Faulty Warranted Geotechnical Investigation Data
 - ◆ Significant Changes in Character of the Work
 - ◆ Necessary Basic Project Configuration Change
 - ◆ Changes in Environmental Mitigation
 - ◆ Accuracy of Existing Utility Relocations
 - ◆ Significant Variation in Harmful/Hazardous Materials
 - ◆ Inaccuracies in Preliminary Design
- ❖ Site Conditions Different from Those that could be Reasonably Discerned from an Inspection of the Site



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NYS DOT Design-Build Training

Three Sessions

First: Orientation on NYS DOT DB Process

- Part I: Overview of Design-Build
- Part II: NYS DOT Design-Build Process

* *Second: Technical – Procurement*

* *Third: Technical – Award to Contract Closeout*

* Future Detailed Training

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Design-Build Orientation

QUESTIONS?

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North Carolina

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No, but they do have a page for D-B letting. NCDOT has two levels of D-B projects: D-B and Express D-B. They also have P3 projects.

The Design-Build process involves a two-stage evaluation process, which consists of shortlisting contractors and determining the best value proposal by evaluating proposed designs. The Express Design-Build Program is also a two-stage process, but is reserved for bridge replacement and other small projects and selection is made based on the lowest bid.

<https://connect.ncdot.gov/letting/Pages/Design-Build.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. This is more of a checklist of what needs to be included in the design plans. The NC Turnpike Authority has DB Submittal Guidelines.

<https://www.ncdot.gov/projects/triangleexpressway/TriangleExpresswayLandscape/download/RoadwayDesignGuidelinesJuly2008.pdf>

<https://www.ncdot.gov/projects/triangleexpressway/TriangleExpresswayLandscape/download/2008DesignBuildSubmittalGuidelines112309.pdf>

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence in NCDOT D-B Guidelines |
|---------------------|---|
| NEPA | No |
| Environment | ENSURE PLANS INCLUDE ANY "ENVIRONMENTAL COMMITMENTS". |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | ADDITIONAL RIGHT OF WAY REQUIREMENTS TO ACCOMMODATE NOISE ABATEMENT MEASURES HAVE BEEN INVESTIGATED |
| Species | No |
| Stormwater | No. |
| Erosion | <ul style="list-style-type: none"> • TEMPORARY EROSION CONTROL MEASURES SHOWN THAT AFFECT RIGHT OF WAY OR EASEMENTS • ADEQUATE CONSTRUCTION AREAS ARE AVAILABLE FOR DRAINAGE AND EROSION CONTROL MEASURES • LANDSCAPE AND EROSION CONTROL ITEMS ARE INCLUDED |
| Permit | COORDINATE FINAL PLANS TO ENSURE COMPLIANCE WITH PERMIT |
| Commitment | ENSURE PLANS INCLUDE ANY "ENVIRONMENTAL COMMITMENTS". |

| | |
|------------|---|
| Compliance | <ul style="list-style-type: none"> Design criteria not in compliance with AASHTO standards should be brought to the Department’s attention for evaluation of a design exception prior to incorporation in the design. COORDINATE FINAL PLANS TO ENSURE COMPLIANCE WITH PERMIT |
| Monitor | No |
| Mitigation | No |

| Keyword | Presence in NCTA D-B Submittal Guidelines |
|---------------------|---|
| NEPA | No |
| Environment | <ul style="list-style-type: none"> The submittal process is geared for rapid review, while ensuring that the project is safe, environmentally conscious, satisfies all national and state codes and manuals, and fulfills the requirements set forth in the Request for Proposals. Roadside Environmental Unit (If construction phasing is required) [Upon acceptance from the NCTA, the Design-Build Team shall provide a report signed and sealed by a Professional Engineer registered in the State of North Carolina for each of the Units noted below, for informational purposes only.] |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | Two mentions related to noise walls. Most relevant is that culvert and noise wall plans may be submitted in one stage. |
| Species | No |
| Stormwater | No |
| Erosion | In the Erosion Control Design section with instructions and checklists. This is provided on pages 41-44 of the guidelines. A PDF of the section is attached to this template. |
| Permit | <ul style="list-style-type: none"> The NCDOT Hydraulics Unit also reviews key submittals for permit application packages. The Design-Build Team is solely responsible for ensuring that the design plans exactly match those details included in the permit impact sheets. 4C and / or Permit Application / Modification Review Submittal - This submittal shall include all necessary documents required for a permit application including, but not necessarily limited to a cover letter, meeting minutes, plans, permit impact sheets, and forms. Unless otherwise stated in the RFP, this package shall be submitted a minimum of five weeks prior to the intended permit application submittal date or 4C meeting, as applicable. Upon acceptance from the NCTA, submit one set of half-size plans and permit impact sheets for each of the above Units and for each of the following agencies. This submittal shall provide adequate time for the NCTA to forward the plans and permit impact sheets |

| | |
|------------|--|
| | <p>to the agencies for their receipt a minimum of two weeks prior to the 4C meeting.</p> <ul style="list-style-type: none"> • 100% Final Grade Erosion Control Plans, Prerequisites: <ul style="list-style-type: none"> ○ Accepted Final Roadway Plans and x-sections when the Design-Build Team is acquiring the permit ○ Accepted 100% Hydraulic Plans when the Design-Build Team is acquiring the permit |
| Commitment | No |
| Compliance | <ul style="list-style-type: none"> • Unless otherwise noted herein or in the Final Contract scopes of work, submittals will be reviewed within 10 working days (15 working days for temporary structures, overhead sign assemblies, MSE walls, FEMA compliance documents and temporary shoring) from the date of the NCTA's receipt. • Mechanical, Electrical, Plumbing and Monitoring Systems: Code compliance shall be provided by submission of final code documentation. |
| Monitor | In the Mechanical, Electrical, Plumbing and Monitoring Systems section with instructions and checklists. This is provided on pages 48-49 of the guidelines. A PDF of the section is attached to this template. |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The “guidelines” are a checklist for what should be included in plans. No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

ORT AND RELATED FACILITIES – MECHANICAL, ELECTRICAL, PLUMBING AND MONITORING SYSTEM

This submittal shall include Structural, Electrical, HVAC, and Mechanical/Plumbing plans. Provide design calculations including lighting, HVAC and electrical for all components. All designs, plans and calculations shall be signed and sealed by a Professional Engineer registered in the State of North Carolina.

Each of the submittals listed below shall have the following prerequisites and distribution:

Prerequisites:

- Accepted Roadway RFC Plans

Total Number Required: (6 Full-size and 5 Half-size)

- NCTA Project Manager (2 Full-size and 2 Half-size)
 - Sent directly by the DBT
- NCTA Director of Construction (4 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (2 Half-size)
- FHWA, if applicable (1 Half-size)

Mechanical, Electrical, Plumbing and Monitoring Systems / 25% Plans

This submittal shall contain, at a minimum:

1. Code Review – Submit a complete Code Review indicating how each code requirement is to be met.
2. Life-cycle Mechanical Analysis – Provide a 10 year life-cycle costs analysis comparing possible mechanical systems using electric, natural gas and propane alternatives for final selection of HVAC System.
3. Utilities – Provide written report regarding the availability of electrical, water and sewer utilities for each proposed site, as applicable.
4. Monitoring System design schematic including details for operation of mechanical systems (i.e. HVAC, alarm, electrical).

Mechanical, Electrical, Plumbing and Monitoring Systems / 75% Plans

In addition to the above, submit the following items. These drawings shall include as a minimum, but not limited to:

1. HVAC equipment plans and sections, including ductwork, louvers and exterior mounted equipment locations.
2. Electrical power, lighting, emergency, and communications systems.
3. Plumbing plans.
4. Standby generator and propane storage tank locations.
5. Monitoring system configuration, controllers, and devices utilized for connection to mechanical systems.
6. Monitoring system communication details including router hardware, and schedule and alarm programs.

Calculations & Equipment Cuts – the Design-Build Team shall submit mechanical and electrical calculations and shall include as a minimum, but not be limited to, the following information:

1. Proposed mechanical, electrical and plumbing fixture and equipment cuts.
2. HVAC load calculations based on the building envelope.
3. Lighting point-by-point calculations for exterior and interior lighting.
4. Standby generator load calculations.
5. Electrical service sizing calculations

Mechanical, Electrical, Plumbing and Monitoring Systems / 100% Plans

In addition to the above, the Design Build-Team shall submit all the final detailed construction drawings and all associated details. All previous NCTA comments shall be addressed. In addition to the above, submit the following items

1. Graphical User Interface (GUI) software application details
2. Listing of special tools and testing equipment required for operation, installation, and maintenance of the equipment.
3. Code compliance shall be provided by submission of final code documentation.
4. Final calculations and equipment cuts.

EROSION CONTROL DESIGN

All Erosion and Sedimentation Control Plans must be reviewed and accepted by the NCTA for each distinct project section before **any** land disturbing activities, including clearing and grubbing, can commence on that project section. The RFC Final Grade Erosion Control Plans may only be deemed final after the roadway drainage design has been finalized and accepted by the NCTA. Specifically, acceptance of all Erosion Control submittals, prior to and including the RFC Final Grade Erosion Control Plans, shall be contingent on acceptance of the roadway drainage design. Design modifications developed after acceptance of the RFC Final Grade Erosion Control Plans shall require the Design-Build Team to submit Intermediate Erosion Control Plans for review and acceptance as noted below. Each plan submittal must include all pertinent design information required for review, such as design calculations, drainage areas, etc.

The NCTA will provide a sample set of Erosion and Sedimentation Control plans and MicroStation Erosion Control workspace to the Design-Build Team upon request. The Design-Build Team shall coordinate a pre-design meeting between the NCDOT REU Soil and Water Engineering Section, the NCTA, the Design-Build Team and other pertinent personnel before beginning the erosion control design. The NCTA shall only review Erosion and Sediment Control Plans after the aforementioned pre-design meeting. Release for Construction (RFC) Final Grade Erosion Control Plans shall be accepted by the NCTA and submitted to all personnel listed below before **any** land disturbing activities, including clearing and grubbing, shall commence.

75% Clearing & Grubbing Review Plans

Prerequisites:

- ❑ Accepted Roadway Line and Grade or Preliminary Roadway Plans and x-sections
- ❑ Pre-design meeting with the NCDOT REU Soil and Water Engineering Section, the NCTA, the Design-Build Team and any other pertinent personnel
- ❑ Provide one set of half-size Roadway Plans, that delineate the proposed slope / stake lines, and x-sections to both the NCTA and the Alternative Delivery Unit concurrently with this submittal

Total Number Required: (2 Full-size and 4 Half-size)

- NCTA Project Manager (1 Full-size)
 - Sent directly by the DBT
- NCTA Director of Construction (1 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (4 Half-size)

100% Clearing & Grubbing Review Plans

Prerequisites:

- Provide one set of half-size Roadway Plans, that delineate the proposed slope / stake lines, and x-sections to both the NCTA and the Alternative Delivery Unit concurrently with this submittal

Total Number Required: (2 Full-size and 4 Half-size)

- NCTA Project Manager (1 Full-size)
 - Sent directly by the DBT
- NCTA Director of Construction (1 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (4 Half-size)

RFC Clearing & Grubbing Plans

Prerequisites:

- Provide one set of half-size Roadway Plans, that delineate the proposed slope / stake lines and drainage, as well as x-sections to both the NCTA and the Alternative Delivery Unit concurrently with this submittal

Total Number Required: (3 Full-size and 5 Half-size)

- NCTA Project Manager (2 Full-size and 1 Half-size)
 - Sent directly by the DBT
- NCTA Director of Construction (1 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (4 Half-size)

75% Final Grade Erosion Control Plans

Prerequisites:

- Provide one set of half-size Roadway Plans, that delineate the proposed slope / stake lines and drainage, as well as x-sections to both the NCTA and the Alternative Delivery Unit concurrently with this submittal

Total Number Required: (2 Full-size and 4 Half-size)

- NCTA Project Manager (1 Full-size)
 - Sent directly by the DBT
- NCTA Director of Construction (1 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (4 Half-size)

100% Final Grade Erosion Control Plans

Prerequisites:

- Accepted Final Roadway Plans and x-sections when the Design-Build Team is acquiring the permit
- Accepted 100% Hydraulic Plans when the Design-Build Team is acquiring the permit
- Provide one set of half-size Roadway Plans, that delineate the proposed slope / stake lines and drainage, as well as x-sections to both the NCTA and the Alternative Delivery Unit concurrently with this submittal

Total Number Required: (2 Full-size and 4 Half-size)

- NCTA Project Manager (1 Full-size)
 - Sent directly by the DBT
- NCTA Director of Construction (1 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (4 Half-size)

RFC Final Grade Erosion Control Plans

This submittal shall include seven sets of Project Special Provisions. Erosion Control Special Provisions are available through the NCDOT website.

Total Number Required: (4 Full-size and 6 Half-size)

- NCTA Project Manager (3 Full-size and 3 Half-size)
 - Sent directly by the DBT
- NCTA Director of Construction (1 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (4 Half-size)

Intermediate Plans (if required)

This submittal shall be required if design modifications and / or site conditions require additional erosion control design or design revisions to the RFC Clearing and Grubbing and / or the RFC Final Grade Erosion Control Plans. This submittal shall also be required to review all basins requiring individual calculations. The NCTA shall review and accept Intermediate Plans prior to construction of any aspect impacted by the revised erosion control design.

Prerequisites:

- Accepted Roadway and / or Hydraulic Plans of the design modifications
- Provide one set of half-size Roadway Plans, that delineate the proposed slope / stake lines and drainage, as well as x-sections to both the NCTA and the Alternative Delivery Unit concurrently with this submittal
- Provide one set of basin calculations to both the NCTA and the Alternative Delivery Unit concurrently with this submittal

Total Number Required: (4 Full-size and 6 Half-size)

- NCTA Project Manager (3 Full-size and 3 Half-size)
 - Sent directly by the DBT
- NCTA Director of Construction (1 Full-size)
 - Sent directly by the DBT
- Alternative Delivery Unit (4 Half-size)

North Dakota

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. North Dakota is not authorized to use design-build for transportation projects.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Ohio

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes. It is housed under the Division of Construction Management. This site includes consultant-contractor pairings, example projects, example proposals and scopes of work, and a manual for “least cost D-B scope”. Based on the website, Ohio DOT uses least cost and value based selection criteria depending on the type of project.

http://www.dot.state.oh.us/divisions/constructionmgt/design-build/Pages/Design_Build.aspx

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. It is called the “Design-Build Manual and Instructions for completing the Scope of Services form”. The website also includes a word document entitled “Value Based Design Build Selection Criteria”, but there is not a separate manual. The selection criteria document includes mentions of a demonstration of meeting environmental commitments; however, it does not include monitoring of environmental commitments.

http://www.dot.state.oh.us/Divisions/ConstructionMgt/design-build/DesignBuild/Design_Build_scope_manual_4-17-09.pdf

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence in Design-Build Manual and Instructions for completing the Scope of Services form |
|-------------|--|
| NEPA | In general, NEPA approval is required prior to award of the design-build contract. |
| Environment | <ul style="list-style-type: none"> • The type and amount of environmental resources (streams, wetlands, cultural resources, threatened and endangered species, etc.) impacted by a project can significantly affect project costs, schedule, and mitigation requirements. • Under Design-Build project selection considerations – Projects which qualify for an environmental Categorical Exclusion. • Under Hazardous Materials – For all options, at least 10 working days before operations begin, the DBT shall complete an Ohio Environmental Protection Agency (OEPA) „Notification of Demolition and Renovation“ form and submit this to the local air pollution control division, if delegated, or OEPA. • Section 10. ENVIRONMENTAL – District should make sure that all necessary permit applications have been submitted, approved and available for review if requested by the bidders. In general, NEPA approval is required prior to award of the design-build contract. The scope preparer should determine a project impact area for the design build project. This area will be sized to accommodate a “worst case scenario” from an environmental perspective. It will include all anticipated work areas (including temporary work areas). Assume that all environmental resources within the project impact area will be negatively impacted. A waterway permit determination will be completed by ODOT prior to scope approval. |

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| | <ul style="list-style-type: none"> • Should the project meet the requirements of the US Army Corps of Engineers (USACE) Nationwide Permit Program, the State of Ohio Department of Transportation Regional General Permit, of a Category 1 or 2 Isolated Wetland Permit The Office of Environmental Services/ Waterway Permits Unit (OES/WPU) will process the permit and provide the Special Condition Package to the Project Manager and the District Environmental Coordinator for inclusion in the Scope of Services Form. • Should the project require an Individual 404 Permit, a 401 Water Quality Certification, or a Category 3 Isolated Wetland Permit the DBT will be scoped to prepare the permit applications subject to OES/WPU review, comment and approval. The permit application(s) shall be developed in compliance with latest version of the ODOT Waterway Permit Manual. • Any required compensatory mitigation for impacts to streams, wetlands, or endangered species will be defined by the OES/WPU at the time of the permit determination. The OES/WPU will coordinate and submit all complete permit applications, including the mitigation plans to the USACE and Ohio EPA. List all permits and their approval dates in this section of the scope. • Regarding Coordination – Local officials - police, fire, hospitals, schools, environmental agencies, utilities, toll facilities, ferries, railroads, airports, ... • Attach copies of project map, environmental documents, railroad agreements, survey notes, etc. as needed. |
| Cultural (resource) | <ul style="list-style-type: none"> • The type and amount of environmental resources (streams, wetlands, cultural resources, threatened and endangered species, etc.) impacted by a project can significantly affect project costs, schedule, and mitigation requirements. • Regarding Flat Sheet Signs – Optional signs that are to be included should be sufficiently described. This includes destination signs, cross road and side road intersection warning signs, other warning signs, generator signs, and recreational and cultural interest area signs. • Regarding “Extrusheet Signs” – Optional signs that are to be included should be sufficiently described. This includes additional advance guide signs, generator signs, and recreational and cultural interest area signs. |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <ul style="list-style-type: none"> • Noise Barrier - fill in the project specific requirements for each sub-section: <ul style="list-style-type: none"> ○ General Noise Barrier Requirements: ○ Noise Barrier Panels and Posts: Initial soil exploration data shall be provided by the Department. Collection of additional soils information shall be the responsibility of the DBT and considered incidental to the design effort. |

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| | <ul style="list-style-type: none"> ○ Noise Barrier Bearing Pad and Block Riser ○ Noise Barrier Foundations ○ Specific Barrier Description ○ Other Noise Barrier Requirements |
| Species | <ul style="list-style-type: none"> ● The type and amount of environmental resources (streams, wetlands, cultural resources, threatened and endangered species, etc.) impacted by a project can significantly affect project costs, schedule, and mitigation requirements. ● Any required compensatory mitigation for impacts to streams, wetlands, or endangered species will be defined by the OES/WPU at the time of the permit determination. |
| Stormwater | No |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> ● District should make sure that all necessary permit applications have been submitted, approved and available for review if requested by the bidders. ● A waterway permit determination will be completed by ODOT prior to scope approval. ● Should the project meet the requirements of the US Army Corps of Engineers (USACE) Nationwide Permit Program, the State of Ohio Department of Transportation Regional General Permit, of a Category 1 or 2 Isolated Wetland Permit The Office of Environmental Services/ Waterway Permits Unit (OES/WPU) will process the permit and provide the Special Condition Package to the Project Manager and the District Environmental Coordinator for inclusion in the Scope of Services Form. ● Should the project require an Individual 404 Permit, a 401 Water Quality Certification, or a Category 3 Isolated Wetland Permit the DBT will be scoped to prepare the permit applications subject to OES/WPU review, comment and approval. The permit application(s) shall be developed in compliance with latest version of the ODOT Waterway Permit Manual. Any required compensatory mitigation for impacts to streams, wetlands, or endangered species will be defined by the OES/WPU at the time of the permit determination. ● The OES/WPU will coordinate and submit all complete permit applications, including the mitigation plans to the USACE and Ohio EPA. ● List all permits and their approval dates in this section of the scope. ● Regarding Coordination – ...Intra-agency coordination - maintenance crews, permits section, adjacent projects, |
| Commitment | No |
| Compliance | The permit application(s) shall be developed in compliance with latest version of the ODOT Waterway Permit Manual |
| Monitor | No |
| Mitigation | <ul style="list-style-type: none"> ● The type and amount of environmental resources (streams, wetlands, cultural resources, threatened and endangered species, etc.) |

| | |
|--|--|
| | <p>impacted by a project can significantly affect project costs, schedule, and mitigation requirements.</p> <ul style="list-style-type: none"> • Any required compensatory mitigation for impacts to streams, wetlands, or endangered species will be defined by the OES/WPU at the time of the permit determination. • The OES/WPU will coordinate and submit all complete permit applications, including the mitigation plans to the USACE and Ohio EPA. |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The guidelines outline requirements related to waters of the U.S. permitting and the differences between nationwide and individual permits. It appears that Ohio DOT retains responsibility for permitting. It also appears that Ohio DOT favors projects with little to no environmental impacts (i.e., environmentally cleared via CE) for D-B.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Oklahoma

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Oregon

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes. They have an Alternative Contracting page housed within Project Letting. ODOT has Design-Build and Design-Build Low Bid programs.

<http://www.oregon.gov/ODOT/Business/Pages/Alternative-Contracting.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No. While ODOT does not have a guidebook or manual, the Alternative Contracting webpage provides the following information about D-B and D-B Low Bid.

Design-Build

Design-build is a procurement method in which ODOT contracts with a single entity with needed design and construction capability to perform the project, including all design, construction, and contract administration. The agency retains oversight of the design-build contract. This type of contracting can be advantageous in a number of instances, with one of its main strengths being its ability to effectively implement schedule critical projects.

The agency invites contracting entities to submit proposals for the design and construction of the project. The agency will perform approximately 15 to 30 percent of the initial design, and may provide some conceptual plans in order to accurately relay the intent of the contract. The design-build proposers submit proposals for design, construction, time, and cost to perform all aspects of the project. The proposals are evaluated based on quality and price, and the best value proposer is awarded the contract. The agency then provides oversight during design and construction.

The design-build procurement method is very complex and requires additional staff time to draft and manage additional procurement documents and perform proposal evaluations and scoring.

ODOT uses unique and dedicated design-build general provisions (DB General Provisions) boilerplates that are specifically written to provide the terms and conditions under which the bidding requirements, evaluation, and award are conducted, and the design and construction work for all design-build projects are performed. The DB General Provisions replace the ODOT Standard Specifications part 00100s.

ODOT utilizes the following DB General Provisions, Standard Specifications and Special Provisions for its design-build program:

- DB General Provisions Boilerplate: Consists of sections 110 through 199
- DB Standard Specifications: Consists of parts 00200 through 03000 of the Oregon Standard Specifications for Construction
- DB Standard Special Provisions: Consists of ODOT-supplied additions and revisions to the DB Standard Specifications

Links to these general provisions and specifications are provided below.

Design-Build Low Bid

Design-Build Low Bid provides a more streamlined means for delivery than is presently available in Design-Build Basic. The primary differences between DB Basic and DB Low Bid are the allocation of responsibility and risk, and the award criteria. DB Low Bid places more responsibility on the agency in regard to quality, environmental permitting and compliance, and third party conflict resolutions.

DB Low Bid provides flexibility to do more projects with less cost and/or the potential for “fast-tracking” the delivery. DB Low Bid should be easier and less expensive for the designer, the contractor or builder and ODOT.

General Provisions Boilerplate – <http://www.oregon.gov/ODOT/Business/Pages/Boilerplate-SP-2018.aspx>

*Key word search not tabulated. None of the provisions were specific to D-B.

2018 Standard Specifications for Construction – http://www.oregon.gov/ODOT/Business/Documents/2018_STANDARD_SPECIFICATIONS.pdf

*Key word search not tabulated. None of the specifications were specific to D-B.

2018 Boiler Plate Special Provisions – <http://www.oregon.gov/ODOT/Business/Pages/Boilerplate-SP-2018.aspx>

*Key word search not tabulated. None of the special provisions were specific to D-B.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|-----------------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

Pennsylvania

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes. Pennsylvania DOT has a P3 page housed within Projects & Programs.

<http://www.penndot.gov/ProjectAndPrograms/p3forpa/Pages/default.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes. Act 88 of 2012, Providing for Public Private Transportation Partnerships: Implementation Manual & Guidelines. Updated in 2015.

<http://www.penndot.gov/ProjectAndPrograms/p3forpa/Documents/P3%20Implementation%20Manual%20and%20Guidelines%20Amended%20November%202015.pdf>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|--|
| NEPA | No |
| Environment | <ul style="list-style-type: none"> • Act 88 allows a Proprietary Public Entity to agree to pay or reimburse a Development Entity for actual costs associated with the remediation of existing environmental contamination on, under or emanating from the real property associated with a P3 Transportation Project. Costs associated with contamination of the property that occurs after the date the Development Entity assumes responsibility for the project cannot be reimbursed. • Unsolicited proposal requirements, Project Description – Information to the extent available on the Department and/or prospective Proprietary Public Entity’s performance of its environmental review responsibilities. • High level screening analysis – Ability to meet Commonwealth and/or Public Entity transportation, economic development and environmental goals • Detailed level screening analysis – This may involve additional planning, engineering, travel demand, environmental and financial analyses to further define a project. • Analyzing compliance with Federal and Commonwealth environmental and transportation planning requirements and verifying that the project’s scope and schedule is consistent with these requirements • Conducting a risk assessment of key project elements including environmental, scope and design elements, schedule, costs and revenue estimates • The Department, Public Entity and P3 Office perform project development activities (e.g., geotech, survey, project procurement/delivery strategy, environmental, preliminary engineering, and risk analysis) • Information and materials that may be provided and discussed during Industry Review Meetings may also include updated project |

| | |
|---------------------|--|
| | <p>information on preliminary engineering, ROW acquisition, utility work, environmental clearances and the procurement schedule.</p> <ul style="list-style-type: none"> • Under PDA approach – Environmental approvals may not be in place, the alignment may not be set and the scope of work may not be defined. • The P3 Office and/or Public Entity may also require the Private Entity to submit a proposed conceptual development schedule and approach, confirmation of financing alternatives for pre-development, information related to delivery options, preliminary engineering, environmental approvals and the public involvement process. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | No |
| Compliance | Analyzing compliance with Federal and Commonwealth environmental and transportation planning requirements and verifying that the project’s scope and schedule is consistent with these requirements |
| Monitor | No |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

In the Implementation Manual, no information was found related to process or practices. However, the technical provisions for the Final RFP for PennDOT’s Rapid Bridge Replacement (RBR) Program were reviewed.

<http://www.penndot.gov/ProjectAndPrograms/p3forpa/Documents/Technical%20Provisions.pdf>

The technical provisions clearly articulate the roles and responsibilities of the Department and the Development Entity. For example, if a NEPA re-evaluation is needed, the Department will conduct the re-evaluation. If the re-evaluation is needed due to a design change, the Development Entity will pay for it. Section 4.4, Environmental Approvals includes provisions for the environmental aspects typically considered under NEPA, including water resources, cultural resources, stormwater and erosion control, and protected species. Sections 4.4 and 4.5 (Comprehensive Environmental Protection Plan) of the technical provisions are attached to this assessment.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

In the Implementation Manual, no information was found related to monitoring the contractor. The technical provisions for the Final RFP for PennDOT's Rapid Bridge Replacement (RBR) Project were reviewed. They provide information regarding construction monitoring and environmental compliance, as well as outlining the staff and experience required. Sections 4.5 and 4.6 (Environmental Personnel) of the technical provisions are attached to this assessment. Additionally, Section 4.3 (General Requirements and Process) and Section 4.9 (Submittals) have been included as they pertain to transfer of permits between the Development Entity and Department and responsibility for mitigation commitments, respectively.

- Publication 319 Needs Study Handbook
- Publication 321 Project Level Air Quality Handbook
- Publication 324 Agricultural Resources Handbook
- Publication 325 Wetland Resources Handbook
- Publication 349 Section 4(f) Handbook
- Publication 546 Threatened and Endangered Species Desk Reference
- Publication 591 Tribal Consultation Handbook
- Publication 592 Tribal Consultation Handbook Appendix
- Publication 640 Indirect & Cumulative Effects Desk Reference
- Publication 689 Cultural Resources Handbook
- Publication 745 6(f) Handbook
- Publication 746 Project Level Environmental Justice Guidance
- Publication 756 Invasive Species Best Management Practices
- Way finding sign guidance in Publication 13M, DM 2, Chapter 10, Drainage Design & Related Procedures, Section 10.5 Waterway Approval (strike-off letter Anticipated in 2014).
- Aids to Navigation (ATON) in accordance with strike-off letters 482-13-18

4.3 General Requirements and Process

The Department is developing the environmental approvals for the ECB as outlined in Section 4.3.1. The Development Entity is responsible for developing the environmental documents and securing environmental approvals for the REB as outlined in [Section 4.3.2](#). The Development Entity is responsible for providing property owners with a notice of intent to enter as outlined in [Section 7](#) if entry onto private property is necessary to complete any environmental analysis or mitigation measures. The Department's CEES and JPA2 will be used to develop and secure Governmental Approvals. If the Development Entity plans to bundle water obstruction permit packages for submission to Agencies, the following is recommended: Bridges must be bundled within the same county; bundle by similar PASPGP Review Category (Category I, II or III), and there should be an early coordination meeting with the PADEP to discuss the bundle.

4.3.1 Early Completion Bridges

- The Department is responsible for completing the engineering and environmental (E&E) scoping process in accordance with the Department Publication 10B (DM-1B), Chapter 3, Section 3.2 Engineering and Environmental Scoping Field View. This will include documenting the E&E Scoping Field View in the Department's Categorical Exclusion Expert System (CEES).
- The Department is responsible for securing National Environmental Policy Act (NEPA) approvals utilizing the Department's CEES.
- The Department is responsible for securing federal and Commonwealth environmental approvals for water quality, waterway obstruction and encroachment, and erosion and sediment control necessary for the Construction Work in respect of the ECB, including:
 - The National Pollution and Discharge Elimination System (NPDES) Permit, the Clean Water Act Section 404 permit and the Section 401 Water Quality Certification.
 - Any permit and authorization required by Pennsylvania Code Title 25 Environmental Protection, Chapter 102 Erosion and Sediment Control, Chapter 105 Dam Safety and Waterway Management, and Chapter 106 Floodplain Management.
- The Department will transfer to the Development Entity each Environmental Approval required to be secured by the Department for the ECBs, and the Development Entity shall be responsible for associated transfer fees. The PADEP 105/USACOE 404 Permits are developed using the

JPA2 Expert System. Once such permits have been transferred to the Development Entity, the Development Entity will be provided access to the JPA2 Expert System for the ECBs.

- Environmental Commitments are identified and tracked by the Department utilizing the Environmental Commitments and Mitigation Tracking System (ECMTS) found in Appendix T of Publication 10X, Appendices to DM1A, DM1B and DM1C. The Department will provide access to the environmental mitigation information in ECMTS. The Development Entity is responsible for implementing and completing any Environmental Commitments throughout the Term for the ECB and updating the ECMTS for any changes or additional requirements.
- For any changes including but not limited to, Department Change, Development Entity Change, and changes in environmental impacts, regulation or policy, endangered species listing, etc. that occur after the Commercial Closing Date, the Development Entity is responsible for the following:
 - The Development Entity is responsible for notifying the Department of changes that require a NEPA document re-evaluation and providing design support information that would be required information for re-evaluation. The Department will develop the NEPA re-evaluation in the CEES System. If the re-evaluation is due to a design change, the Development Entity will be responsible for any associated costs of the re-evaluation. The Department or FHWA will review/approve the NEPA re-evaluation and will provide a copy of the approval to Development Entity.
 - The Development Entity is responsible for coordinating with the relevant Governmental Entities and the Department for any modifications or changes to the Environmental Commitments. For NEPA related commitments, the Department will be the lead for coordination with other agencies and responsible for securing NEPA related approvals. For other Environmental Approvals (e.g. Chapter 102/105/106, Section 404), the Development Entity is responsible for securing any necessary consents or approvals required for such modifications or changes. The Development Entity is responsible for updating ECMTS to document any such modifications or changes to the Environmental Commitments.
 - The Development Entity is responsible for any and all modifications to any permit obtained by the Department required to complete the Construction Work and Maintenance Work in respect of the ECB. The Development Entity will use processes and procedures established by relevant Governmental Entities to request modifications and/or amendments to such permits. The Development Entity is not exempt from permit application and/or review fees required for amendment and/or modification requests. The Development Entity will provide the Department with copies of the amendment and/or modification requests, any supporting documents and the permit decision.
- The Development Entity is responsible for compliance with the terms and conditions of all environmental approvals and Environmental Commitments as well as any resulting compliance action and/or litigation.
- The Development Entity is responsible for all fines and penalties that may be assessed by a Governmental Entity with jurisdiction in connection with the Development Entity's failure to comply with Applicable Laws or Environmental Approvals, including but not limited to permit conditions, Environmental Commitments and monitoring commitments listed in the CEES.
- The Development Entity is responsible for providing support and coordination with the Department and any relevant Governmental Entities for any Third Party challenges to Environmental Approvals.
- The Development Entity shall, within one (1) Day of receiving a written Notice of Violation (NOV) or similar notification, contact the Department. The Development Entity is responsible for providing all correspondence and details of the resolution of these warnings and/or violations for the Department's records.

- In addition to any reporting obligation to the Department, the Development Entity will hold the Department harmless and be responsible for resolving any and all NOV's, compliance/enforcement actions and/or violations noted in inspection reports issued by any local, state or federal agencies. Included but not limited to the resolution of any NOV/enforcement action is: corrective action to resolve the action, required plan and permit modifications, payment of all fines and penalties, and coordination with the affected parties and agencies.
- When construction is completed, the Development Entity is responsible for completing the necessary forms and obtaining acknowledgement and/or approvals for all PADEP and USACOE permits including but not limited to:
 - Notice of Construction Completion
 - Notice of Termination
 - Permit Compliance Self-Certification Form. Note the completed form must be returned to the District Permit Coordinator.
- At the conclusion of the Term, the Development Entity will transfer each Environmental Approval from the Development Entity name back to the Department. The permit/approvals cannot be transferred to the Department until the Development Entity proves that they have documentation that applicable agencies acknowledged/approved the completion of construction and mitigation under the permit and all NOV/enforcement actions have been resolved. If transfer fees are required, the Department will be responsible for associated transfer fees and will either pay for these directly or the Development Entity will pay the transfer fees and the Department will reimburse the Development Entity for the actual cost.

4.3.2 Remaining Eligible Bridges

- The Department staff is responsible for completing the E&E scoping process in accordance with the Department Publication 10B (DM-1B), Chapter 3, Section 3.2 Engineering and Environmental Scoping Field View. This will include documenting the E&E Scoping Field View in the CEES. Development Entity can view a copy of the approved E&E Scoping Field View Forms in the CEES for information only.
- The Development Entity is responsible for obtaining any and all environmental approvals in compliance with all Applicable Law to include but not limited to the following:
 - National Environmental Policy Act (NEPA) and its associated implementing regulations (40 CFR §1500-1508), Section 4(f) of the U.S. Department of Transportation (USDOT) Act of 1966;
 - Endangered Species Act (ESA);
 - 23 CFR 771- Environmental Impact and Related Procedures;
 - 23 CFR 774 – Parks, Recreation Area, Wildlife and Waterfowl Refuges, and Historic Sites (Section 4(f)); and
 - Section 106 of the National Historic Preservation Act (NHPA) and its associated implementing regulations (36 CFR § 800), PA Act 120, and the State History Code (37 Pa. C.S. 101-906).
- The Development Entity is required to utilize the Department's CEES to document the environmental analysis and submit the documentation for the NEPA approvals. Consistent with the existing Stewardship and Oversight Agreement, the Department or FHWA is responsible for providing the NEPA approvals. Development Entity may only submit a maximum of twenty-five (25) requests per District/per month. The Department will complete the approval of the Categorical Exclusion Evaluation (CEE) evaluations within thirty (30) Days. For FHWA required evaluations, anticipate sixty (60) Days from submission to approval will be required. Note that the clock restarts if the documentation is not complete or is incorrect (i.e the clock goes back to zero (0) Days on the date that the DE is notified the documentation is incomplete or incorrect and does not start again until the DE submits a revised submission);

- For purposes of NEPA related public involvement, the Development Entity will carry out public involvement consistent with requirements of Department's FHWA-approved Project Level Public Involvement Handbook (Publication 295) and 23 CFR 771.111(h). To guide the Development Entity toward meeting 23 CFR 771.111(h) ii, the Department has established recommended actions for NEPA-related public involvement for every bridge in Attachment 10-1 of these Technical Provisions. A Department representative will attend public official or public meetings held for the individual bridges to ensure that the proceedings are properly administered consistent with the Department's Project Level Public Involvement Handbook. See Section 3 of these Technical Provisions for additional details related to public involvement;
- Development Entity is the permittee and is responsible for securing all environmental approvals for water quality, waterway obstruction and encroachment, and erosion and sediment control necessary for construction including:
 - The National Pollution and Discharge Elimination System (NPDES) Permit, the Clean Water Act Section 404 permit and the Section 401 Water Quality Certification.
 - Any permit and authorization required by Pennsylvania Code Title 25 Environmental Protection, Chapter 102 Erosion and Sediment Control, Chapter 105 Dam Safety and Waterway Management, and Chapter 106 Floodplain Management.
- The Development Entity will use processes and procedures established by the relevant Governmental Entities for securing Environmental Approvals. The Development Entity is not exempt from permit application and/or review fees required as part of the permit submission. The Development Entity shall provide the Department with copies of permit applications and permits received.
- Bridge projects involving Section 404 permit reviews not delegated to PaDEP may require paper submissions by the Development Entity of the permit application/registration to the U.S. Army Corps of Engineers.
- For any changes including but not limited to, a Department Change, Development Entity Change, change in environmental impacts, regulation or policy, endangered species listing, etc. that occur after the Commercial Closing Date, the Development Entity is responsible for the following:
 - Preparing any NEPA document re-evaluations. The Development Entity is required to utilize the Department's CEES to document the environmental analysis and submit the documentation for the NEPA approvals for the NEPA re-evaluations. The Department or FHWA is responsible for providing the NEPA re-evaluation approvals. The Department will complete the approval of the CEE re-evaluations within thirty (30) Days of submittal by the Development Entity; in the event such Submittals require FHWA re-evaluations, the Department shall have sixty (60) Days to approve such Submittal.
 - The Development Entity is responsible for coordinating with the relevant Governmental Entities and the Department for any modifications or changes to the Environmental Commitments. The Development Entity is responsible for securing any necessary consents or approvals required for such modifications or changes.
 - The Development Entity is responsible for any and all permit modifications required to complete the construction and maintenance of the Project. The Development Entity will provide the Department with copies of the permit modification requests, any supporting documents and the permit decision.
- Environmental Commitments will be identified and tracked by the Development Entity. The Development Entity shall utilize the format of the Environmental Commitments and Mitigation Tracking System (ECMTS) found in Appendix T of Publication 10X, Appendices to DM1A, DM1B and DM1C. The Development Entity is responsible for implementing and completing any Environmental Commitments through the design, construction and maintenance phases of the REBs.

- In accordance with the Department's existing Publication 10C (Design Manual 1C) in Section 1.3 of the Technical Provisions, the Development Entity will not conduct final design activities prior to receiving the Department's NEPA approval.
- The Development Entity is responsible for compliance with the terms and conditions of all environmental approvals and Environmental Commitments as well as any resulting compliance action and/or litigation.
- The Development Entity is responsible for all fines and penalties that may be assessed by a Governmental Entity with jurisdiction in connection with the Development Entity's failure to comply with Applicable Law or Environmental Approvals, including but not limited to permit conditions, Environmental Commitments and monitoring commitments listed in the CEES.
- The Development Entity is responsible for providing support and coordination with the Department and the relevant Governmental Entities for any third party challenges of Environmental Approvals.
- The Development Entity shall, within one (1) Day of receiving a written NOV or similar notification, contact the Department. The Development Entity shall be responsible for providing all correspondence and details of the resolution of these warnings and/or violations.
- In addition to any reporting obligation to the Department, the Development Entity will hold the Department harmless and be responsible for resolving any and all NOVs, compliance/enforcement actions, and/or violations noted in inspection reports issued by any local, state or federal agencies. Included but not limited to the resolution of any NOV/enforcement action is: corrective action to resolve the NOV/action, required plan and permit modifications, payment of all fines and penalties, and coordination with the affected parties and agencies.
- Upon completion of the Construction Work, the Development Entity is responsible for completing the necessary forms and obtaining acknowledgement and/or approvals for all PADEP and USACOE permits including but not limited to:
 - Notice of Construction Completion
 - Notice of Termination
 - Permit Compliance Self-Certification Form
- At the conclusion of the Term, the Development Entity will transfer any environmental approvals from the Development Entity name back to the Department. The permit/approvals cannot be transferred to the Department until the Development Entity proves that it has documentation that the relevant Governmental Entity acknowledged and approved the completion of construction and mitigation under the Environmental Approval and all NOV/enforcement actions have been resolved.

4.4 Environmental Approvals

The Development Entity is responsible for conducting environmental studies and re-evaluations caused by actions not identified in the Environmental Approvals, actions not covered specifically by existing resource agency coordination, or incorporation of additional properties into the Project. The Development Entity is responsible for all coordination of environmental studies with appropriate Governmental Entities. The Development Entity is responsible for providing the Department a spreadsheet with the status of each environmental approval and permit for each bridge on a quarterly basis for the purpose of managing the NEPA Clearance and Permitting Process. The spreadsheet shall contain the following information: County, SR, BMS Number, and local name of the Replacement Bridge, Environmental Approval status, cost expended for NEPA related activities, permits required, name of individual and firm completing and submitting the application, date(s) of submission, cycle times for administrative completeness, technical completeness and issuance of the approval or permit. The Department and FHWA, as applicable, will review a sample of CEE Submissions of the projects approved on a monthly basis for the first ninety (90) days, then at 3-month, 6-month, and 12-month intervals.

4.4.1 Department Review and Approval of Development Entity Submissions

The Department will review, comment on, and, as applicable, require revisions to documentation submitted for Environmental Commitments or Environmental Approvals related to the NEPA Process. The Department reserves the right to review, comment on, and require revisions to documentation submitted for state and federal permit applications. Documentation shall conform to current Department submission standards and the requirements of all applicable Governmental Entities and Applicable Law. If the Department reviews documentation, the Department shall return approved documentation to the Development Entity for submittal to the appropriate Governmental Entity in cases where the Development Entity performs coordination. The Department, acting reasonably, shall approve those submissions for which the Department signature or other approval is required. Documentation not meeting current submission standards or requirements of Governmental Entities is returned to the Development Entity, and shall be revised by Development Entity to meet standards or requirements. The Department will also compare the impacts identified by Development Entity in the NEPA documentation to the results of the scoping-phase field screening the Department did for the bridge. In reviewing and approving the NEPA documents, the Department and FHWA will take full responsibility for the scope and contents of the NEPA documents.

4.4.2 Water Obstruction and Encroachment and Floodplain Management Permits

Water obstructions are regulated under PA Code Title 25, Chapter 105 and Chapter 106 and USACE Clean Water Act Section 401/404. PA Code Title 25, Chapter 105 Water Obstruction and Encroachment permit is needed for any structure or activity that changes, expands or diminishes the course, current or cross section of a watercourse, floodway, body of water, or wetland. Under PA Code, Title 25, Chapter 106 Floodplain Management permit is needed when a highway obstruction in a floodplain is constructed, modified, removed, destroyed or abandoned. Chapter 106 permits, when required, are included as part of the Chapter 105 permit application. The fee required for a project authorized under this permit shall be consistent with 25 PA Code §105.13 and the Development Entity will not be exempt from such fees. A Submerged Lands License Agreement (SLLA) is required for any regulated water obstruction or encroachment to occupy submerged lands of this Commonwealth located in a navigable lake or river or stream declared a Public Highway. A SLLA is not required for Commonwealth owned structures, but other public or privately owned obstructions (e.g. utility lines attached to the bridge or under the streambed) will require SLLA and the associated fees to obtain the SLLA. Development Entity is responsible to ensure Utilities have acquired the SLLA prior to commencement of construction. The Utilities or others will bear all costs associated with acquiring the SLLA for their facilities.

The Development Entity will submit to the Department a copy of the approved CEE, a report of the wetlands and stream impacts, and the mitigation proposed for the Chapter 105/106 and Section 404 permits prior to submitting the permit application to the agencies so the Department can ensure the impacts and mitigation reported in the NEPA document are accounted for in the permit process. The PASPGP (Pennsylvania State Programmatic General Permit), as amended, authorizes the discharge of dredged, excavated or fill material or structures into waters of the United States and waters of the Commonwealth, including wetlands. Pennsylvania uses the PASPGP joint agency guidance between PADEP and USACOE to provide the USACOE 404 Clearance and PADEP 105/106 Clearance in one permit process for projects that meet the conditions of PASPGP.

4.4.3 Erosion and Sediment Pollution Control/Stormwater Management

The Development Entity shall be responsible for developing, implementing and monitoring an erosion and sediment control plan in compliance with Applicable Law and guidance in the Department's Drainage Manual, Publication 584, Chapter 12 and 13 and DM 2, Chapter 13.

If required by Applicable Law or any Environmental Approvals, the Development Entity shall prepare a post construction stormwater management (PCSM) plan. The Development Entity shall be responsible for the inspection, maintenance, remedial action and permit modifications of any PCSM facilities constructed or modified for the Project. The Development Entity shall perform inspections and maintenance in accordance with the current Department policy on PCSM facilities inspections. If the Department policy on PCSM facilities inspections is not available, the Development Entity shall perform inspections on PCSM facilities in accordance with the PCSM Plan and inspection results must be reported to Department and PADEP. The Development Entity shall report any maintenance, remedial action or permit modifications of any PCSM facilities constructed for the Project to the Department.

For PCSM facilities, the long-term inspection and maintenance schedule developed by the Development Entity shall comply with any applicable Department policies and shall be transferred to the Department at the conclusion of the Term.

4.4.4 Threatened and Endangered Species

The Development Entity shall comply with all aspects of the federal Endangered Species Act, including consultations. The Development Entity will conduct as necessary a Pennsylvania Natural Diversity Inventory (PNDI) screening. When it is determined that there are any threatened or endangered species/habitat or rare natural communities in the vicinity of any of the Replacement Bridges, the Development Entity will coordinate with the Governmental Entities with jurisdiction over potential impacts. In some instances surveys may be necessary to determine if the Work will impact a species or its habitat. The Development Entity shall coordinate with the Department to determine whether Work may proceed and what measures can be implemented to avoid or minimize the impacts of the Work to threatened and endangered species and rare natural communities. Candidate Species will be treated as listed species.

All consultations required for federally listed T&E Species for the Project will be conducted by the Department in order to facilitate FHWA consultation with the U.S. Fish and Wildlife Service (USFWS).

The Development Entity is responsible for completing the biological assessment (BA) and all associated research, documentation and surveys to prepare the BA for consultation with the USFWS.

The Development Entity is responsible for coordinating state listed species with the relevant Governmental Entities and providing the Department with copies of clearance and mitigation requirement documents.

4.4.5 Cultural Resources

The Development Entity will comply with Section 106 of the National Historic Preservation Act and the Pennsylvania State History Code through the use of existing Department tools, specifically the Statewide Section 106 Programmatic Agreement (Statewide PA), the State History Code Memorandum of Understanding (MOU), Publication 689, Project PATH and the Letter of Agreement (LOA) developed by the Department in coordination with the State Historic Preservation Office (SHPO) and FHWA stipulating the use of the Statewide PA for this Project.

4.4.5.1 Cultural Resources Professionals Delegation

The PA and its corresponding MOU are core to the compliance with federal and Commonwealth historic preservation laws and regulations. The PA and MOU streamline the Section 106 process, using trained and delegated cultural resources professionals (CRPs).

4.4.5.2 Project PATH

For the REB, Development Entity's CRPs are expected to use Project PATH and other tools as suggested in the CR Handbook to solicit for consulting parties where historic properties are anticipated, and to post

project findings of eligibility and effect. The Development Entity should expect that the Department and Preservation Pennsylvania will create a special category of project type to cover the Project, and should anticipate that each Project Site will be considered individually for purposes of Section 106 consultation.

4.4.5.3 Elevation and Dispute Resolution

For any disputes arising from the Stipulation XI of the Statewide PA, the appropriate Development Entity CRP will notify the Department's Cultural Resource Unit Head within 3 Working Days. The Department will attempt to mediate the dispute between the Development Entity CRP and the other party. If the dispute cannot be resolved to the satisfaction of all parties, the Department will elevate the dispute following the provisions of Stipulation XI of the Statewide PA.

For any disagreements related to cultural resources level of effort or findings within the Project where historic resources may be affected, i.e., between the Development Entity CRP and other staff where historic resources may be affected, the Development Entity CRP shall have the ability and responsibility to elevate the dispute to the Department. The Department's Cultural Resources Unit Head will attempt to mediate the disagreement. The Department shall be responsible for notifying both the FHWA and the PHMC as to the nature of the disagreement and its status. If the disagreement cannot be resolved, the Department's Cultural Resources Unit Head will elevate the issue to the Chief of the Environmental Policy and Development Section (EPDS). If the EPDS Section Chief cannot resolve the disagreement, the EPDS Chief will elevate the issue to the Department's manager of the PPA.

4.4.5.4 Resolving Adverse Effects

Consistent with Stipulation III.B.10 of the Statewide PA should a Replacement Bridge result in an anticipated adverse effect to historic resources, the CRP will provide the Department documentation following 36 CFR 800.11(3). The Department will provide this information to and coordinate with FHWA, the SHPO and any tribes or consulting parties to seek to avoid or minimize adverse effects. FHWA will notify the Advisory Council on Historic Preservation if conditions in Stipulation III.B.10.b apply. The CRPs will involve consulting parties to resolve the adverse effect, following the Statewide PA and Publication 689. As a result of consultation, the CRP will provide the list of conditions and stipulations to the Department to be included in a Replacement Bridge-specific memorandum of agreement (MOA) or Letter of Agreement (LOA). CRPs are responsible for outreach and coordination of the draft MOA/LOA with consulting parties and the public. The Department will draft the MOA/LOA and circulate the MOA/LOA for signature.

For archaeological investigations, the Development Entity will have the responsibility of either providing a deed of gift or evidence that a reasonable effort to obtain a deed of gift was not successful. The Development Entity will have the responsibility of providing all recovered artifacts and records in a condition consistent with PHMC guidelines to the State Museum for permanent curation, including any payment of fees for accessioning and curation. The Development Entity will be reimbursed at actual cost for all curation fees that may occur during this process.

4.4.5.5 Tribal Consultation

Stipulation II.C and III.B.3 of the Statewide PA, as well as several tribal-specific memorandums of understanding require the Department to consult with federally-recognized Tribes where there is the potential to affect historic properties of tribal interest (see also the Department's Publications 591 and 592). For all Replacement Bridges, this coordination shall be undertaken by the Department. The Development Entity is responsible for providing the Department with notification of any proposed archaeological studies at least forty-five (45) Days in advance of fieldwork, and provide a completed Initial Tribal Consultation Form and associated documents. The Development Entity will also cooperate and provide any related project materials for the purposes of consultation to the Department's Cultural Resources Unit Head, including any subsequent Tribal Consultation Forms.

4.4.5.6 Human Remains

Following the Stipulation VI of the Statewide PA, if human remains, graves, or grave-associated artifacts are encountered during an archaeological investigation or during performance of the Work, the Development Entity will immediately cease all Work in the area of the encounter and notify the Department in accordance with the policies and coordination procedures established in Publication 689, Chapter V-4. The Department and/or FHWA will implement the remaining provision of Stipulation VI.

4.4.5.7 Oversight

Quality control is maintained via the use of trained and delegated CRPs to manage the Section 106 process, and, the use of a transparent process through Project PATH. In addition to these steps, the Development Entity shall:

- Develop and implement an internal communication protocol for the purposes of ensuring cultural resources decisions made by the CRPs are transmitted to the design team, and that design decisions that might affect historic properties are transmitted to the CRP in a timely manner. The Development Entity shall submit the proposed CRP – Development Entity Communications Plan to the Department for review and approval in its sole discretion within 30 Days of NTP1.
- For any dispute raised under Stipulation XI of the Statewide PA, the Development Entity will cooperate with the FHWA, SHPO, and the Department to provide files, notes, memos, e-mails, etc., to assist in discovering the basis for the dispute, the best means to resolve the dispute, and any best practices that may be developed to prevent similar disputes from arising in the future.
- Cooperate in any monitoring programs developed by the Department, including but not limited to a review of a sample of Section 106 completed Replacement Bridges on a monthly basis for the first ninety (90) Days, then at 3-month, 6-month, and 12-month intervals to ensure that the Development Entity CRPs are completing the Section 106 studies, analysis, and documentation consistent with Publication 689 and the Statewide PA. The Development Entity will implement within thirty (30) Days recommendations made by the Department and SHPO regarding performance of the Section 106 process.
- For purposes of Stipulation X, ECB and REB sites collectively will be treated as a District and Development Entity CRP's are required to update the necessary information into Project PATH so that the Department can provide a list of Replacement Bridges and findings made by Development Entity CRPs in its annual reports required under the Statewide PA.
- For each mitigation commitment to avoid or resolve an adverse effect, develop and implement a work plan that will identify the committed action and any associated deliverable, who is responsible for completing the action, the deadline for completing the action, and any additional coordination for completing the action. Work plans must be submitted to and approved by the Department's Cultural Resources Unit Head prior to implementation. For each completed action, the Development Entity will notify the Department and provide any documentation of its completion. The Project PATH Mitigation tab will be used to monitor mitigation commitments. To the degree that the Environmental Commitments and Mitigation Tracking System (ECMTS) can be used to complete these requirements, the Development Entity shall use ECMTS.

4.4.5.8 4(f) Resources

Section 4(f) of the U.S. Department of Transportation Act of 1966 (49 U.S.C. 303) prohibits the use of historic properties or publically owned parks, recreation areas, or wildlife refuges (Section 4(f) resources) unless it is first determined that there is no feasible or prudent alternative to the use of the resource and the project includes all measures to minimize harm to the resource(s). If a Replacement Bridge involves a temporary occupancy or a take from a Section 4(f) resource, the Development Entity will be required to comply with Section 4(f), its regulations (23 C.F.R. Part 774), the Programmatic Section 4(f) Evaluations, 71 P.S. 512(a)(15) (the state equivalent), and Publication 349.

A Section 4(f) Evaluation would be required by completing a checklist if one of the approved Programmatic Section 4(f) Evaluations are applicable or an Individual Section 4(f) Evaluation would be required consistent with Publication 349. The Development Entity will coordinate with the Department regarding the applicability of Section 4(f) to the Project and the scope of documentation required. The Department and/or FHWA will review and approve the checklist and the Individual Section 4(f) Evaluations. For the non-applicability and temporary use and occupancy checklists, approval is only required from the Department. For all other checklists and Individual Section 4(f) Evaluations approval is needed from both the Department and FHWA. The Development Entity will prepare and submit the Section 4(f) documentation to the Department. The Department will coordinate with FHWA. Depending on the quality of the documentation, approval of checklists involving only the Department are normally completed in thirty (30) days, approvals of checklists involving the Department and FHWA are normally completed in sixty (60) days, and approvals of Individual Section 4(f) Evaluations are normally completed in one hundred and twenty (120) days.

4.4.5.9 Aesthetic Bridge Design in Historic Districts

The section pertains only to Replacement Bridges that are to be located in historic districts. Aesthetics for other Replacement Bridges are considered under Section 14-Aesthetics and Landscaping.

If a Replacement Bridge is determined to be located in a historic district, but is determined to not be contributing to the historic district and not have an adverse effect, the standards developed in Section 14-Aesthetics and Landscaping will apply but concurrence from the SHPO will not be required for the design of the Replacement Bridge.

Consistent with Stipulation V of the Statewide PA, there are two approaches for the consideration of Aesthetic Bridge Design for contributing bridges in Historic Districts, depending on whether consulting parties other than the Department and the SHPO are present. For the resolution of adverse effect(s), the SHPO will have the opportunity to review and comment on the draft Aesthetic Master Plan and any site specific plans that do not conform to the Master Plan. If the Replacement Bridge contributes to a historic district and there are no consulting parties other than FHWA, the SHPO, and the Department, the standards developed in Section 14-Aesthetics and Landscaping will apply. The plans for each Replacement Bridge contributing to an historic district will be developed in consultation with the Department, FHWA and SHPO and will be submitted to the SHPO for concurrence as a standard treatment (Section 106 PA, Appendix F, Part B). If the SHPO concurs, the Development Entity will execute the design. If the SHPO does not concur, the Development Entity' CRPs will consult with the SHPO, FHWA, and the Department to resolve the disagreement, following Stipulation XI of the Statewide PA. The same applies if the Replacement Bridge does not contribute to the historic district but the Replacement Bridge could result in an adverse effect to the Historic District.

If there are consulting parties for the Replacement Bridge in addition to the FHWA, the SHPO, and the Department, the Development Entity will present the bridge standard from the Aesthetic Master Plan as one option for the purposes of consultation. The Development Entity will follow the Statewide PA and Cultural Resource Handbook in completing the Section 106 process.

If a standard treatment is the sole measure to resolve adverse effects, no memorandum of agreement or letter of agreement is needed.

All treatments beyond what is required in Section 14 of these Technical Provisions to address adverse effects to historic districts shall be considered as an environmental mitigation action.

The Department, FHWA, and/or the SHPO may request on-site meetings during construction to review implementation of the agreed upon bridge designs and/or treatments. The Development Entity shall provide site access and timely notification of the installation of elements developed to avoid or minimize adverse effects during construction to accommodate the on-site meetings.

4.4.6 Invasive Species Control

The Development Entity shall comply with the best management practices (BMP's) identified in the current version of Publication 756, Invasive Species best management practices.

4.4.7 Environmental Justice

Environmental Justice (EJ) refers to the implementation of Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which directs procedures to be put in place to identify and address any disproportionately high and adverse human health or environmental effects on minority and low-income population groups.

It is anticipated that the majority of REB are exempt from a detailed EJ analysis by meeting the exemption criteria outlined in Publication 746 except where the stipulations and criteria in Section 2.1.1 are not met. Development Entity will determine if the project is exempt from an EJ analysis and if so, document this in the CEES. For those projects that are not exempt, Development Entity will conduct an EJ analysis as outlined in Publication 746.

For exempt projects, the deliverable is the accurate completion of the EJ information in the CEES. For non-exempt projects with no EJ population identified or with EJ populations identified but without disproportionately high and adverse effects, the deliverable is the accurate completion of the EJ information in the CEES. Development Entity will keep the technical file with documentation of the analysis for review by the Department or FHWA as requested.

For any project determined to have disproportionately high and adverse effects, Development Entity will complete the accurate documentation of EJ information in the CEES and develop a mitigation strategy. The mitigation strategy is submitted to the Department for approval. Development Entity is responsible for implementing mitigation measures outlined in the mitigation strategy.

4.4.8 Air Quality – Publication 321 - Project Level Air Quality Handbook – August 2012

Project level air quality analyses occur as part of the environmental clearance process and address requirements in the Clean Air Act (CAA) and PA Act 120. Projects that have potential air quality impacts must be considered for the incorporation of appropriate avoidance and/or relief strategies.

Development Entity will complete all air quality analysis as required by the Department *Publication 321, Project Level Air Quality Handbook*. It is anticipated that most online bridge replacements is determined to be exempt from air quality analysis per exemption criteria contained in *Publication 321*.

For projects that require a qualitative analysis, per *Publication 321*, Development Entity will complete the analysis and accurately document the results in the CE Expert System. For projects that require a quantitative analysis, Development Entity will complete the analysis and accurately document the results in the CE Expert System. Additionally, the quantitative analysis is submitted to the Department for approval. Any project requiring coordination with the Pennsylvania Air Quality Interagency Consultation Group (ICG) is submitted to the Department for approval and coordination with the ICG.

4.4.9 Project Level Highway Traffic Noise – Publication 24- Project Level Highway Traffic Noise Handbook, April 2011

The Department assesses the potential noise impacts of highway improvement projects and, where appropriate, considers noise impact mitigation measures for eligible projects. Development Entity is responsible for preparing all highway traffic noise analyses as required under 23 CFR 772 and the Department Publication 24, Project Level Highway Traffic Noise Handbook. It is anticipated that most online bridge replacements will be determined not to be Type I projects as per FHWA and the Department criteria and will require only a qualitative analysis. The qualitative noise analysis will be conducted by Development Entity.

Based on the results of the qualitative analysis, Development Entity will accurately complete the Highway Traffic Noise Section of the CE document in the CE Expert System. No FHWA or the Department review is needed for qualitative analysis projects. When Development Entity determines that the project is a Type I Project, per FHWA and the Department criteria, a quantitative analysis will be required. Development Entity will conduct the quantitative analysis in accordance with Publication 24. Development Entity will be required to submit all Type I projects with quantitative analysis to the Department for review and approval. If mitigation is required, public involvement will be necessary as part of the determination of the selected treatment option. Level 2 CEs or projects where mitigation is recommended will require additional approval from FHWA. If FHWA approval is required, assume a 30 day review process for FHWA.

4.4.10 Project Level Agricultural Resources Evaluation

The agricultural resources evaluation process was developed in conformance with and to assure compliance with the following federal and state laws and policies:

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

The Development Entity is responsible for all project level agricultural resource activities. These activities are conducted in accordance with *the Department Publication 324, Agricultural Resources Evaluation Handbook*. It is anticipated that most online bridge replacements will not result in significant impacts to agricultural resources and that only the project NEPA document is required to address the ALPP and FPPA. Additionally the Department review and the involvement of the Office of Chief Counsel is required only when PA Act 1979-100 or PA Act 1981-43, related to the condemnation of productive agricultural land and/or condemnation of lands enrolled in agricultural security districts, are applicable to a project.

In summary:

- If FPPA and/or ALPP only apply, then no further the Department review is required.
- If PA Act 1979-100 or PA Act 1981-43 are applicable to a project, then the Department and Office of Chief Counsel Review is required. The Office of General counsel will endeavor to review agricultural condemnation evaluations within fifteen (15) days of complete request for legal opinion consistent with Pub 324, Appendix 9 on whether ALCAB approval is needed.

4.4.11 Hazardous and Regulated Waste Management

The U.S. Environmental Protection Agency (EPA) has determined that bridges are defined as structures per 40 CFR part 61 Subpart M, NESHAP (National Emission Standard for Hazardous Air Pollutants), and therefore subject to inspection, notification, and removal requirements per federal, state and local laws

and regulations. Development Entity shall comply with applicable laws and coordinate with the Department regarding potential hazardous waste impacts. The Department will provide available information on the existing bridges and the Development Entity will be responsible for tests to identify lead base paint and asbestos-containing materials on existing bridges thirty (30) calendar days prior to start of bridge construction. Development Entity shall follow specific measures to protect the streams and other waters of the U.S., including wetlands, from materials generated during bridge blasting and deck repair or removal.

The Development Entity must submit Environmental Site Assessments (ESAs) to the Department for review. The Department will complete the review of the ESA submission within fourteen (14) Days. The costs of all field, laboratory and consulting work, including but not limited to Phase II or III Environmental Site Assessments (ESAs), related to Hazardous Materials, non-hazardous waste, contaminated soil and clean fill are considered part of the Construction Work.

4.4.11.1 Asbestos Containing Material (ACM)

The Development Entity shall identify, inspect, notify, amend notifications as necessary, pay notification fees and abate asbestos found on any structure in accordance with appropriate or relevant regulations or guidance.

4.4.11.2 Lead Based Paint

The Development Entity shall identify, inspect, notify, amend notifications as necessary, pay notification fees and abate lead based paint found on any structure that is to be utilized onsite during performance of the Work, in accordance with Applicable Law and Department guidance. If structural members are scrapped/recycled/sold, the Development entity shall follow Applicable Law and Department guidance for the handling processes.

4.4.12 Public Lands

The Development Entity shall coordinate with the Department and appropriate Governmental Entities on the potential to impact public lands to facilitate avoidance or mitigation. Public lands may include parks, trails, state or national forests, state game lands, state parks and other recreational type lands; that could potentially be classified as Section 4 (f) or where federal or state grants were used to purchase said lands such as Section 6(f), Project 70, Project 500, and other Commonwealth grant programs. Any mitigation requires purchase of real properties and property purchase shall be in accordance with Section 7 of these Technical Provisions.

In performing work within or adjacent to public use lands, namely national or state forests, state gamelands, wildlife or waterfowl refuges, recreation areas, parklands, and historic sites, comply with all applicable rules and regulations of the authority having jurisdiction. See Section 4.4.5.8 of these Technical Provisions for documentation requirements related to Section 4(f).

The Development Entity shall cooperate with the national or state forest officer or supervisor and authorized subordinates in observing sanitary laws and in exercising every reasonable precaution to prevent and suppress forest fires and vandalism.

The Development Entity shall do everything reasonable to prevent and suppress forest fires and notify a forest supervisor, as soon as possible, of the location and extent of any fire observed. Before starting indicated work affecting stream channels, verify that the Department has the approval of the PADEP and/or the DCNR.

4.4.13 Waste, Borrow and Staging Areas

The Development Entity will locate proposed areas for obtaining borrow material and/or areas for disposal of waste material, when required and ensure compliance with all applicable laws and regulations. Locate waste, borrow, or staging areas inside or outside of the right-of-way in upland areas not impacting waters of the United States, including jurisdictional wetlands, unless already authorized by the U.S. Army Corps of Engineers and PADEP; remove topsoil and stockpile it for replacement when removal of borrow material has been completed.

Waste and borrow areas that impact waters of the United States are prohibited unless already permitted, as agreed to with the U.S. Army Corps of Engineers. The Development Entity will obtain waterway and/or other required permits as applicable, prepare and submit an Erosion and Sediment Pollution Control Plan to the Conservation District for approval and negotiate with the owner(s) of property to be obtained by using the Department's standard —Borrow and/or Waste Agreement, available from the Department. This standard agreement may be modified to cover unusual or special conditions, provided such conditions are acceptable to the Department. Submit one copy of each executed agreement to the Department

The Development Entity will also submit one copy of applicable permits and of the approved Erosion and Sediment Control Plan to the Department before starting work; have the agreement provide for cleaning and leaving the premises and area in a well-drained and, if required, smoothly graded condition, blending into the existing topography; and scarify, lime, fertilize, seed, and mulch any disturbed areas with material, and formulae, at rates typical for the project. When directed, it will satisfactorily remove and dispose of surplus material and perform the clean fill determination for all borrow materials entering the construction right-of-way by completing and submitting the Environmental Due Diligence Form EDD-VI, and, if necessary, Form EDD-VII to the Department for acceptance.

4.4.14 Construction Impacts

Development Entity shall be responsible for evaluating potential construction noise, dust and traffic impacts and for developing and implementing necessary impact mitigation measures.

4.5 Comprehensive Environmental Protection Plan

As part of the Project Management Plan (PMP), the Development Entity shall develop and implement a Comprehensive Environmental Protection Plan (CEPP), applicable throughout the Term to establish the approach, requirements and procedures to be employed to protect the Environment. All component parts shall reflect in order of priority: impact avoidance, minimization and as last resort mitigation. The CEPP shall satisfy applicable FHWA, the Department and resource agency requirements, including those detailed as commitments in any environmental approvals and associated PPC Plans.

The dates by which component parts comprising the CEPP are to be submitted for the Department approval are set forth in the PPA. Amendments and updates to the CEPP as necessary to address changing conditions and environmental requirements shall be in accordance with the procedures for amendments to the PMP.

The Development Entity shall establish a schedule for periodic CEPP review to ensure it is up to date. The CEPP shall provide a means to track the reviews and results. At a minimum, the CEPP shall require documents in the following list to be on file at replacement bridge sites and available at any time for Department review:

- a) CEPP component parts;
- b) Weekly environmental monitoring reports;

- c) Investigative work plans, site investigation reports, and remedial action plans as necessary for hazardous material discovery/remediation;
- d) Wetlands Delineations and appropriate Section 404 Permit Application if changes to the design or temporary construction impacts are necessary;
- e) Mitigation or resource monitoring reports, as required by resource-specific mitigation plans
- f) Designs for wetland and floodplain mitigation;
- g) PADEP 105 Permit and Section 401 Water Quality Certification Approvals with date of approval and expiration date, if applicable;
- h) USACOE 404 Approval with date of approval; and
- i) Completed permit applications and permits as issued.

Standard Operating Procedures

Development Entity shall develop standard operating procedures for the following activities and include them in the CEPP:

- a) Controlling dust during construction;
- b) Mitigating vibration during construction; and
- c) Complying with jurisdictional waters and wetlands permits.

4.5.1 Environmental Commitment and Mitigation Tracking System

The Environmental Commitment and Mitigation Tracking System (ECMTS) shall be the overarching system by which Development Entity shall ensure environmental commitments are implemented. The Environmental Commitments will include those made during the Environmental Approval and permitting processes, and other environmental requirements to be carried forward and reflected, as appropriate, in the design and implemented throughout the Work. Development Entity shall utilize the ECMTS to track on-going issues, identify environmental compliances, nonconforming work and identify actions required/taken to correct any such Nonconformance.

4.5.2 Waste Management Plan

The Development Entity shall prepare a Waste Management Plan (WMP) for the safe handling, storage, treatment and/or disposal of Hazardous Materials, hazardous waste, non-hazardous waste, contaminated soil and clean fill whether encountered or brought onto the Project Site by a third party, or otherwise, during the Term to ensure a safe working environment for personnel and visitors. The Development Entity shall use the Department's Publication 281 for guidance on the development of the WMP. The Development Entity shall submit the final Waste Management Plan to the Department for approval within thirty (30) Days of NTP1; approval of the WMP by the Department shall be a condition of NTP2.

The Waste Management Plan shall include procedures compliant with all Applicable Laws and include, at a minimum:

- a) For all chemicals to be used on the Project, Development Entity shall keep and update Safety Data Sheets (SDS), per Occupational Safety and Health Administration (OSHA) requirements, for the Term.
- b) Designated individuals responsible for implementation of the plan,
- c) Procedures for identifying and documenting potential contaminated sites which might impact Project development,
- d) Procedures for mitigation of known contaminated sites anticipated to impact construction,
- e) Procedures for mitigation of unanticipated contaminated sites encountered during construction,
- f) Procedures for mitigation of contamination during the operation and maintenance of the Project,
- g) Procedures for developing a detailed Spill Response Plan for the Term,

- h) Process for training personnel for responding to and mitigating Incidents involving contamination or waste
- i) Provisions for appropriate storage and disposal of all waste encountered or disposed of on the Project for the Term; and
- j) Identification and contact information for designated responsible individuals.

The WMP shall include provisions for making all on-site workers aware of and able to recognize the potential Hazardous Materials to which they may be exposed, limiting Contractors and other Project Site workers' exposure to Hazardous Materials and providing all necessary personal protection equipment to protect workers from exposure. The WMP shall require Development Entity to provide any non-Development Entity personnel who visit the Project with the appropriate personal protection equipment.

The WMP shall require that all personnel of Development Entity-Related Entities handling Hazardous Materials be trained and certified at least to the minimum requirements established under the current guidelines of OSHA 1910.120.

Further, the WMP shall include procedures for ensuring that all applicable certifications, licenses, authorizations and Governmental Approvals for Development Entity-Related Entity personnel handling Hazardous Materials are current and valid through the duration of the Work.

4.5.2.1 Investigative Work Plans and Site Investigation Reports

If wastes or contamination are encountered within any of the Project ROW or additional properties used as the Development Entity's staging area, field office site, plant sites, borrow site, or stockpile location, the Development Entity shall prepare an investigative work plan (IWP) that addresses the methods, techniques, and analytical testing requirements to adequately characterize the extent of the contaminated media (soil and/or groundwater) potentially impacting the Project. The Development Entity shall locate and assess the likely source of contamination.

A Professional Engineer and other qualified professionals, as needed, shall prepare the IWP and other necessary reports in accordance with Applicable Laws and Department guidance.

Upon satisfactorily completing the investigative work, the Development Entity shall summarize the findings within a Site Investigation Report (SIR) and make recommendations regarding potential response actions necessary for Project development. Development Entity shall take Hazardous Materials contamination and all waste management considerations into account during all subsequent phases of Project development, including additional properties negotiation and acquisition, property management, design, and construction.

The SIR shall address the characterization of the impacted area; sampling efforts and findings; opportunities to avoid the contamination by adjusting the design; level of response action warranted if the contamination cannot be avoided; feasibility of initiating response actions prior to construction; pursuit of cost-reimbursement from responsible parties; and the need for completing response actions concurrent with construction and nature of any special specifications and provisions necessary for incorporation into the Project.

The Development Entity may initiate a preventative or corrective action after the Department review and approval of the Site Investigation Report from appropriate Federal or State agencies.

4.5.3 Communication Plan

The Development Entity shall develop a Communication Plan (CP) which describes in detail the communication hierarchy for information distribution related to environmental coordination. The CP will

include names and contact information, including emergency contact information, and the preferred methods of routine, and emergency communication distribution.

4.5.4 Construction Monitoring

The Construction Quality Management Plan (CQMP) in Section 2.2.9 shall identify times, locations, and other conditions where monitoring of construction activities are to be performed to maintain and cause compliance with environmental laws, Environmental Approvals, and the Project Documents. All environmental monitoring reports shall be made available for review by the Department at the Department's request. Should any Nonconforming Work or violation be observed that represents an imminent danger to human health or the environment, the CQMP shall include procedures to cause immediate notification to the Department.

In addition to the CQMP, prior to NTP2, the Development Entity shall inspect existing facilities, structures, and environmentally sensitive areas in the vicinity of the Project Site but not included as part of the Work. The inspection shall document the pre-construction condition of vegetation, streets, sidewalks, landscaping, residential and commercial property, creeks, storm drainage and infrastructure. The purpose of the inspection is to provide a point of reference from which the Department can determine if any facility, structure and environmentally sensitive area damaged during the Work is restored to its pre-construction condition. Development Entity shall document the inspection with a report that shall include photographs, sketches, maps, and narratives clearly depicting the pre-construction Project Site condition.

All photographs shall be archival quality and shall be accompanied by a caption describing the date; time of day; location and direction in which the photograph was taken. If the photograph shows existing damage, the damage must be clearly shown and noted in the caption. All sketches and maps must be no larger than 11"x17". All photographs must be 4"x6".

4.6 Environmental Personnel

The Development Entity shall designate an Environmental Team (ET), as detailed in this section, to prevent, minimize, and/or correct any violation of or noncompliance with Environmental Approvals. The ET shall include Environmental Compliance Manager, Environmental Training Staff, Cultural Resources Management Personnel, Natural Resource Biologist, Environmental Compliance Inspectors (ECIs), Water Quality Specialist, and Hazardous Materials Manager. All of the ET shall be deemed other principal personnel.

4.6.1 Environmental Compliance Manager

The Development Entity shall designate a full-time Environmental Compliance Manager (ECM) for the D&C Work. The ECM shall report and coordinate all issues directly with the Department and the Project Manager. In the event the ECM, in consultation with the Project Manager and the Department, is unable to reach satisfactory resolution of environmental issues, the ECM shall provide written notification to the Development Entity and the Department outlining the concerns, actions taken attempting to correct the concerns, and provide a recommendation as to the suggested course of action.

The ECM shall coordinate with the Department, Development Entity's team, and appropriate Governmental Entities. The ECM shall submit all necessary environmental documentation and monitoring reports to the appropriate Governmental Entities and when applicable, through the Department, to the extent necessary to maintain compliance with applicable Environmental Approvals.

4.6.2 Environmental Training Staff

Under the direction of the ECM, the environmental training staff shall develop, schedule and conduct environmental awareness and environmental compliance training for the Development Entity's personnel.

4.6.3 Hazardous Materials Manager

The ECM shall designate a Hazardous Materials Manager to provide expertise in the safe handling of Hazardous Materials required to perform the Work and those that may be discovered/impacted during the Term. The Hazardous Materials Manager shall conduct appropriate activities such as the following:

- Schedule and/or conduct training for the Development Entity's employees and Subcontractors.
- Verify all employee certifications prior to and required for any handling of Hazardous Materials.
- Maintain records of all incidents involving Hazardous Materials and notify the ECM, the Department and appropriate authorities in writing of any such incidents.

The Hazardous Materials Manager shall be a qualified professional with 40-hour HAZWOPER certification and at least five (5) years of experience in similar projects and experienced in developing IWPs, SIRs, and remedial action plans or equivalent reports necessary and acceptable to PADEP in material discovery and remediation efforts of Hazardous Materials.

4.6.4 Cultural Resource Management Personnel

The Development Entity shall provide a minimum of two (2) individuals, one of which must meet the Secretary of Interior Standards (SOIS), 36 CFR Part 61 for archaeology and one for architectural history respectively. These individuals are trained and delegated to serve as Cultural Resources Professionals (Development Entity CRPs). In addition to meeting SOIS, each individual must have a minimum of two (2) years of demonstrated experience in the Section 106 process, of which one (1) year is in the Mid-Atlantic Region. Included in consideration of the SOI Standard, the archaeologist must have a minimum of 2 years of experience in the archaeology of the Mid-Atlantic Region, of which one (1) year shall be supervisory. The architectural historian must have a minimum of two (2) years of experience with the architectural history of the Mid-Atlantic Region.

The Development Entity shall provide to the Department the qualifications of all proposed Development Entity CRPs, to include both a resume and a completed Checklist (Attachment 1). The Development Entity is limited to four (4) Development Entity CRPs.

The Department's Cultural Resources Unit Head and the FHWA, in consultation with the PHMC's Bureau for Historic Preservation, will review the qualifications of all proposed Development Entity CRPs and determine whether the proposed individuals meet these requirements. FHWA and the Department's Cultural Resources Unit Head will provide written agreement that the proposed individuals meet the requirements after the proposed Development Entity CRPs successfully complete the training as outlined in the LOA.

Consistent with Stipulation II.F of the Statewide PA, Development Entity agrees to provide proposed individuals to the Department for required training, at the Development Entity's expense, as outlined in the Publication 689, Chapter 15. The Department will take the responsibility for ensuring the proposed Development Entity CRPs have an adequate opportunity to take the required training. Upon successful completion of the training, the Department and the FHWA will delegate the individuals as Development Entity CRPs in respect of the PPA. The Department reserves the right to reject any proposed Development Entity CRP for failure to successfully complete the required training.

The Development Entity shall not have the ability to relieve the Development Entity CRP of his or her duty without the written consent of the Department.

4.6.5 Natural Resource Biologist

The ECM shall designate a Natural Resource Biologist with a BS in Biology or related field and NEPA related experience in the Mid-Atlantic Region to provide expertise in monitoring impacts on wildlife and the natural environment during the course of the Work.

4.6.6 Environmental Compliance Inspectors (ECI)

The ECIs shall conduct on-site environmental monitoring, prepare documentation, and report to the ECM daily all violations, compliance, and noncompliance with Environmental Approvals.

The ECI shall report immediately to the ECM any violation or non-compliance and shall include with any such reports, the appropriate recommendations for corrective action, including, but not limited to, stoppage of Work. The ECIs shall have at least one year construction inspection experience and be familiar with environmental mitigation and associated permitting requirements.

4.6.7 Water Quality Specialist

The ECM shall designate a Water Quality Specialist to provide expertise in permitting delineation, stormwater pollution prevention, and the protection of jurisdictional waters during the course of the Work. The Water Quality specialist shall have education in wetland biology, water pollution biology, or other related environmental sciences and a minimum of two years of experience.

4.7 Property Access

To fulfill the obligations set out in the Department Obtained Governmental Approvals to maintain current access during and after completion of the Construction Work, the Development Entity shall make reasonable efforts to minimize the inconvenience to vehicles, bicycles and pedestrians during the Term. The Development Entity shall maintain access to adjacent properties during the Construction Period and ensure that visibility of businesses is maintained.

4.8 Dust Control

The Development Entity shall institute dust control measures to minimize air quality impacts. The measures shall be adjusted as necessary based on construction traffic, forecasted wind speeds, and persistent dry weather conditions.

4.9 Submittals

The deliverables are discussed throughout the section, but a summary of key deliverables are outlined below:

- List of environmental commitments or mitigation utilizing ECMTS documentation protocol
- Environmental commitment or mitigation modifications or changes for approval by the Department
- NOV's: Provide all correspondence and details of the resolution of warnings and/or violations to the Department
- Provide CEEs and documentation for Bridge and Roadway Programmatic Agreement and all NEPA re-evaluations and supporting documentation through CEES
- Provide the Department on a quarterly basis a spreadsheet detailing the status of all environmental approvals and permits
- Provide permit applications and permits received
- Provide transfer of the Chapter 105/106 permits to the Department at the conclusion of the term of the contract

- Development Entity shall report any maintenance, remedial action or permit modifications of any Post Construction Stormwater Management (PCSM) Facilities constructed for the Project Replacement Bridges to the Department. (Annual – June)
- Development Entity shall provide PCSM inspection reports if PCSM facilities are constructed or modified as part the Project
- State and Federal T&E coordination and mitigation documentation
- Initial and Project Tribal Consultation Forms, as warranted
- Internal communications protocol to ensure free flow of information between Development Entity CRPs and design team and project managers (CRP – Development Entity Communications Plan)
- For each bridge that has historic property mitigation commitments, a list of conditions and stipulations resulting from consultation over adverse effects to historic resources under Section 106. The list and stipulations will form the basis for an MOA to be drafted by the Department.
- Mitigation workplan for adverse effects to historic resources. The work plan will identify the committed action and any associated deliverable, who is responsible for completing the action, the deadline for completing the action, and any additional coordination for completing the action.
- For all completed archaeological investigations, deed of gift for artifacts (if one is obtained, and receipt for payment of curation fees to State Museum.

Rhode Island

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

South Carolina

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes

<http://www.dot.state.sc.us/business/design-build.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes.

http://www.dot.state.sc.us/business/pdf/design-build/Design-Build_Procurement_Manual.pdf

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------|--|
| NEPA | <ul style="list-style-type: none"> • The Design-Build Engineer is responsible for SCDOT’s Design-Build Group (DBG) and oversees the day to day operations, including but not limited to, project selection and approval, ensuring compliance with SCDOT project development process, ensuring National Environmental Policy Act (NEPA) compliance, overseeing project schedules and estimates, and monitoring staff utilization. • Under Schedule, STIP Schedule – A significant step in this evaluation is to provide sufficient time to complete the NEPA document. • Preparation services consist of preliminary engineering services and development of a NEPA document. • As a project nears the end of the design-build preparation phase, i.e. a NEPA decision is pending or has been made, the PM, in coordination with the DM, should update the Risk Matrix as preliminary engineering and the environmental process would have provided a much better understanding of the risks associated with the project. • In most situations, the RFQ will not be advertised until a NEPA determination has been made. However, there may be situations that require an earlier RFQ advertisement in order to maintain the milestone schedule. In these situations, the PM may advertise the RFQ prior to the conclusion of the NEPA review process as long as the RFQ informs the Design-Build Teams of the general status of the NEPA process. • Under RFP Instructions – NEPA Document – This section should be updated to briefly describe the type of NEPA document approved for this project. Only in special cases should the RFP for Industry Review be issued without a final NEPA document. In these cases, the status should be identified in this section. The PM will in no case issue the Final RFP without a final NEPA document; • Under Attachment B, i.e. Supplemental Project Design Criteria, is included as part of the contract documents, not simply for information only. – Environmental <ul style="list-style-type: none"> ○ Jurisdictional determinations ○ NEPA reports ○ Approved permits |

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| | <ul style="list-style-type: none"> • Under Emergency Requests for Proposals – Prior to the issuance of the RFP for Industry Review, the PM should follow the project development process outlined in Section 3.1 of this Manual. This includes, but is not limited to, the following: <ul style="list-style-type: none"> ○ P2S planning and programming; ○ Development of project cost and schedule; ○ Limited survey; ○ NEPA decision; ○ Limited geotechnical exploration; ○ Limited preliminary engineering; ○ Utilities, railroad, and ROW coordination, where applicable; ○ Conflict of interest considerations; |
| <p>Environment</p> | <ul style="list-style-type: none"> • “Discipline Leads” mean the lead persons for all applicable disciplines. Typically, the disciplines include road, structures, hydraulics, and geotechnical in the DBG, as well as pavement, traffic, and environmental in their respective offices. • The guidelines in this Manual will be used in conjunction with other SCDOT Publications and Manuals including, but not limited to, the most recent version of SCDOT’s Preconstruction Project Development Process, Survey Manual, Environmental Reference Guide, Right-of-Way Manuals, Utility Accommodation Policy, Highway Design Manual, Bridge Design Manual, Geotechnical Design Manual, Requirements for Hydraulic Design Studies, Traffic Engineering Manuals, Standard Specifications for Highway Construction, and related Policy Documents or Directives. • The Design-Build Engineer is responsible for SCDOT’s Design-Build Group (DBG) and oversees the day to day operations, including but not limited to, project selection and approval, ensuring compliance with SCDOT project development process, ensuring National Environmental Policy Act (NEPA) compliance, overseeing project schedules and estimates, and monitoring staff utilization. • The discipline leads typically include road, structures, hydraulics, and geotechnical in the DBG, as well as pavement, traffic, and environmental in their respective offices. • Under Approval Process – This committee will be chaired by the Design-Build Engineer and comprised of SCDOT Directors of Preconstruction, Construction, Maintenance, Right-of-Way, Traffic, and Environmental, and District Engineering Administrators dependent upon the candidate project types and locations. • For design-build projects, the planning, concept development, and environmental process activities generally follow the traditional design-bid-build process as described in the Project Development Process. • For design-build projects, sufficient preliminary engineering should be performed to adequately determine preliminary roadway alignments, bridge layouts, geotechnical/subsurface conditions, etc., in order to develop project scope and identify Right-of-Way (ROW) limits, |

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| | <p>potential environmental impacts, and permitting requirements. This preliminary information will be used to define project requirements in the RFP.</p> <ul style="list-style-type: none"> • Therefore, the PM needs to coordinate closely with SCDOT’s Environmental Services Office regarding the level of environmental documentation needed for the project’s scope of work. • Under Risk Matrix – The PM should solicit feedback from each of the following disciplines: roadway, structures, hydraulics, geotechnical, traffic, environmental, ROW, utilities, and construction. • As a project nears the end of the design-build preparation phase, i.e. a NEPA decision is pending or has been made, the PM, in coordination with the DM, should update the Risk Matrix as preliminary engineering and the environmental process would have provided a much better understanding of the risks associated with the project. • Under (RFP) Agreement – Environmental Compliance – The PM should adjust the Article based on the need for a Community and Public Relation Plan; • Under Attachment B, i.e. Supplemental Project Design Criteria, is included as part of the contract documents, not simply for information only. – Environmental <ul style="list-style-type: none"> ○ Jurisdictional determinations ○ NEPA reports ○ Approved permits • Attachment C, i.e. Project Information Package, is for information only. SCDOT does not assume the responsibility for the accuracy or reliability of this information. Items that may be included, but not limited to, are as follows: <ul style="list-style-type: none"> ○ Environmental ○ Preliminary noise wall plans ○ Public information meeting data • Under References – SCDOT Environmental Reference Guide |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>Attachment C, i.e. Project Information Package, is for information only. SCDOT does not assume the responsibility for the accuracy or reliability of this information. Items that may be included, but not limited to, are as follows:</p> <ul style="list-style-type: none"> • Environmental <ul style="list-style-type: none"> ○ Preliminary noise wall plans ○ Public information meeting data |
| Species | No |
| Stormwater | <p>Under Attachment B, i.e. Supplemental Project Design Criteria, is included as part of the contract documents, not simply for information only.</p> <ul style="list-style-type: none"> • Hydraulics <ul style="list-style-type: none"> ○ Stormwater management report ○ Video pipe inspections and reports |

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| | <ul style="list-style-type: none"> ○ Hydraulic design files |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> ● “Design-Build Contract Schedule” means a schedule that accounts for the design and construction-related activities specific to the project. This schedule should take into consideration risk allocation and include final design activities, permitting activities, work restrictions, weather days, and other project-specific scope activities. ● For design-build projects, sufficient preliminary engineering should be performed to adequately determine preliminary roadway alignments, bridge layouts, geotechnical/subsurface conditions, etc., in order to develop project scope and identify Right-of-Way (ROW) limits, potential environmental impacts, and permitting requirements. This preliminary information will be used to define project requirements in the RFP. ● Under STIP Schedule – In addition, potential third party involvement and anticipated permitting should be considered when developing this schedule. ● Under Design-Build Contract Schedule – This schedule should take into consideration risk allocation and include final design activities, permitting activities, work restrictions, weather days, ROW acquisition, utility relocations, and other project-specific scope activities. ● Under (RFP) Agreement – Permits – If SCDOT has or intends to acquire any project permit, the PM will add an initial paragraph to provide instructions; ● Under Attachment B, i.e. Supplemental Project Design Criteria, is included as part of the contract documents, not simply for information only. – Environmental <ul style="list-style-type: none"> ○ Jurisdictional determinations ○ NEPA reports ○ Approved permits |
| Commitment | <ul style="list-style-type: none"> ● In determining which contracting method is most beneficial, the PM needs to be aware of stakeholder’s expectations as well as project commitments. ● Under Attachment B, i.e. Supplemental Project Design Criteria, is included as part of the contract documents, not simply for information only. – Project commitments (ROW, access, etc.) |
| Compliance | <ul style="list-style-type: none"> ● The Design-Build Engineer is responsible for SCDOT’s Design-Build Group (DBG) and oversees the day to day operations, including but not limited to, project selection and approval, ensuring compliance with SCDOT project development process, ensuring National Environmental Policy Act (NEPA) compliance, overseeing project schedules and estimates, and monitoring staff utilization. ● Under (RFP) Agreement – Environmental Compliance – The PM should adjust the Article based on the need for a Community and Public Relation Plan; |
| Monitor | No |

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| Mitigation | <ul style="list-style-type: none"> • The PM will collaborate with all affected SCDOT offices during the identification of risks, development of mitigation strategies, and the overall development of the RFP for a design-build project. • The Risk Matrix should assign the risk to the SCDOT, Design-Build Team, or both, and the PM and DM should discuss mitigation strategies to assign the overall risks. Mitigation strategies could result in additional work by the SCDOT and/or its consultant that would typically be the responsibility of the Design-Build Team or vice versa. |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to monitoring the contractor.

South Dakota

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. The South Dakota Department of Transportation website does not contain information pertaining to alternative procurement processes and procedures or design-build contracts, specifically.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No.

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence |
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| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more NA

Tennessee

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Tennessee Department of Transportation (TDOT) does have a webpage dedicated to explaining the process for design-build contracts which notes, specifically that, “The Department is utilizing the design-build concept to expedite project delivery and streamline design processes.”

<https://www.tn.gov/tdot/tdot-construction-division/transportation-construction-alternative-contracting/design-build.html>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes.

Three separate documents are available to explain the process: “Tennessee Design Build Rules”; “Design Build Lessons Learned”; and “Design-Build Standard Guidance (dated 01-31-17)”. See links below.

https://www.tn.gov/content/dam/tn/tdot/construction/design-build_projects/Design-Build_Guidance_01-31-17.pdf

https://www.tn.gov/content/dam/tn/tdot/construction/design-build_projects/Design_Build_Leasons_learned1.pdf

[https://www.tn.gov/content/dam/tn/tdot/construction/design-build_projects/DB_Rules%20\(1\).pdf](https://www.tn.gov/content/dam/tn/tdot/construction/design-build_projects/DB_Rules%20(1).pdf)

Keyword Search: Y/N. If more than one manual/guidebook, add a table and clarify to which document each column applies.

| Keyword | Presence in “Tennessee_DB_Rules” |
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| NEPA | <ul style="list-style-type: none"> • (18) “NEPA” means the National Environmental Policy Act of 1969. • (31) “Tennessee Environmental Evaluation Report (TEER)” means the environmental evaluation process, similar to the NEPA process, which may be conducted by or for the Department, in accordance with such procedures as the Department may establish, on projects without federal-aid funding or other major federal action where NEPA does not apply. • (d) If a person or entity has participated in preparing the NEPA or TEER document for the proposed design-build project, such person or entity shall not be allowed to respond to the RFQ and/or RFP for that project if: <ul style="list-style-type: none"> • The NEPA or TEER process is not complete prior to the date on which the • proposed design-build project is advertised; or The person or entity has any continuing decision-making responsibilities with respect to the NEPA or TEER process for the proposed design-build project after the date on which the proposed project is advertised. • (8) The RFQ may be released prior to the conclusion of the NEPA or TEER review process as long as the RFQ informs design-builders of the general status of the NEPA or TEER process. Prior to completion of the NEPA or TEER review process, any preliminary |

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| | <p>engineering and other activities and analyses must not materially affect the objective consideration of alternatives in the NEPA or TEER review process.</p> <ul style="list-style-type: none"> • The RFP may allow design-builders to submit one or more alternate technical concepts (ATCs) for preapproval by the date specified within the RFP as long as these ATCs do not conflict with criteria agreed upon in the NEPA or TEER environmental decision making process. |
| Environment | <ul style="list-style-type: none"> • (18) “NEPA” means the National Environmental Policy Act of 1969. • (20) “Preliminary design” defines the general project location and design concepts. It includes, but is not limited to, preliminary engineering and other activities and analyses, such as environmental assessments, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analyses, hydraulic analyses, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments, general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design. • (31) “Tennessee Environmental Evaluation Report (TEER)” means the environmental evaluation process, similar to the NEPA process, which may be conducted by or for the Department, in accordance with such procedures as the Department may establish, on projects without federal-aid funding or other major federal action where NEPA does not apply. • (7) The RFP may allow design-builders to submit one or more alternate technical concepts (ATCs) for preapproval by the date specified within the RFP as long as these ATCs do not conflict with criteria agreed upon in the NEPA or TEER environmental decision making process. • (g) Environmental regulatory requirements, including whether the Department or the design-builder will acquire any or all of the permits required for construction; and |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> • (10) “Design-build” means a project delivery method that combines all or some portions of the design and construction phases of a project – including without limitation design, right-of-way acquisition, regulatory permit approvals, utility relocation, and construction – into a single contract. |

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| | <ul style="list-style-type: none"> • (11) “Design-build contract” means an agreement that provides for the design and construction of a project – which without limitation may include design, right-of-way acquisition, regulatory permit approvals, utility relocation, and construction – into a single contract. • (g) Environmental regulatory requirements, including whether the Department or the design-builder will acquire any or all of the permits required for construction; and |
| Commitment | No |
| Compliance | <ul style="list-style-type: none"> • (10) The RFP may address and identify contract provisions, including but not limited to: (a) Risk allocation according to the type and location of the project, and the following risk factors may be considered: 1. Governmental risks; 2. Regulatory compliance risks; |
| Monitor | No |
| Mitigation | No |

| Keyword | Presence in “Design_Build_Leasons_learned” |
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| NEPA | <ul style="list-style-type: none"> • The RFQ: <ul style="list-style-type: none"> – may be released prior to the conclusion of the NEPA review process. Prior to completion of the NEPA, any preliminary engineering and other activities and analyses will not materially affect the objective consideration of alternatives in the NEPA or TEER review process – informs DBs of the general status of the NEPA process. • The scope should describe in enough detail to produce a proposal: <ul style="list-style-type: none"> – the existing conditions and the expected outcomes; – project’s NEPA Decision Document, and commitments of the document; |
| Environment | No |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | <ul style="list-style-type: none"> • Identifying and Allocating Risk: Issues related to DB contracting that should be reviewed and considered in the allocation of risk and assignment of responsibility includes Permit requirements |
| Commitment | <ul style="list-style-type: none"> • The scope should describe in enough detail to produce a proposal: <ul style="list-style-type: none"> ○ project’s NEPA Decision Document, and commitments of the document; |
| Compliance | <ul style="list-style-type: none"> • Proposal Technical package in response to the RFP includes: |

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| | <ul style="list-style-type: none"> ○ A demonstration of the DB’s approaches to: Expertise, Organization, Project Understanding, Project Management, Schedule Management, Environmental Compliance, Innovation, and Context Sensitive Solutions. |
| Monitor | No |
| Mitigation | No |

| Keyword | Presence in “Design-Build Standard Guidance 01-31-17” |
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| NEPA | <ul style="list-style-type: none"> ● If at any time the design of the project potentially affects the approved FHWA NEPA document, the Design-Builder shall cease work and contact the Department Alternative Contracting Office. ● FHWA – NEPA Document, Programmatic Categorical Exclusion Agreement ● This is to be done through a process developed within the framework of existing requirements, primarily the National Environmental Policy Act (NEPA), Title VI of the Civil Rights Act of 1964 (Title VI), the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (URA), the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and other DOT applicable statutes, regulations and guidance that concern planning; social, economic, or environmental matters; public health or welfare; and public involvement. ● If a BA is necessary, it is usually included with the NEPA document. If a BA is necessary and not included, contact the Department Alternative Contracting Office for further guidance. ● The Design-Builder shall review all the Department material provided, including NEPA (Environmental) document maps, plans, species lists, species maps, USFWS species coordination letter, and other agency letters, as well as other materials available from other sources such as NRCS soils maps and species information available on the internet. |
| Environment | <ul style="list-style-type: none"> ● The Design-Build Standard Guidance is intended to help Design-Builders conduct, design, construction, ROW, utility relocation and environmental regulatory processes of transportation facilities and project administration of projects contracted through the Design-Build program. ● Under Post Award Meeting – Environmental Compliance Plan, if required by the contract; ● Under Quality Program and Quality Plan – Environmental issues ● Section 2.5.4 Environmental Compliance Plan is attached to this assessment. ● Under Change Orders – Occurrence of an environmental situation of a significant nature that would require extensive and time-consuming delays in the work; ● Under Value Engineering Change Proposals – However, the Department will not adopt a VECP that impairs the essential |

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| | <p>functions or performance characteristics of the Project, including, but not limited to, service life, economy of operation, ease of maintenance, designed appearance, structural integrity, environmental requirements, or design and safety standards.</p> <ul style="list-style-type: none">● Under Value Engineering Change Proposals –The costs involved in adjusting the ROW or environmental approvals (which shall be based on the Design-Builder’s additional costs, such as for providing real property acquisition support services, including profit, plus the Department’s additional costs, including land acquisition, appraisals, negotiation, relocation, condemnation, closing, property management, and environmental permitting, specifically including allocated costs of the Department personnel involved in the acquisition);● With the exception of activities relating to environmental approvals by governmental entities, each activity depicting the Design-Builder’s operations shall have duration of not less than one Day.● The Tennessee Water Quality Control Act (T.C.A. §69-3-101, et seq.) and all implementing regulations, including without limitation the Rules of the Tennessee Department of Environment and Conservation governing NPDES permits in Chapter 1200-4-10, and Aquatic Resource Alteration Permits in Chapter 1200-4-7; Class V Injection Well Permits for work in or near sinkholes;● An emphasis shall be placed on maintaining the construction project in regard to environmental requirements.● Various Programmatic Environmental Documents are as follows:● FHWA – NEPA Document, Programmatic Categorical Exclusion Agreement.● SHPO MOUs for:<ul style="list-style-type: none">○ Miscellaneous Improvements;○ Improvements Made under the Highway-Rail Grade Crossing Program;○ Intersection Improvements;○ Improvements Made under the Pavement Management Program;○ Improvements for Roadside Safety;○ Culvert Repair and Replacement under the Small Structures Program;○ Bridge Repairs.● US Fish & Wildlife Service MOA for:<ul style="list-style-type: none">○ Bridge repair projects except over certain high-quality streams;○ Turning lane projects;○ Traffic signals;○ Guardrails;○ Railway signals & signs;○ Maintenance of roadway ditches & catch basins. |
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| | <ul style="list-style-type: none">• TWRA - pending agreement about stream access points adjacent to bridge projects.• TESA – Multiagency agreements.• All substantive contact with regulatory Authorities by the Design-Builder shall be conducted by the appropriate, qualified environmental task lead or the Environmental Manager. The Design-Builder shall fully review guidance material available on the regulatory Authorities’ Internet sites before contacting the Authorities. The Design-Builder shall not contact the regulatory Authorities before the Department’s Acceptance of the Environmental Compliance Plan without prior approval of the Department.• The Design-Builder shall provide monthly environmental status and compliance reports to the Department. In addition, the Design-Builder shall arrange and schedule bi-weekly meetings, depending on the level of permitting and construction activity in or adjacent to environmentally sensitive areas with the Department to review Project compliance with permits and approvals. Meeting minutes shall be prepared and distributed within five (5) Business Days of the meeting.• Under Definitive Design Review – Environmental technical studies have been performed;• Under Definitive Design Review Plan Submittals – The transmittal may include preliminary reports on additional site investigations, a foundation report, hydraulic report, slope stability report, environmental findings, etc., applicable to the design and in support of the design decisions made.• The “Design Certification Letter” shall also contain a listing of project commitments including environmental, planning, ROW, and any other commitments.• Under Construction – The design and drawings for the Traffic Control Plan and temporary erosion prevention and sediment control and environmental measures applicable to the work have been properly completed; and• Under Construction – Department has provided Review and Comment regarding the RFC Plans and Specification and applicable Traffic Control Plan, temporary erosion prevention and sediment control measures, and environmental requirements.• Under Pre-Construction – It shall be held (the Department’s Standard Specifications Section 105.06) by the Design-Builder Project Manager to discuss the Design-Builder’s plan of operation, required contract provisions, environmental commitments if applicable, erosion prevention and sediment control, traffic control/work zone safety, utility relocations, inspection, materials acceptance, independent assurance, quality control plans, certified payrolls, DBE/Subcontractors, and to establish the level of detail to be required for measuring progress with regard to construction |
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| | <p>Pay Items, in accordance with this DB Standard Guidance. At a minimum, the following shall be submitted at the pre-construction meeting:</p> <ul style="list-style-type: none">○ Traffic Control Plan;○ Environmental Compliance Plan, if required by the Contract;○ Erosion Prevention and Sediment Control Plan; and○ Transportation Management Plan <ul style="list-style-type: none">● A separate Pre-Construction Conference (Pre-Erosion Conference) may be necessary due to the magnitude of environmental work or impacts related to the Contract.● The Department has the authority to suspend all work until all environmental deficiencies concerning environmental permits are alleviated.● The Storm Water Pollution Prevention Plan (SWPPP), the Erosion Prevention and Sediment Control (EPSC) plans, and all applicable environmental permits shall be adhered to on the project.● Various permits require routine inspections of EPSC measures, documentation of environmental issues that arise, and completion of various reports. The Design-Builder shall be responsible for compliance with all applicable environmental regulations, including reporting and records keeping.● It is essential that the SWPPP and EPSC plans be followed, and revised as needed, to fully comply with all environmental permits on the Design-Build Project.● Repair and maintenance of all EPSC measures shall be made within 24 hours after any environmental inspection or assessment.● Whether or not any environmental permits are required, if any land disturbance (including clearing and grubbing) activities occur on the Design-Build project, EPSC measures are required to prevent erosion and control sediment from leaving any work site associated with the Design-Build project and inspected on a routine basis.● All environmental permits, reports and documentation shall be kept at a location within the work site at all times during construction. At any time a regulatory agency requests to view any written environmental information on the Design-Build Project, the Design-Builder must comply with this request in a timely manner.● Section 7.2.7 Environmental Quality Assurance Project Assessments is attached to this assessment.● Under Retention of Records – Environmental Documents● Section 8.2 is attached to this assessment.● The References section is attached to this assessment.● “Context Sensitive and Sustainable Solutions” are solutions that (a) reflect social values (community values; cultural, aesthetic, and historic resources; and diversity); (b) maintain safety and mobility; |
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| | <p>and (c) support economic prosperity. “Sustainable solutions” are those that achieve responsible stewardship of the natural environment and optimize long-term performance.</p> <ul style="list-style-type: none">• “Environmental Boundaries” are the determined impacts of the proposed alternative alignment shown on the plans within a specified distance from the proposed centerline (i.e. streams, wetlands, sinkholes, etc.).• “Environmental Boundary Studies” are studies within a specified distance from the proposed centerline to determine the impacts of the proposed alternative alignments conducted by degreed biologists including literature and database surveys as well as on-foot reconnaissance with particular attention to locating streams, wetlands, and specialized habitats such as glades, caves, springs, and sinkholes which could harbor protected species or influence water quality.• “Preliminary Design” defines the general project location and design concepts. It includes, but is not limited to, preliminary engineering and other activities and analyses, such as environmental assessments, environmental boundaries studies, topographic surveys, metes and bounds surveys, geotechnical investigations, hydrologic analysis, hydraulic analysis, utility engineering, traffic studies, financial plans, revenue estimates, hazardous materials assessments (including pyritic materials), general estimates of the types and quantities of materials, and other work needed to establish parameters for the final design.• For construction workmanship and materials Quality Management, this includes, but is not limited to: (a) procedures for materials handling and for evaluating, establishing, monitoring, and maintaining construction quality; (b) inspection of source development and aggregate production plants, fabrication and production of manufactured products, and materials certification; (c) inspection, sampling and testing of materials and manufactured products; (d) calibration and maintenance of equipment; (e) production process control; and (f) monitoring of environmental compliance.• “Regulated Work Area” is the portion of each work location that is located below the Ordinary High Water Elevation (OHWE) or is otherwise regulated by the Tennessee Department of Environment and Conservation (TDEC), the U.S, Army Corps of Engineers (USACE) and/or the Tennessee Valley Authority (TVA). All issue permits with restrictions that apply to work within the Regulated work Area. Other authorizations, including the Biological Opinion or Letter of Concurrence from the Tennessee Wildlife Resources Agency (TWRA) and/or the United States Fish and Wildlife Service (USFWS), may also contain work restrictions relative to the area. Unless otherwise noted in the issued permits or authorizations, the entire area within the Regulated work Area |
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| | <p>is regulated by any in-water work restrictions, including the in-water work period, for the purposes of permit conditions, whether or not some of these areas become seasonally or periodically exposed as dry ground.</p> <ul style="list-style-type: none"> • Appendix B is attached to this assessment. |
| Cultural (resource) | <ul style="list-style-type: none"> • Environmental controls and mitigation methods such as, but not limited to: (5) Cultural resources protection. • “Context Sensitive and Sustainable Solutions” are solutions that (a) reflect social values (community values; cultural, aesthetic, and historic resources; and diversity); (b) maintain safety and mobility; and (c) support economic prosperity. |
| Historic | <ul style="list-style-type: none"> • “Context Sensitive and Sustainable Solutions” are solutions that (a) reflect social values (community values; cultural, aesthetic, and historic resources; and diversity); (b) maintain safety and mobility; and (c) support economic prosperity. • “Design-Build Project Estimate” is the Department’s Project cost estimate prepared from Project-specific features, components and issues; this estimate is based upon historical the Department cost data, trends, and market forecasting. • A TDEC permit may also be required when activities such as core sampling, seismic exploratory operations, soil surveys, soil sampling, and historic resources surveys are within waters of the state. This permit is also required for placement and operations of scientific measurement devices. |
| Archaeological | <ul style="list-style-type: none"> • It is the responsibility of the Design-Builder to know and comply with all state and federal legislation concerning the discovery of human remains in archaeological contexts. • The Design-Builder is required to comply with all safety standards as specified by the Department, FHWA, and OSHA and must provide all appropriate safety equipment to field personnel. Safety guidelines and procedures for archaeological fieldwork can be found in Gorton (1999). |
| Paleontological | No |
| Noise | <ul style="list-style-type: none"> • Environmental controls and mitigation methods such as, but not limited to: (6) Noise control. |
| Species | <ul style="list-style-type: none"> • Waterway and aquatic species protection. • The Design-Builder assumes all legal responsibilities of the permittee for a Design-Build Project (whether or not they obtain the permits) as indicated in the permit that relate to protection of species, "waters of the United States", 'waters of the State of Tennessee", and/or a Biological Assessment addressing any potential impacts to endangered, threatened, or otherwise protected species under federal and/or state laws, obtaining concurrence from USFWS and TWRA of any needed Biological Assessment and related species protection activities or techniques |

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| | <p>pursuant to the legal relations and responsibilities within this DB Standard Guidance.</p> <ul style="list-style-type: none"> • “Environmental Boundary Studies” are studies within a specified distance from the proposed centerline to determine the impacts of the proposed alternative alignments conducted by degreed biologists including literature and database surveys as well as on-foot reconnaissance with particular attention to locating streams, wetlands, and specialized habitats such as glades, caves, springs, and sinkholes which could harbor protected species or influence water quality. • The biological community of intermittent streams is composed of species that are aquatic during a part of their life history or move to perennial water sources. • Please see Appendix B (attached) |
| Stormwater | <ul style="list-style-type: none"> • The Design-Builder shall not begin any On-Site work (or as specified) until the Design-Builder has completed the following: <ul style="list-style-type: none"> ○ No grading shall occur until all applicable water quality permits and stormwater permit coverage are received for the entire project (posted on-site); |
| Erosion | <ul style="list-style-type: none"> • Environmental controls and mitigation methods such as, but not limited to: (1) Erosion Prevention and Sediment Control and water quality, indicating orange fencing placed around all sensitive areas that will not be affected by the project, so as not to disturb areas. • Under Definitive Design Review – Erosion Prevention and Sediment Control Plans. • Under Readiness for Construction Design Review – Erosion and Sediment Control Plans; • Under Construction – The design and drawings for the Traffic Control Plan and temporary erosion prevention and sediment control and environmental measures applicable to the work have been properly completed; and • Under Pre-Construction – It shall be held (the Department’s Standard Specifications Section 105.06) by the Design-Builder Project Manager to discuss the Design-Builder’s plan of operation, required contract provisions, environmental commitments if applicable, erosion prevention and sediment control, traffic control/work zone safety, utility relocations, inspection, materials acceptance, independent assurance, quality control plans, certified payrolls, DBE/Subcontractors, and to establish the level of detail to be required for measuring progress with regard to construction Pay Items, in accordance with this DB Standard Guidance. • At a minimum, the following shall be submitted at the pre-construction meeting: <ul style="list-style-type: none"> ○ Traffic Control Plan; ○ Environmental Compliance Plan, if required by the Contract; ○ Erosion Prevention and Sediment Control Plan; and |

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| | <ul style="list-style-type: none"> ○ Transportation Management Plan ● A separate Pre-Construction Conference (Pre-Erosion Conference) may be necessary due to the magnitude of environmental work or impacts related to the Contract. The appropriate individuals, the Department, utility Representatives, Design-Builder, Subcontractors, Municipal Representatives, etc. shall be invited to the Pre-Erosion Conference. ● Section 7.2.6 EPSC Inspection is attached to this assessment. ● Please see Section 7.2.7 (attached) ● Please see References (attached) ● Please see Appendix B (attached) |
| Permit | <ul style="list-style-type: none"> ● No grading shall occur until all applicable water quality permits and stormwater permit coverage are received for the entire project (posted on-site); ● Please see Section 2.5.4 (attached) ● The costs involved in adjusting the ROW or environmental approvals (which shall be based on the Design-Builder's additional costs, such as for providing real property acquisition support services, including profit, plus the Department's additional costs, including land acquisition, appraisals, negotiation, relocation, condemnation, closing, property management, and environmental permitting, specifically including allocated costs of the Department personnel involved in the acquisition); ● The CPM Schedule shall also include activities, if applicable to the Contract, for property acquisition, utility adjustments, permit acquisitions, and interfaces with other projects, localities, municipalities and other governmental entities. ● Section 5.2.9, Regulatory Permits, is attached to this assessment. ● If a NPDES Construction General Permit (CGP) is required for the Project, the Design-Builder shall prepare a Storm Water Pollution Prevention Plan (SWPPP) utilizing the Department SWPPP template and a Notice of Intent (NOI). ● In addition, the Design-Builder shall arrange and schedule bi-weekly meetings, depending on the level of permitting and construction activity in or adjacent to environmentally sensitive areas with the Department to review Project compliance with permits and approvals. ● The Design-Builder shall also be responsible for obtaining any permits or authorizations, if any, that may be required as a result of the changes. ● Note: If the project involves fiber-optic or electric wire-line crossings over railroad ROW, the Design-Builder must send the plans for, and pre-pay the processing fees to the Railroad's Property Services or Permit Dept. for execution of a wire-line crossing agreement. ● It is understood and agreed that the Design-Builder shall obtain and pay for any additional permits required by the method of |

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| | <p>construction, including without limitation haul roads, temporary channels or temporary ditches, and/or off-site waste and/or borrow areas and shall be included in the Contract Amount.</p> <ul style="list-style-type: none">• The Department has the authority to suspend all work until all environmental deficiencies concerning environmental permits are alleviated. No additional time shall be added to the Contract due to this work stoppage.• Please see Section 7.2.6 (attached)• Please see Section 7.2.7 (attached)• Please see References (attached)• “Design-Build” means a project delivery method that combines all or some portions of the design and construction phases of a project – including without limitation design, right-of-way acquisition, regulatory permit approvals, utility relocation, and construction – into a single contract.• “Design-Build Contract” means an agreement that provides for the design and construction of a project – which without limitation may include design, rights-of-way acquisition, regulatory permit approvals, utility relocation, and construction – into a single contract.• “Laws or Legal Requirements” are statutes, regulations, rules, ordinances, codes, permits, opinions, orders, judgments, and decrees issued by Authorities. In each case, unless otherwise expressly stated in the Contract, the law is to be understood to be the current version in effect at the time the event governed by the law takes place. This applies regardless of whether a specific law has been cited, included, summarized, or paraphrased in the Contract.• Mitigation is required for all stream relocations, encapsulations and wetland impacts which do not meet requirements for General Aquatic Resource Alterations Permits (TDEC), or for certain Nationwide Section 404 permits (USACE).• “Project Records” are all information in any way relating to the Project or performance of the Contract whether any of such records are paper-based, in the form of electronic data or in electronic/digital format, capable of being reduced to paper-based or electronic/digital format, in audio format, or constitute visual reproductions such as photos or videotape, in any way relating to the Project, including but not limited to all: financial and accounting records and information; correspondence, internal communications, communications with the Department and Authorities, notices, orders, permits, opinions, field notes, file notes, and diary entries; survey drawings, reports, maps, original computations and other data; and materials testing records, materials certifications; work product; and all other documents and information generated by or for, or received by, the Design-Builder in performance of the Contract. |
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| | <ul style="list-style-type: none"> • “Regulated Work Area” is the portion of each work location that is located below the Ordinary High Water Elevation (OHWE) or is otherwise regulated by the Tennessee Department of Environment and Conservation (TDEC), the U.S. Army Corps of Engineers (USACE) and/or the Tennessee Valley Authority (TVA). All issue permits with restrictions that apply to work within the Regulated work Area. Other authorizations, including the Biological Opinion or Letter of Concurrence from the Tennessee Wildlife Resources Agency (TWRA) and/or the United States Fish and Wildlife Service (USFWS), may also contain work restrictions relative to the area. Unless otherwise noted in the issued permits or authorizations, the entire area within the Regulated work Area is regulated by any in-water work restrictions, including the in-water work period, for the purposes of permit conditions, whether or not some of these areas become seasonally or periodically exposed as dry ground. • “Stakeholders” for the Project may include the following: (a) the State, primarily represented by the Department, including its subsidiary agencies and departments; (b) FHWA, for federal-aid projects; (c) other states and/or multi-state Authorities directly affected by or cooperating with the development of the Project; (d) federal and State regulatory and permitting agencies having jurisdiction over portions of the work or Project Site; (e) Native American Tribes and tribal members of Tennessee affected by the Project; (f) counties, cities, towns, and villages within the State directly affected by the Project; (g) other public or private entities impacted or potentially impacted by the Project, such as political subdivisions, Utility owners, transit systems, and railroads; and (h) other entities specifically identified by the Department. • “Temporary Right of Entry” is temporary legal authority to enter onto private property for a purpose specified in the permit. • Please see Appendix B (attached) |
| Commitment | <ul style="list-style-type: none"> • The “Design Certification Letter” shall also contain a listing of project commitments including environmental, planning, ROW, and any other commitments. • For all Design-Build Projects: The following project commitments have been made and are reflected in the plans. • At least ten (10) Calendar Days prior to the pre-construction meeting, the Design-Builder shall furnish the Department a complete plan of operations. It shall be held (the Department’s Standard Specifications Section 105.06) by the Design-Builder Project Manager to discuss the Design-Builder’s plan of operation, required contract provisions, environmental commitments if applicable, erosion prevention and sediment control, traffic control/work zone safety, utility relocations, inspection, materials acceptance, independent assurance, quality control plans, certified payrolls, DBE/Subcontractors, |

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| | <p>and to establish the level of detail to be required for measuring progress with regard to construction Pay Items, in accordance with this DB Standard Guidance.</p> |
| <p>Compliance</p> | <ul style="list-style-type: none"> • Under Assignment of Funds – It is understood that the Department acts on the behalf of FHWA for the administration of construction projects and that in accordance with federal regulations, funds may be withheld for non-compliance of federal rules and regulations (23 CFR 1.36): “If the Administrator determines that a State has violated or failed to comply with the Federal laws or the regulations in this part with respect to a project, he may withhold payment to the State of Federal funds on account of such project, withhold approval of further projects in the State, and take such other action that he deems appropriate under the circumstances, until compliance or remedial action has been accomplished by the State to the satisfaction of the Administrator.” • Under Post Award Meeting – Environmental Compliance Plan, if required by the contract; • Under Quality Program and Quality Plan – Compliance with Programmatic Plans; • Please see Section 2.5.4 (attached) • The Design-Builder shall not contact the regulatory Authorities before the Department’s Acceptance of the Environmental Compliance Plan without prior approval of the Department. • Under Wild and Scenic Rivers – The Design-Builder shall provide monthly environmental status and compliance reports to the Department. In addition, the Design-Builder shall arrange and schedule bi-weekly meetings, depending on the level of permitting and construction activity in or adjacent to environmentally sensitive areas with the Department to review Project compliance with permits and approvals. Meeting minutes shall be prepared and distributed within five (5) Business Days of the meeting. • The following is an outline of the basic necessities and procedures for acquiring ROW by a Design-Builder in compliance with Tennessee Department of Transportation (the Department) policies and the Federal Uniform Relocation Assistance and Real Property Acquisition Policies Act. • Under Pre-Construction – Environmental Compliance Plan, if required by the Contract; • Please see Section 7.2.6 (attached) • Section 8.1, Title VI Compliance Reviews, is attached to this assessment. • Please see Section 8.2 (attached) • “Quality Management” is the activities performed by the Design-Builder to ensure that the work meets all Contract requirements, including documentation of all Quality Program activities. For design Quality Management, this includes, but is not limited to: (a) procedures for evaluating, establishing, monitoring, and |

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| | <p>maintaining design quality; (b) Design Reviews, and (c) design checks, evaluations, and review of Design Documents for constructability, conformance to applicable design professional standards of practice, and compliance with the law, regulations, applicable standards, and other Contract requirements. For construction workmanship and materials Quality Management, this includes, but is not limited to: (a) procedures for materials handling and for evaluating, establishing, monitoring, and maintaining construction quality; (b) inspection of source development and aggregate production plants, fabrication and production of manufactured products, and materials certification; (c) inspection, sampling and testing of materials and manufactured products; (d) calibration and maintenance of equipment; (e) production process control; and (f) monitoring of environmental compliance. Quality Management also includes preparation of all Quality Management documentation required under the terms of the Contract.</p> |
| <p>Monitor</p> | <ul style="list-style-type: none"> • (b) Prevent the occurrence of design and construction non-conformances through active and effective monitoring of processes; and • The Design-Builder shall monitor and document work activities to validate full compliance with the environmental requirements. • (m) Procedures for inspection, monitoring, and corrective and preventive actions • (n) Procedures for final monitoring inspections to assess compliance with permit requirements. Permits can require monitoring for up to 5 years for temporary wetland impacts, relocated streams, pyrite encapsulation, etc. • The Design-Builder’s Safety Plan shall provide for the following: ☐ Liaison with the Department’s monitoring staff; • The Design-Builder shall submit all monitoring reports and records of checks and reviews within seven (7) Calendar Days of the completion of the applicable review. • Monitoring reports of all design issues and review comments resulting from the scheduled and additional checks and reviews, including final resolution of those issues and comments. • Final Design Report - Upon completion of the Readiness-for-Construction Plans and Specifications, the Design Quality Manager shall notify the Design-Builder, with a copy to the designated the Department contact, of any outstanding monitoring report issues or unresolved review comments or nonconformances. • For construction workmanship and materials Quality Management, this includes, but is not limited to: (a) procedures for materials handling and for evaluating, establishing, monitoring, and maintaining construction quality; (b) inspection of source development and aggregate production plants, fabrication and production of manufactured products, and materials certification; |

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| | <p>(c) inspection, sampling and testing of materials and manufactured products; (d) calibration and maintenance of equipment; (e) production process control; and (f) monitoring of environmental compliance. Quality Management also includes preparation of all Quality Management documentation required under the terms of the Contract.</p> |
| <p>Mitigation</p> | <ul style="list-style-type: none"> • If any environmental permits are required for the construction of the project, the Design-Builder shall prepare and implement an Environmental Compliance Plan within 30 days of the initial NTP and shall update the plan as needed, as new fieldwork is completed, and as new or modified mitigation or environmental compliance strategies are developed throughout the term of the Contract. • The Environmental Compliance Plan is part of the Quality Plan and shall be formally Accepted by the Department. New information or modified information, mitigation plans, and compliance strategies developed throughout the term of the Contract and added to the Environmental Compliance Plan shall also be formally Accepted by the Department through the submission of an updated Quality Plan. All permits, clearances, and approvals shall be incorporated into the Environmental Compliance Plan as they are issued by the regulatory Authorities and shall become part of the Quality Plan. • Environmental controls and mitigation methods such as, but not limited to: <ul style="list-style-type: none"> ○ Erosion Prevention and Sediment Control and water quality, indicating orange fencing placed around all sensitive areas that will not be affected by the project, so as not to disturb areas.. ○ Dust control and air quality. ○ Wetland and wildlife protection. ○ Waterway and aquatic species protection. ○ Cultural resources protection. ○ Noise control. ○ Hazardous material/waste management. ○ Floodplains in accordance with 23 CFR Part 650 Subpart A. • The Design-Builder shall provide the Department with a narrative report covering issues on the project and recommendations, including cut and fill slope design, foundation recommendations, special notes and mitigation of problem areas for the Department’s Review and Acceptance. • These plans shall typically have in preferred order the following sheets: Wetland Mitigation Plans; • The Design-Builder coordination with the railroad will require a letter stating what crossing mitigation is recommended, whom to contact concerning coordination, who will be paying the railroad for engineering, if drainage or conduit will be installed, specifications of the material, proposed installation method, etc. |

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| | <ul style="list-style-type: none"> • “Mitigation” is the restoration, enhancement, or preservation of a natural resource for the purpose of compensating for unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization have been achieved. Mitigation is required for all stream relocations, encapsulations and wetland impacts which do not meet requirements for General Aquatic Resource Alterations Permits (TDEC), or for certain Nationwide Section 404 permits (USACE). Mitigation could include on-site replacement, off-site replacement, contributing funds to a wetland bank or site and contributing funds to the TWRP TSMP InLieu Fee Program. • “Transportation Management Plan” is the tool used to itemize and describe mitigation strategies for every work zone having the Department oversight and is used to plan transportation management strategies meeting both the Department’s goals and the requirements of the federal Work Zone Safety and Mobility Rule. • TSMP Tennessee Stream Mitigation Program (TWRP) • All written communication with USFWS, all field meetings with USFWS, and substantive discussions of conclusions and mitigation will be arranged via the designated Department Biologist. • Please see Appendix B: Ecological Studies (attached) |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

Various practices/processes are detailed in Chapter 5 of the TDOT Design-Build Standard Guidance document, which is available online, including: regulatory permits, design reviews, wild and scenic rivers, and soils and geology. Chapter 7 describes environmental quality assurance project assessments in Section 7.2.7.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

Monitoring is covered under Section 2.5 of the TDOT Design-Build Standard Guidance document, which is available online.

APPENDIX B

ECOLOGICAL STUDIES

INVESTIGATOR QUALIFICATIONS FOR PERFORMING ECOLOGY-RELATED WORK

Unless otherwise specified by the Department, all personnel conducting field studies or preparing ecology reports must be degreed biologists - at least a bachelor's in biology (Biologist). Non-biologists may assist with studies only under the on-site supervision of a Biologist, and may not write reports. Unsupervised use of non-biologists will be allowed only with prior Department approval, and will usually be acceptable only for tasks such as water bottle collection not requiring habitat notes.

Personnel conducting wetland identifications and/or delineations must be a Biologist and submit evidence of wetland delineation training acceptable to the Department. The Department may, at its discretion, prohibit personnel in conducting studies where the training is considered inadequate or where follow-up studies indicate misidentification.

The Department may require participation or supervision by subject-matter experts such as chemists, geologists, expert botanists, or malacologists, etc. These will be specified on the **Contract Book 3 (Project Specific Information)**.

If a BA is necessary, it is usually included with the NEPA document. If a BA is necessary and not included, contact the Department Alternative Contracting Office for further guidance.

It is expected that the Design-Builder be familiar with the Endangered Species Act of 1973, amended, and with the Interagency Coordination regulations issued pursuant to the Act, and that the Biological Assessment (BA) be prepared in keeping with these guidelines.

The Design-Builder will not conduct any coordination with U. S. Fish and Wildlife Service (USFWS) as this is the responsibility of TDOT/Federal Highway Administration. All written communication with USFWS, all field meetings with USFWS, and substantive discussions of conclusions and mitigation will be arranged via the designated Department Biologist. The Design-Builder may be required by the designated Department Biologist to attend meetings with USFWS, either on-site or in the office. The designated Department Biologist will be present at all such meetings.

The Design-Builder may also be provided with the following letters, depending on what is indicated for federally and/or state listed species:

For Federally Listed Species: A USFWS species letter or the USFWS Memorandum of Agreement (the MOA applies only to small projects in areas not known to harbor protected species);

For State Listed Species:

Animals: A Tennessee Wildlife Resources Agency (TWRA) coordination response letter

When a species review indicates there are known occurrences for state listed animals near a project, the Design-Builder shall coordinate with the designated Department Biologist for directions on addressing these species with TWRA. TWRA will need the list of species that were noted during the database review as well as a brief project description. TWRA personnel will review this information and provide comments regarding the potential project impacts to the

listed species. TWRA may also provide direction and notes that will protect the species of concern.

Plants: A Tennessee Department of Environment and Conservation Division of Natural Areas (DNA) coordination response letter.

When the species review indicates state listed plants are near a project, the the Design-Builder shall coordinate with the designated Department Biologist for directions on coordination with DNA. If coordination is warranted, DNA will need the list of plant species that were noted during the database review as well as a brief project description. DNA personnel will review this information and provide comments regarding the potential project impacts to the listed species. DNA may also provide direction and notes that will protect the species of concern. Coordination with DNA may also be required if during the course of the field survey it is determined that a listed plant may be impacted by the proposed project.

If there are no records for listed plant or animal species within the area of review, coordination with TWRA or DNA will not be required and this will be indicated by the Department.

INVESTIGATOR QUALIFICATIONS RECORD

Project: County _____
Route _____
Termini _____
PIN _____
P.E. # _____

Investigator:

Name _____
Title with Firm _____
Firm Name _____

Tasks Completed on Project:

Education: B.S/B.A _____ M.S / (B.A. or B.S) _____ **PhD.** _____

Degree Specialization

Fisheries/Wetlands/Aquatics _____
Botany _____
Other _____

*** Repeat the above information for all investigators.**

The following information will be provided by the Department:

ROUTINE ENVIRONMENTAL BOUNDARIES AND MITIGATION DESIGN REPORT

This will discuss the results of an ecological evaluation and Form G prepared by the Department. It will identify any known wetlands, streams, protected species (state and federal), including any Biological Assessment, and mitigation needs. The Design-Builder shall review this report for any resources not identified. If any additional resources are found, the Design-Builder shall prepare an additional report for the Department to Review and Accept. If an amended BA or a new BA is required, it will be prepared using Scopes E and F unless otherwise noted.

The Design-Builder shall review all the Department material provided, including NEPA (Environmental) document maps, plans, species lists, species maps, USFWS species coordination letter, and other agency letters, as well as other materials available from other sources such as NRCS soils maps and species information available on the internet.

The field studies conducted by the Department identify any features and/or resources requiring documentation, avoidance, protection and/or mitigation. These field studies include, but are not limited to, identification of streams and wetlands, wet-weather conveyances, specialized habitats and protected species, areas of disturbance, etc. Any soil type shown on the NRCS soils map as hydric or having hydric inclusions will be specifically examined and documented. Habitat analysis to address protected species will be documented in the Ecological Field Data Sheet. If supplemental studies are necessary, the Design-Builder shall use Form G.

It is important that all areas be investigated and documented. The Design-Builder supplemental studies will update, and revise the Department supplied studies. The tabular format of Form G is intended to provide an easy means of identifying and evaluating new or changed information as a project progresses. Form G should, therefore, build upon previous project documents rather than replace them.

During the project plans development, the information provided in the Department supplied Form G information shall be used to accurately locate natural resources on the plans and determine impacts associated with the proposed alignment. Form G shall accompany permit applications and shall be used as a basis for erosion prevention and sediment control (EPSC) design. Form G is also used to initially document natural resource locations and potential impacts for smaller projects not requiring narrative reports.

** Note that the study area for projects extends 100 feet either side of the proposed right-of-way and easement lines. Boundary surveys (e.g., wetland boundaries) should also extend at least 100 feet beyond the right-of-way and easement lines on the plans. The Design-Builder shall not show a closed boundary at the limit(s) of the survey for features that continue well beyond the project limits and proposed right-of-way (e.g., a wetland that extends beyond the study area limits).

Mark the plans according to the location and label using the map label (e.g., STR-1, WTL-2, WWC-1), any TierII/Tier III streams, 303(d) streams, or other important information (e.g., Wildlife Management Area, National Forest, State Park).

If the Design-Builder does not receive a letter indicating that there are no species, the Design-Builder shall contact the Department Alternative Contracting Office or the designated Department Biologist for further guidance.

In the event that specialized studies such as diving for mussels or mist-netting for bats is required in a Biological Assessment or by the Department supplied information, contact the Department Alternative Contracting Office or the designated Department Biologist for further guidance.

Trespassing & Safety

Typically, the Department does not contact affected landowners for the specific purpose of conducting ecology studies; however, other divisions of the Department have likely been in contact with the landowners prior to the ecology study and the landowners are usually aware that a Department project may impact their property. You should not assume permission has been granted to trespass on a piece of property. If you are unable to secure permission to access a posted piece of property, are told to leave by a landowner or are unable to safely survey an area for other reasons, leave the project site and contact the appropriate Department regional biologist. Do not jeopardize your safety or the safety of others in order to complete a field survey.

Supplemental Ecology Field Data Sheets

Detailed instructions for completing the *Water Resources*, *Wetlands* and *Other Resource Features* field data sheets

This is comprised of three field data sheets which are designed to document Water Resources, Wetlands, Other Resource Features and Potential Mitigation Sites (streams and wetlands) associated with a project. All three of the field data sheets are intended to be completed in the field to ensure that the appropriate attributes for each resource feature (e.g., streams, wetlands) are documented. The *Water Resources* data sheet should be used to document streams, springs, seeps, ponds, quarries, lakes and wet weather conveyances. The *Wetlands* field data sheet should be used to document wetlands as well as potential mitigation sites – this data sheet does not replace the wetland determination form. The *Other Resource Features* data sheet should be used to document caves, rock shelters, sinkholes, specialized habitats, management areas, and protected species, as well as other features that may affect a project.

All known resource features associated with a project will be documented by the Department using the Form G field data sheet. If the Design-Builder is unable to survey/sample/measure certain aspects of a feature, note that information was unable to be gathered and indicate the reason (e.g. unable to survey fish/benthos/substrate due to high flow, near vertical stream banks etc.).

If Design-Builder believes that a stream looks “really nice” (this is a judgment call) but the stream is not included in the list of Tier II and Tier III streams in TN, indicate in the NOTES portion of the forms that the feature may be considered a Tier II or Tier III stream. This will indicate that the stream should be evaluated for Tier status prior to applying for permits.

The Water Resources field data sheet is to be used to document streams, springs, seeps, ponds, quarries, lakes, and wet weather conveyances. For Water Resources, provide the following:

- Classification:
 - Perennial stream, Intermittent stream, Wet Weather Conveyance or Ditch;
 - Pond, lake, or quarry;
 - Impoundment;
 - Spring (perennial or wet weather);
 - Seep;
 - Swale (sometimes used when a culvert is present, but a watercourse is not);
 - None (when a culvert is present, but no watercourse or other aquatic resource or channel is present – on plans label as “none – no feature present”);
 - Others - Contact designated Department Biologist.
- Blue-line on topo? (y/n): Is it marked as a blue-line on the topographic map? Indicate using “yes” or “no”.
- Defined Channel (y/n): Is a defined channel present?
- Channel Bottom Width: Indicate how wide the channel is, in feet. It could range from, for example, 3’ to 7’;
- Top of Bank Width: Indicate how wide the channel is at the top of its banks, with ranges if applicable; e.g., 7’ to 11’ (this is not Rosgen bankfull width);

- Bank Height: Indicate height of the banks, with ranges if applicable;
- Substratum: Provide approximate percentages of the composition of the substratum (boulders 60%, cobbles 20%, pebbles 10%, granules 10% **or** boulders 60%, Gravel 40%). Indicate if vegetation is growing in channel, or if dry leaf litter is present.
- Estimate width of the buffer within the present/proposed right-of-way. If the width of the buffer zone is similar upstream and downstream of the alignment (existing or proposed) list the average width of the buffer zone for each bank (LB & RB). If the width of the buffer zone differs greatly (>20 ft difference) upstream versus downstream of the alignment, indicate the width for each bank both upstream and downstream of the alignment (e.g., downstream LB & RB, upstream LB & RB). For streams that parallel a project, estimate width of the buffer within the present/proposed ROW.
- Water flow: Indicate if the water is flowing, and in general terms how fast/slow.
- Water depth: Provide depth in inches or feet, with ranges if applicable; e.g., 2” in riffles to 2’ in pools.
- Water width: Average width of water flow within the channel.
- Groundwater connection: If known or obvious, indicate yes/no. If not sure, indicate as unknown; use the “unknown” designation as little as possible and only after a thorough investigation has failed to determine whether there is a groundwater connection. This would include springs or seeps which provide water to other resources.
- Bank stability: Describe the left bank and right bank and their erosion potential.

STABILITY CATEGORIES

Stable

Eroding

Undercutting

Slumping/Sloughing

Roots Exposed

- Benthos: Indicate the presence/absence of benthic invertebrates, listing organisms at least to the ordinal or familial level [e.g., Trichoptera (Hydropsychidae, Helicopsychidae); chironomids; oligochaetes; mayflies (Baetidae, Caenis);]
- Fish: Indicate the presence/absence of fish, relative sizes, and species if possible.
- Algae: Indicate if algae are present or growing, and what general type (green, filamentous, etc.).
- Other aquatic life: Indicate if there are other organisms present (e.g., salamanders, turtles).
- Provide the 8-digit HUC (Hydrologic Unit Code) number and the corresponding name of that watershed. Check the Tennessee Department of Environment and Conservation web site, Watershed Approach, as well as the web under Hydrologic Unit Code, Hydrologic Unit Information, HUC name.txt.
- Include additional information which may be pertinent. Indicate if the stream is Tier II/III or on 303(d) list. For 303(d) streams, note pertinent reason(s) for inclusion on the list, especially habitat alteration, alteration in stream-side or littoral vegetative covers and siltation.

STREAMS: DEFINITIONS AND DETERMINATIONS

Definitions:

TDEC:

A **stream** means all waters of the State on the surface of the ground except wet weather conveyances; streams include, but are not limited to, creeks, rivers, canals, and tributaries.

A **perennial stream** is a natural watercourse (including modified natural watercourses) whose stream beds during normal hydrologic years are always below the groundwater table.

An **intermittent stream** is a natural watercourse (including modified natural watercourses) whose stream beds are above the groundwater table for a portion of the year. Intermittent streams are a broad class of streams which can be considered to include those that during normal hydrologic years flow continuously from 30 days to those that flow 364 days, although some flow < 30 days a year. An intermittent stream may or may not support fish and other aquatic life.

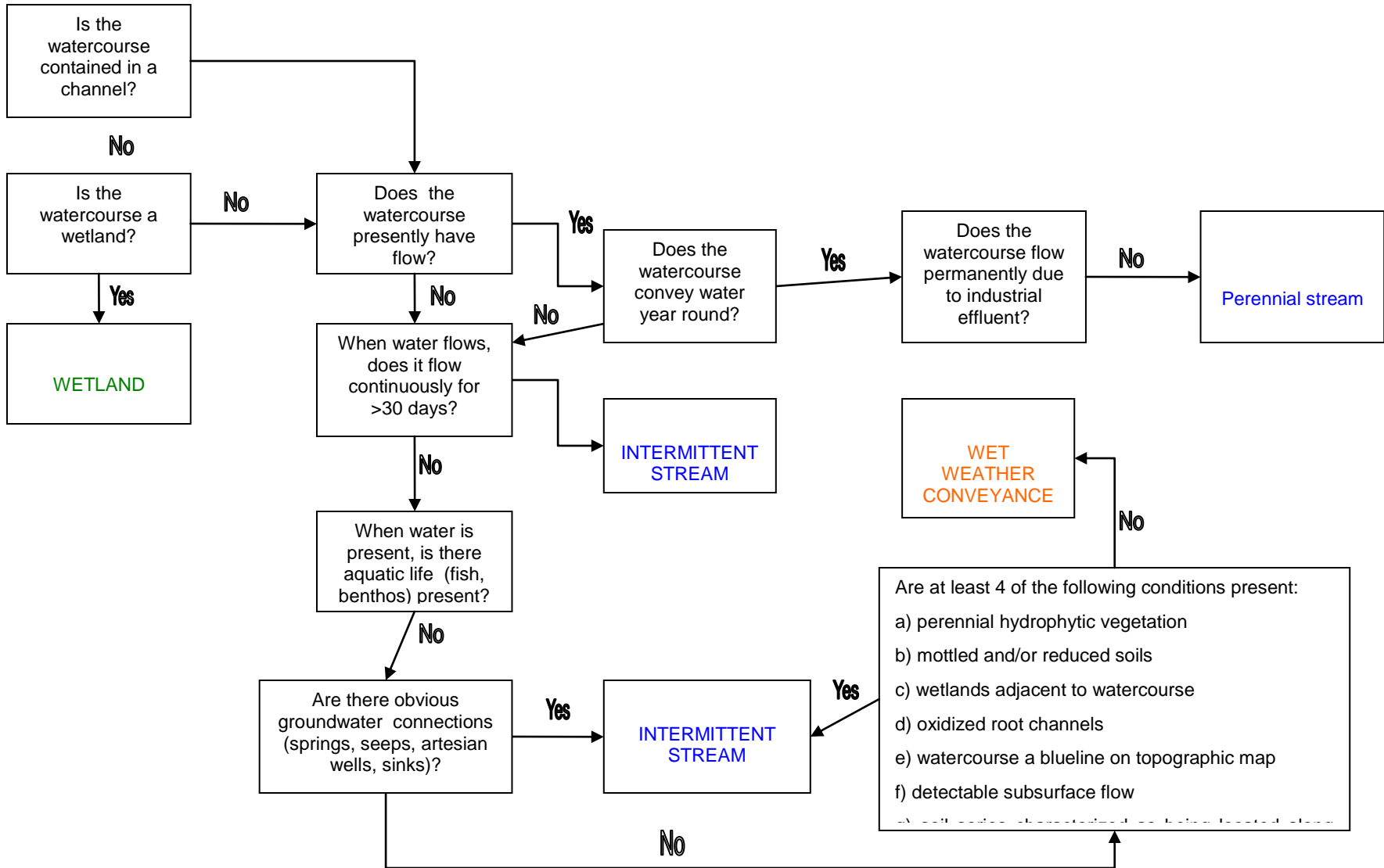
A **wet weather conveyance** is man-made or natural watercourses, including natural watercourses that have been modified by channelization, that flow only in direct response to precipitation runoff in their immediate locality and whose channels are above the groundwater table and which do not support fish or aquatic life and are not suitable for drinking water supplies.

USACE:

A **perennial stream** has flowing water year-round during a typical year. The water table is located above the streambed for most of the year. Groundwater is the primary source of water for stream flow. Runoff from rainfall is a supplemental source of water for stream flow.

An **intermittent stream** has flowing water during certain times of the year, when groundwater provides for stream flow. During dry periods, it may not have flowing water. Runoff from rainfall is a supplemental source of water for stream flow.

An **ephemeral stream** has flowing water only during, and for a short duration after, precipitation events in a typical year. Ephemeral stream beds are located above the water table year-round. Groundwater is not a source of water for the stream. Runoff from rainfall is the primary source of water for stream flow.



STREAM AND WET WEATHER CONVEYANCE DETERMINATION FLOW CHART

CHARACTERISTICS USED IN STREAM DETERMINATIONS

| Characteristic | Perennial stream | Intermittent stream | Wet weather conveyance |
|---|------------------|---------------------|------------------------|
| Channel with well-defined boundaries | ✓ | ✓ | ✓ |
| Channel without well-defined boundaries | | ✓ | ✓ |
| Flowing water | ✓ | ✓ | ✓ |
| No flow | | ✓ | ✓ |
| Flow solely dependent on effluent discharges | | | ✓ |
| Flow not solely dependent on effluent discharges | ✓ | ✓ | ✓ |
| Algal growth | ✓ | ✓ | |
| No algal growth | ✓ | ✓ | ✓ |
| Benthos | ✓ | ✓ | |
| No benthos | ✓ | ✓ | ✓ |
| Fish | ✓ | ✓ | |
| No fish | ✓ | ✓ | ✓ |
| In-stream root wads/oxidized root channels | ✓ | ✓ | |
| No in-stream root wads/oxidized root channels | | ✓ | ✓ |
| Connection to ground water | ✓ | | |
| No connection to ground water | | ✓ | ✓ |
| Channel diversity (sinuosity, riffles/runs/pools) | ✓ | ✓ | |
| No channel diversity | ✓ | ✓ | ✓ |
| Floodplain/bankfull bench present | ✓ | | |
| No floodplain/bankfull bench | ✓ | ✓ | ✓ |
| Non-storm flow present June - October | ✓ | | |
| Only storm flow present June - October | | ✓ | ✓ |
| Rooted terrestrial plants in channel | | ✓ | ✓ |
| No rooted terrestrial plants in channel | ✓ | ✓ | |
| Dry leaf litter in channel | | | ✓ |
| No dry leaf litter in channel | ✓ | ✓ | |
| Rain in past 48 hours and water flowing | ✓ | ✓ | ✓ |
| Rain in past 48 hours and water not flowing | | ✓ | ✓ |

STREAM AND WET WEATHER CONVEYANCE DETERMINATION GUIDE

(to be used in conjunction with flowchart)

- | | |
|--|-------------------------------|
| (1) Watercourse is contained in a channel with defined boundaries | 2 |
| Watercourse is not contained in a channel with defined boundaries | 5 |
| (2) Watercourse currently has flow on the surface or subsurface | 3 |
| Watercourse currently does not have flow on the surface or subsurface..... | 6 |
| (3) Watercourse continuously conveys water all year | 4 |
| Watercourse does not continuously convey water all year | 6 |
| (4) Watercourse flows solely because of effluent discharges (including discharges from stormwater detention ponds) | wet weather conveyance |
| Watercourse flows are not dependent on effluent discharges..... | perennial stream |
| (5) Watercourse is a wetland | wetland |
| Watercourse is not a wetland | 2 |
| (6) Water flows continuously for >30 days during the year with a normal hydrological period (when water does flow) | intermittent stream |
| Water flows continuously for <30 days | 7 |
| (7) Stream indicator species (fish, benthos) are present | intermittent stream |
| Stream indicator species are absent | 8 |
| (8) Groundwater connections (e.g., springs, seeps, artesian wells, sinkholes) to the channel are obvious..... | intermittent stream |
| No obvious groundwater connections to channel | 9 |
| (9) At least 4 of the following are present: | |
| • perennial hydrophytic vegetation (facultative or wetter) | |
| • mottled/reduced soils are in the watercourse bed and/or adjacent to watercourse | |
| • wetlands are present adjacent to watercourse | |
| • riparian vegetation has oxidized root channels | |
| • watercourse is shown as blueline on USGS topographic map | |
| • subsurface flow can be detected | |
| • soil series is characterized as being located along streams, floodplains, or has a high water table in Soil Conservation Service county surveys | |
| | intermittent stream |
| Less than 4 of the above features are present | wet weather conveyance |

(All determinations require an individual ARAP except wet weather conveyance, which is covered under a general ARAP.)

The Wetlands field data sheet is to be used to document wetlands. For Wetlands, provide the following:

- Wetland type: List as Forested, Scrub-shrub, Emergent or Bog or a combination of these.
- Dominant wetland plant species: List 3 to 5 of the predominant plant species in the wetland. This list may be used to develop a list of species for mitigation of temporary impacts.
- Surface water connection: Note the presence of inflow or outflow. A wetland will be considered CONTIGUOUS if it has a connection to surface flow and ISOLATED if there is no connection to surface flow.
- Ground water connection: If known or obvious, indicate yes/no. If not sure, indicate as unknown; use the “unknown” designation as little as possible and only after a through investigation has failed to determine whether there is a groundwater connection. This would include springs or seeps which provide water to other resources.
- Average water depth: Provide depth in inches or feet, with ranges if applicable; e.g., 2” to 2’.
- Munsell soil color: Indicate the soil colors based on the Munsell Soil Color Charts.
- Approximate size: Estimate the size of the wetland, in acres. For extensive systems (e.g., west TN riverine systems) base the estimate on NWI maps of the area, if available.
- Portion affected - Permanent: Indicate approximate size of area that will be permanently filled by the project.
- Portion affected - Temporary: Indicate approximate size of area that will be temporarily affected by the project, typically considered the area between the fill slope and the edge of right-of-way (or other limits of the project).
- Width of Buffer Zone: This is an estimate of the width of the buffer zone along a wetland. A buffer zone, as defined by the Tennessee General NPDES Permit (Permit No. TNR100000) “is a strip of dense undisturbed perennial native vegetation, either original or re-established, that borders streams and rivers, ponds and lakes, wetlands, and seeps”. (Perennial native vegetation is not defined in the permit.)

Wetland Determinations & Delineations:

- Beginning wetland determinations & delineations are to be made using the 1987 Corps of Engineers Wetland Delineation Manual and the most current edition of the USDA, NRCS Field Indicators of Hydric Soils in the United States (USDA, NRCS 2003 Field Indicators of Hydric Soils in the United States, Version 5.01. G. W. Hurt, P. M. Whited, and R. F. Pringle (eds.) USDA, NRCS in cooperation with the National Technical Committee for Hydric Soils, Fort Worth, TX).
- Wetland Determination Data Forms, as modified by the Department, will be completed and submitted with all wetland determinations.
- To determine if a soil is considered hydric in Tennessee, refer to the Hydric Soils of Tennessee list, revised December 15, 1995.
- To determine the wetland indicator status for a plant, refer to the National List of Plant Species That Occur in Wetlands, using the regional or state level plant list. The national and regional lists are available online at: <http://www.nwi.fws.gov/plants.htm>.

Marking Wetland Boundaries in the Field:

- During the wetland delineation process, the wetland boundaries will be marked using vinyl roll flagging or wire stake flagging. This will facilitate verification of the wetland

boundaries by the regulatory agencies as well as locating and surveying the wetland boundary at a later date. Both the roll and wire stake flagging will be printed with “Wetland Delineation”.

Verification of Wetland Boundaries:

- Wetland delineations shall be confirmed by the Tennessee Department of Environment and Conservation (TDEC) and the Corps of Engineers (Corps). The Design-Builder will contact the designated Department Biologist to schedule a meeting with TDEC and the Corps for verification of the wetland boundaries.

Calculating Wetland Impacts:

- When estimating wetland impact quantities, calculate all wetland acreage within the fill slopes of the project as permanent wetland impacts. All wetland acreage within the project limits that is located between the fill slopes and the right-of-way is calculated as temporary wetland impacts.

The Other Resources Features field data sheet is to be used to document caves, rock shelters, sinkholes, specialized habitats, management areas, protected species as well as other features that may affect a project.

Definitions:

- Cave: small to medium entrance; reaches beyond the light zone; consists of small to large chambers or several interconnecting passages (or both); elevation is variable.
- Rock shelter: shallow caves or overhangs; wider than deep; usually found at cliff bases; relatively level floor; no part is beyond daylight; there are no passages.
- Sinkhole: depression in land surface generally in a limestone region, created by solution.

The Non-Wetland Area field data sheet (Form X) is to be used to document an area that looks like a wetland, but upon investigation does not meet all of the requirements.

Supplemental Field Data Sheet Headings:

In the heading for the Form G field data sheets, please complete the information as follows:

Example:

County: Davidson **Route:** SR-1 **LM:** N/A **PE No:** 19075-4218-04 **PIN:** 448160.00

Contract No.: CDB0701 **Project Description:** Widen from SR-48 to Peeler Rd.

Date of survey: 09/26/2005 **Biologist:** Your Name Here **Affiliation:** Name of Firm Here.

Map:

The location of all features listed on the field data sheet(s) is to be indicated on a separate 8½ x 11 inch, 7.5-minute USGS topographic map. If needed, the project area can be displayed on more than one page. Minimum information on the map(s) includes the following:

- county name
- quadrangle name
- project name
- proposed alignment
- north arrow
- approximate scale
- date of field survey
- PE number; PIN
- beginning/end of project with station numbers

All features listed on the field data sheet(s) will be indicated on the topo map according to location and labeled using the map label (e.g., STR-1, WTL-2, WWC-1), with its corresponding color. If yellow is not distinctive, use a similar color such as orange, but only on the topographic map (not on the marked-up plans), and make a note to that effect in Section 11 (Notes section).

Photos:

Provide **at least** one photo (hardcopy and electronic) for each feature (e.g., stream, wet weather conveyance, sinkhole, cave, wetland). For large features (rivers, wetlands) it is recommended that more than one photo be taken and included (such as standing on bridge looking upstream [east] and downstream [west], or where a stream that will be affected flows into a river that will be affected). If the feature needs to be verified by TDEC/USACE, include several photos which may enable a decision to be made without a site visit.

Label photos with a minimum of the following information:

- County
- Name of feature (name, map label)
- Direction of photo
- Date (month, day, year) photo was taken
- Location of photo
- Corresponding photo number from Attachment G

Example:

Photo 2: Hamilton County, standing on SR 321 bridge, looking upstream (south) at Little Wolftever Creek (S-2); April 2004

Feature Labels:

Below is the complete list of feature labels to be used when completing the supplemental field data sheets, the Form G map and on the plan sheets for identification. Detailed instructions on the use of the labels are provided in the following sections: Field Data Sheets - Water Resources, Wetlands & Other Resource Features.

| Map Label | Feature Description |
|------------------|--|
| STR | Perennial or intermittent stream |
| SPG | Spring |
| SEP | Seep |
| PND | Pond, quarry |
| LAK | Lake |
| WFL | Waterfall/cascade |
| WWC | Wet weather conveyance |
| WTL | Wetland |
| WMS | Potential wetland mitigation site |
| CAV | Cave |
| RKS | Rock shelter |
| SNK | Sinkhole |
| SPH | Specialized habitat, management area |
| PSP | Protected Species |
| Others | Contact designated Department Biologist |

County: _____ Route: _____ LM: _____ PE No.: _____ PIN: _____

Contract No.: _____ Project Description: _____

Date of survey: _____ Biologist: _____ Affiliation: _____

| | | |
|--------------------------------|--|--|
| 1-Station: from plans | | |
| 2-Map label | | |
| 3-Potential impact | | |
| 4-Feature name | | |
| 5-Feature description: | | |
| what is it | | |
| blue-line on topo? (y/n) | | |
| defined channel (y/n) | | |
| channel bottom width | | |
| top of bank width | | |
| bank height | | |
| substratum | | |
| riffle/run/pool | | |
| width of buffer zone LB, RB | | |
| water flow (y/n) | | |
| water depth | | |
| water width | | |
| groundwater connection | | |
| bank stability LB, RB | | |
| dominant species LB, RB | | |
| overhead canopy (%) | | |
| benthos | | |
| fish | | |
| algae | | |
| other aquatic life | | |

| | | | |
|---|----------|--|--|
| habitat assessment score | | | |
| photo number (s) | | | |
| rainfall information | | | |
| 6-Watershed | HUC code | | |
| | HUC name | | |
| 7-Determination: | | | |
| 8-Determination: Confirmed? By? | | | |
| 9-Mitigation: to be included in design | | | |
| 10-Notes Indicate if stream is Tier II/III or on 303(d) list | | | |

County: _____ Route: _____ LM: _____ PE No.: _____ PIN: _____

Contract No.: _____ Project Description: _____

Date of survey: _____ Biologist: _____ Affiliation: _____

| | | | |
|--|----------|--|--|
| 1-Station: from plans | | | |
| 2-Map label | | | |
| 3-Potential impact | | | |
| 4-Feature name | | | |
| 5-Feature description: | | | |
| wetland type* | | | |
| dominant wetland | | | |
| plant species | | | |
| surface water connection (y/n)** | | | |
| ground water connection (y/n/unkn)** | | | |
| avg. water depth | | | |
| Munsell soil colors | | | |
| approximate size (acres) | | | |
| portion affected (acres) (permanent) | | | |
| portion affected (acres) (temporary) | | | |
| width of buffer zone (ft) | | | |
| photo number (s) | | | |
| 6-Watershed | HUC code | | |
| | HUC name | | |
| 7-Determination: | | | |
| 8-Determination: Confirmed? By? | | | |
| 9-Mitigation: to be included in design | | | |
| 10-Notes | | | |

* Forested, Scrub-shrub, Emergent or Bog;

** Y = Contiguous; N= Isolated; Unkn = Unknown, connection to ground water cannot be determined

(Caves/Rock Houses; Sinkholes; Specialized Habitats; Other

County: _____ Route: _____ LM: _____ PE No.: _____ PIN: _____

Contract No.: _____ Project Description: _____

Date of survey: _____ Biologist: _____ Affiliation: _____

| | | | |
|--|----------|--|--|
| 1-Station: from plans | | | |
| 2-Map label | | | |
| 3-Potential impact | | | |
| 4-Feature name | | | |
| 5-Feature description: | | | |
| what is it | | | |
| portion affected | | | |
| approximate size | | | |
| photo number | | | |
| other | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| 6-Watershed | HUC code | | |
| | HUC name | | |
| 7-Determination: | | | |
| 8-Determination: Confirmed? By? | | | |
| 9-Mitigation: to be included in design | | | |
| 10-Notes | | | |

MITIGATION

Once the all ecological field studies have been completed and verified and the natural resource features documented, the Design-Builder must assess the project related impacts and determine if mitigation is required.

The mitigation requirements must then be documented via the Natural Resource Mitigation Form (Form J), which is used to:

1. Identify specific locations where mitigation or in-kind replacement is required for a stream, wetland, listed species or other feature.
2. Transmit to the project designer the information that needs to be placed on the plans in a clear, understandable format with no extraneous information.
3. Provide plan view and cross-section sketches of mitigation features needed, placed correctly on copies of plans sheets to allow proper mitigation of natural resource impacts.

The tables, sketches and notes attached are for routine mitigation. This typically includes relocation of short or very small stream reaches, measures to minimize impacts to wetlands and avoidance measures or protection notes for species. Very large mitigation needs identified by the consultant (relocation of ½ mile of a large stream, requiring a geomorphic design or for on-site restoration of a wetland) should be coordinated with the designated Department Biologist.

Only resource features requiring mitigation are to be listed on the Form J Natural Resource Mitigation Form. If a project does not require mitigation DO NOT SUBMIT a FORM J.

NATURAL RESOURCE MITIGATION FORM

Calculate permanent & temporary wetland impacts & provide to designated Department Biologist and copy the Department Alternative Contracting Office:

STREAMS:

For stream relocations and stream/culvert transitions, regardless of length (unless a full geomorphic relocation design is necessary) provide a plan view and one or more cross-sections based on the Standard Stream Mitigation instructions. It is expected that the Standard Stream Mitigation instructions and any implementation notes, planting scheme, etc would be applied to Form J. The Design-Builder should give attention to the desirability or need for features such as rip-rap, channel liners, etc.

For stream crossings where a multi-barrel culvert is necessary, flow should be directed into a single barrel of the culvert; if obvious, indicate which barrel of the culvert should receive the flow in the plans. The purpose of this is to prevent over-widening of the stream channel at the culvert, which is especially critical at periods of low stream flow.

For plantings along relocated stream channels, plant two alternating rows of tree or shrub species on both sides of the new channels; the first row shall be bare root seedlings that are planted on the channel slope, centered on the midpoint of the slope (if appropriate, black willow stakes may be substituted for the seedlings – contact the designated Department biologist for guidance).

WETLANDS:

Sketch any berm, clay plugs, haul road/access requirements, etc that might be necessary to protect an existing or remaining portion of wetland from filling, draining, or other impacts. If a full on-site wetland replacement is required, the Design-Builder shall provide a full plan view and cross-section showing elevations of all excavations and structures on contour sheets with contour intervals appropriate to the situation; typically this is a six inch contour. Geotechnical studies are required for off-site mitigation areas. In addition, provide any implementation/sequencing notes necessary.

SPECIES:

The Design-Builder shall provide implementation or protection notes on plans. If such notes are included in the Biological Assessment, they should be the same notes that are placed on the plans.

List of Plant Species

The list of species that are to be planted at an impact site (stream relocation, temporary wetland impact, etc) is to be based on the species that are common to the site being affected - but also consider water levels during and following construction when selecting species. Small trees and shrubs may be substituted for the larger tree species in areas where impacts may be near a utility line or similar overhead feature. Tree species are not required for emergent and shrub-dominated wetlands.

Standard Stream Mitigation (if required)

Apply these measures to all applicable streams listed in Form J. Duplicate the length, bottom channel width, elevations, side slopes, meander wavelength, and curvature of the existing channels to the extent possible. Each channel should transition smoothly from its beginning elevation to its tie-in elevation in the receiving stream, without profile drops or jumps. Locate the new channels in as flat an area as possible to avoid unusually high side slopes; this may require some additional right-of-way. Channel length placed in spring-boxes or culverts counts as part of the new channel length (but may require off-site compensatory mitigation that would not be required for an open channel). Channel side slopes should mimic existing channel side slopes, if possible, and be stabilized using appropriate BMPs – the use of rip-rap should be avoided if possible. If rip-rap is required, the rip-rap should be imbedded into the soil so that the top of the rip-rap is flush with the bottom and sides of the channel.

Plant two alternating rows of tree or shrub species on both sides of the new channels; the first row shall be bare root seedlings that are planted on the channel slope, centered on the midpoint of the slope. Along the top of bank, 3-gallon container-grown trees are to be planted within one foot of the top of bank, unless directed otherwise.

Rip-rap, if required, should be limited to ends of culverts. All relocated channels and their accompanying mitigation features, including trees, are to be placed in right-of-way rather than easements; this may require acquisition of additional right-of-way.

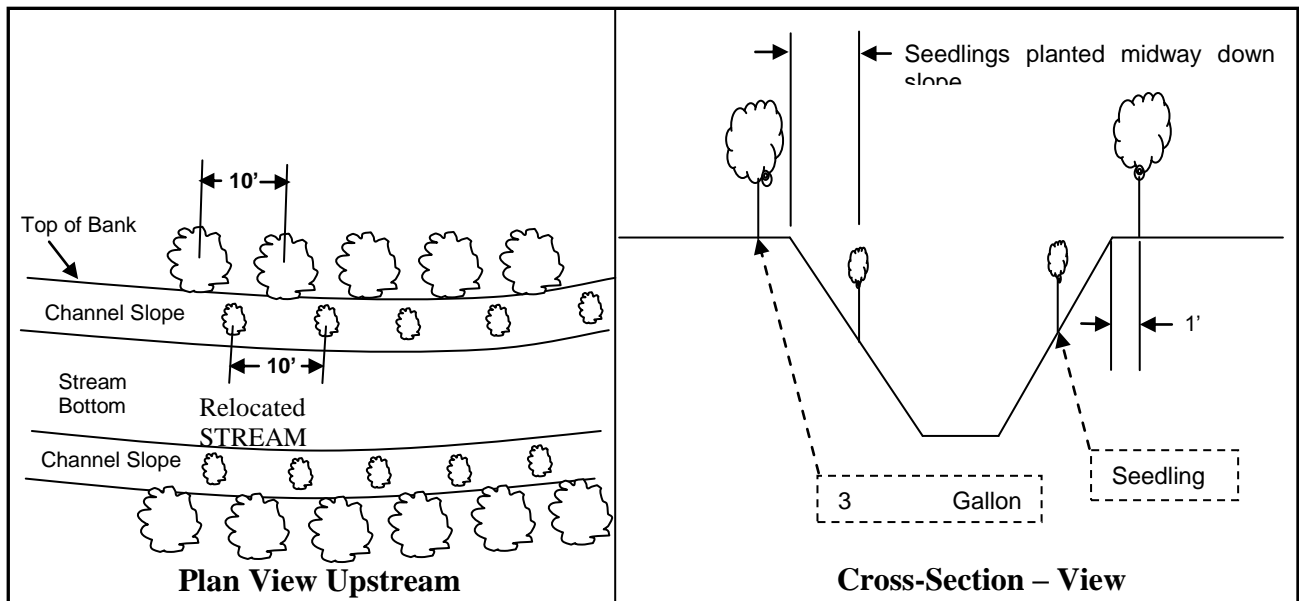
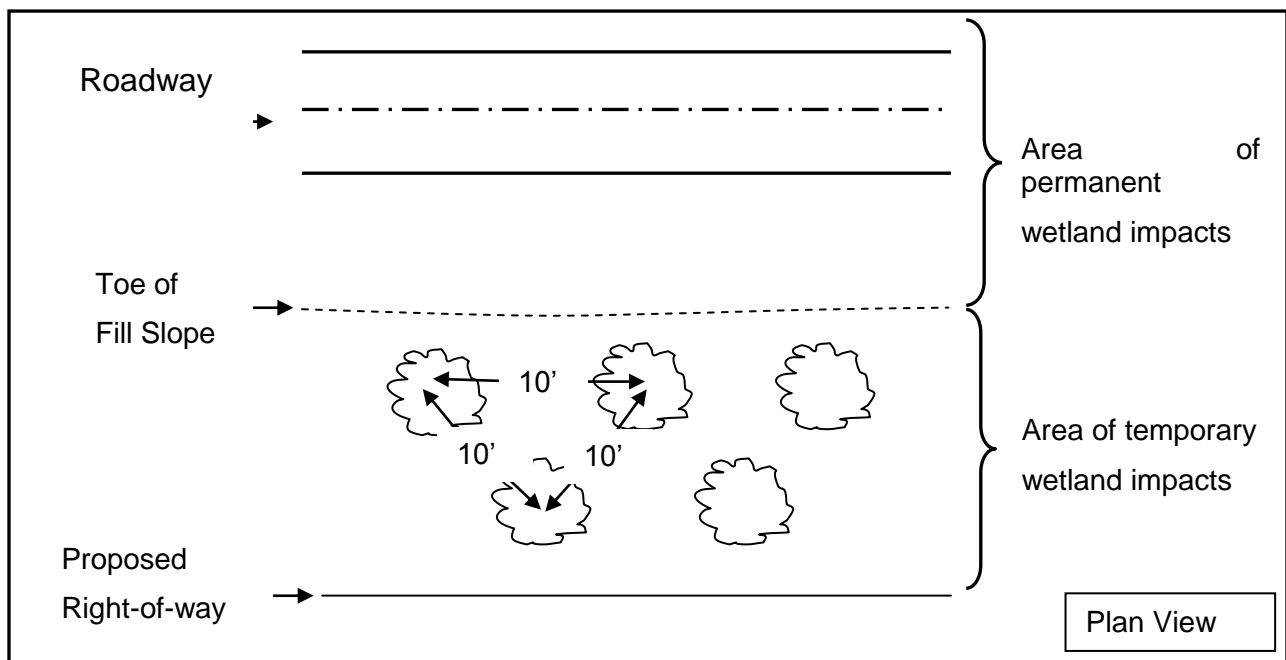


Figure 1. Spacing for planting along relocated stream.

Standard On-site Mitigation for Temporary Wetland Impact Areas (if required)

Apply these measures to all applicable temporary wetland impact areas listed in Form J. For temporary wetland impact areas, remove the top six to 12 inches of topsoil and stockpile it until construction is complete. Once construction activities are completed, restore all temporary wetland impact areas to pre-construction conditions. This includes removing haul roads (if applicable), restoring the site to the original (pre-construction) elevation and spreading stockpiled topsoil back over the wetland site. The area of temporary impacts will then be seeded, covered with straw and planted with tree seedlings to stabilize the site. Seedlings will be planted on 10-foot centers. Place a note on the present and proposed layout sheets to protect wetland areas located beyond the limits of the fill slope and proposed right-of-way.



Tree planting scheme for temporary wetland impact areas

Topsoil is to be removed from all areas of temporary wetland impacts and stockpiled prior to construction.

Upon completion of construction activities, temporary haul roads are to be removed. Excavated material from the haul roads is to be disposed of as directed by the Department.

Upon completion of construction activities, all temporary wetland impact areas are to be restored to pre-construction contours and the stockpiled wetland topsoil spread to restore these areas to pre-construction elevation.

CHANNEL RELOCATION SEQUENCE AND IMPLEMENTATION FOR RELOCATED STREAM CHANNELS

1. The new channel shall be excavated and stabilized during a low-water period. Rip-rap (only when hydraulically necessary), seeding, and sod shall be installed immediately following channel completion. Trees shall be installed in the first planting season following channel excavation. Water shall be diverted into the new channel only after it is completely stabilized, and only during a low-water period. Stabilized means that all specified rock and erosion control blanket or flexible channel liner is in place, and seeding and sod are in place and established.
2. CHANNEL RELOCATION SEQUENCE
 - a. Flag edge of the new channel top bank prior to clearing. Do not clear large trees in position to shade the new channel. Leave as many trees and shrubs as possible between toe of the new highway slope and the stream.
 - b. Excavate the new channel "in the dry" by leaving areas of undisturbed earth (diversion berms) in place at both ends.
 - c. Shape channel to specifications shown. Remove loose soils and debris.
 - d. Place topsoil, erosion control blanket or flexible channel liner, seed, and sod as specified.
 - e. Remove diversion berms, beginning with the most downstream, banks and bottom elevation of the old channel should transition smoothly into the new channel. The elevations of the new channel bottom at each end of the relocation sequence should match the elevations of the existing channel, and a steady percent slope should be maintained throughout the relocated channel centerline or as specified.
 - f. Install trees according to Standard Specifications Section 802.
3. Only rip-rap for hydraulic needs should be used in the relocated channel reach.
4. Requests by any agency that would require the modification of channels, ditches, elevations, rip-rap or any other stream mitigation items associated with the channel relocations shall be included in the lump sum Contract Amount and shall not constitute a Change Order.

TREES

Tree species or sizes shall be approved by the designated Department Biologist. Concerning **stream mitigation**, trees shall be of the variety approved and first quality. Concerning **temporary wetland mitigation**, trees shall be of the variety approved, well branched, **bare root (roots must be kept moist at all times)**, and first quality. No clones or cultivars will be accepted. Any found to be incorrect species, or improperly planted, at any time prior to termination of the contract shall be removed and replaced at the Design-Builder's expense. Stakes and wires shall be removed immediately prior to Final Acceptance, unless otherwise directed by the Department.

The Design-Builder must arrange several months ahead of time to obtain the correct tree species, as some may require some time to locate.

All trees planted shall be wrapped as per Section 802.07 of the Department Standard Specifications. Trees shall be watered as required through the period of establishment to ensure survival.

Natural Resources Mitigation Sketches/Information

County: _____ Route: _____ LM: _____ PE No: _____ PIN: _____

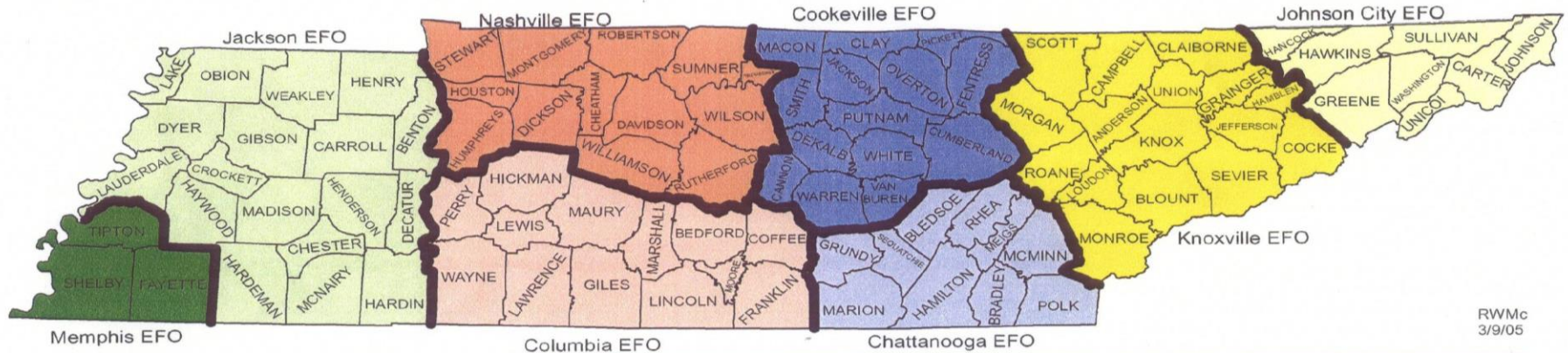
Contract No.: _____ Project Description: _____

Date of survey: _____ Biologist: _____ Affiliation: _____

| Station | Map label | Attachments: Marked-up plans sheet (A); notes (B); mitigation plan (C) attached | Calculate permanent & temporary wetland impacts & provide to the Department ("X") | Apply "standard" stream relocation configuration & instructions ("X") | Survey boundaries as flagged in field ("X") | General notes and/or specific changes requested |
|---------|-----------|--|---|---|---|---|
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**Tennessee Department of Environment and Conservation
Environmental Field Offices
1-888-891-TDEC**

| | | | |
|---|---|--|---|
| <p>Jackson Environmental Field Office</p> <p>1625 Hollywood Drive</p> <p>Jackson TN 38305</p> <p>EFO Director - Rudy Collins (731) 512-1339</p> <p>WPC Mgr - Pat Patrick (731) 512-1301</p> <p>Administrator - Carol Pollan</p> <p>Env. Coord. - Vaughn Cassidy</p> | <p>Nashville EFO (EFO-N)</p> <p>711 R.S. Gass Blvd</p> <p>Nashville, TN 37243</p> <p>ph (615) 687-7000</p> <p>fax (615) 687-7078</p> <p>EFO Director - Brenda Apple (615) 687-7033</p> <p>WPC Mgr - Joe Holland (615) 687-7020</p> <p>Administrator - Steve Janes</p> <p>Env. Coord. - Charles Jobe</p> | <p>Cookeville EFO (EFO-CK)</p> <p>1221 South Willow Ave</p> <p>Cookeville, TN 38506</p> <p>ph (931) 432-4015</p> <p>fax (931) 432-6952</p> <p>EFO Director - Jimmie Lee Clark (931) 432-7614</p> <p>WPC Mgr - Rob Howard (931) 432-7632</p> <p>Administrator - D. Jan Tollett</p> <p>Env. Coord. -</p> | <p>Johnson City EFO (EFO-JC)</p> <p>2305 Silverdale Road</p> <p>Johnson City, TN 37601</p> <p>ph (423) 854-5400</p> <p>fax (423) 854-5401</p> <p>EFO Director - Mark Braswell (423) 854-5459</p> <p>WPC Manager - Andrew Tolley (423) 854-5446</p> <p>Administrator - Judy Jarrett</p> <p>Env. Coord. - Jan Compton</p> |
|---|---|--|---|



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| | | | |
|--|--|--|---|
| <p>Memphis EFO (EFO-M)</p> <p>Suite E-645, Perimeter Park</p> <p>2510 Mount Moriah Rd</p> <p>Memphis, TN 38115</p> <p>ph (901) 368-7939</p> <p>fax (901) 368-7979</p> <p>EFO Director - Jim Chaney (901) 368-7990</p> <p>WPC Mgr - Terry Templeton (901) 368-7959</p> <p>Administrator - Bill Relker</p> <p>Env. Coord. - Vaughn Cassidy</p> | <p>Columbia EFO (EFO-CL)</p> <p>2484 Park Plus Drive</p> <p>Columbia, TN 38401</p> <p>ph (931) 380-3371</p> <p>fax (931) 380-3397</p> <p>EFO Director - Joe Holmes (931) 840-4156</p> <p>WPC Mgr - Tim Wilder (931) 840-4170</p> <p>Administrator - Shelia Woodard</p> <p>Env. Coord. - John Bowers</p> <p><i>Tim Wilder</i></p> | <p>Chattanooga EFO (EFO-CH)</p> <p>Suite 550 State Office Bldg</p> <p>540 McCallie Avenue</p> <p>Chattanooga, TN 37402</p> <p>ph (423) 634-5745</p> <p>fax (423) 634-6389</p> <p>EFO Director -</p> <p>WPC Mgr - Richard Urban (423) 634-5702</p> <p>Administrator - Andra Kelley</p> <p>Env. Coord. -</p> | <p>Knoxville EFO (EFO-K)</p> <p>Suite 220, State Plaza</p> <p>2700 Middlebrook Pike</p> <p>Knoxville, TN 37921</p> <p>ph (865) 594-6035</p> <p>fax (865) 594-6105</p> <p>EFO Director - Phil Chambers (865) 594-5524</p> <p>WPC Mgr - Paul Schmierbach (865) 594-5529</p> <p>Administrator - Mark Sweat</p> <p>Env. Coord. - Mark Penland</p> |
|--|--|--|---|

U.S. Army Corps of Engineers, Memphis District

U.S. Army Corps of Engineers, Memphis District
 Regulatory Branch
 Clifford Davis Federal Building
 Room B-202
 Memphis, TN 38103-1894
 Phone: 901-544-3471
 FAX: 901-544-0211

USACE Regulatory Program: The Memphis District Regulatory Staff covers eastern Arkansas, western Tennessee and Kentucky, the bootheel of Missouri, the southern tip of Illinois, and the northern part of Mississippi (see map below).

Portions of the following Tennessee Counties are within the Nashville District (Western Section) and the Memphis District boundaries:

Carroll, Chester, Henderson, Henry, McNairy

Memphis District Contacts:

| | |
|-------------|--------------|
| Roger Allan | 901-544-3684 |
| Tom Skelton | 901-544-3468 |



U.S. Army Corps of Engineers, Nashville District

U.S. Army Corps of Engineers, Nashville District
 Regulatory Branch
 3701 Bell Road
 Nashville, TN 37214-2660
 Phone: 615-369-7500
 FAX: 615-369-7501

USACE Regulatory Program: The Nashville District staff covers parts of Alabama, Kentucky, Mississippi and Tennessee (see map below). Nashville's Regulatory Branch is divided into two sections, Eastern Section and Western Section.

The Following Tennessee Counties are within the Nashville District (Eastern Section):

Anderson, Bledsoe, Blount, Bradley, Campbell, Carter, Claiborne, Clay, Cocke, Cumberland, De Kalb, Fentress, Grainger, Greene, Hamblen, Hamilton, Hancock, Hawkins, Jackson, Jefferson, Johnson, Knox, Loudon, McMinn, Meigs, Monroe, Morgan, Overton, Pickett, Polk, Putman, Rhea, Roane, Sequatchie, Sevier, Scott, Smith, Sullivan, Unicoi, Union, Van Buren, Warren, Washington, White

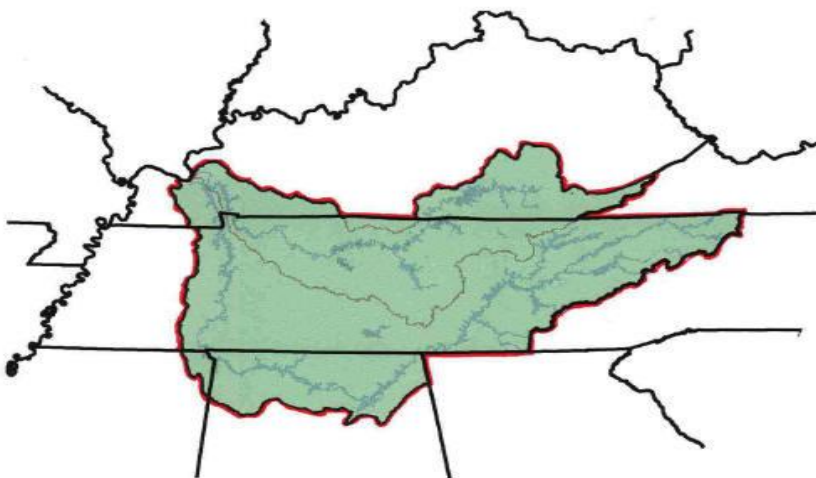
The Following Tennessee Counties are within the Nashville District (Western Section):

Bedford, Benton, Cannon, Cheatham, Coffee, Davidson, Decatur, Dickson, Franklin, Giles, Grundy, Hardin, Hickman, Houston, Humphreys, Lawrence, Lewis, Lincoln, Macon, Marion, Marshall, Maury, Montgomery, Moore, Perry, Robertson, Rutherford, Stewart, Sumner, Trousdale, Wayne, Williamson, Wilson

Nashville District Contacts:

| | | | |
|-----------------|--------------|-----------------|--------------|
| Eastern Section | | Western Section | |
| Marty Tyree | 615-369-7514 | Kathleen Kuna | 615-369-7506 |

Nashville District Service Area



NASHVILLE DISTRICT REGULATORY BOUNDRIES

Hydrologic Unit Codes (HUC) for Tennessee

| <u>Group 1 (red)</u> | | <u>Group 4 (dark blue)</u> | |
|---|----------|--------------------------------------|----------|
| Nonconnah | 08010211 | Hatchie (Lower Hatchie) | 08010208 |
| S. F. Forked Deer | 08010205 | Little Hatchie (Upper Hatchie) | 08010207 |
| Harpeth | 05130204 | Red | 05130206 |
| Stones | 05130203 | Barren | 05110002 |
| Emory | 06010208 | Lower Cumberland (Old Hickory Lake) | 05130201 |
| Watts Bar | 06010201 | Upper Cumberland (Cordell Hull Lake) | 05130106 |
| Wautauga | 06010103 | Obey | 05130105 |
| Conasauga | 03150101 | S. F. Cumberland | 05130104 |
| Ocoee | 06020003 | Upper Cumberland | 05130101 |
| | | Powell | 06010206 |
| | | Upper Clinch | 06010205 |
| | | Holston | 06010104 |
| | | TN (Middle TN-Chickamauga) | 06020001 |
| | | | |
| <u>Group 2 (yellow)</u> | | <u>Group 5 (pink)</u> | |
| Loosahatchie | 08010209 | Mississippi | 08010100 |
| N. F. Forked Deer | 08010204 | N. F. Forked Deer | 08010206 |
| Pickwick Lake | 06030005 | Obion | 08010202 |
| Lower Elk | 06030004 | Obion S. F. | 08010203 |
| Upper Elk | 06030003 | Lower Cumberland (Lake Barkley) | 05130205 |
| Wheeler Lake | 06030002 | Lower Cumberland (Cheatham Lake) | 05130202 |
| Collins | 05130107 | Guntersville Lake | 06030001 |
| Caney Fork | 05130108 | Sequatchie | 06020004 |
| Hiwassee | 06020002 | Lower French Broad | 06010107 |
| Ft. Loudon Lake (Watts Bar) | 06010201 | Upper French Broad | 06010105 |
| S. F. Holston | 06010102 | Pigeon | 06010106 |
| | | Nolichucky | 06010108 |
| <u>Group 3 (light blue)</u> | | | |
| N. F. Holston | 06010101 | | |
| S.F. Holston | 06010102 | | |
| Wolf | 08010210 | | |
| TN Western Valley (KY Lake) | 06040005 | | |
| TN Western Valley (Beech) (Lower TN-Beech) | 06040001 | | |
| Buffalo | 06040004 | | |
| Lower Duck | 06040003 | | |
| Upper Duck | 06040002 | | |
| TN (Middle TN-Chickamauga) | 06020001 | | |
| Little TN (Lower Little TN) | 06010204 | | |
| Lower Clinch | 06010207 | | |

GEOGRAPHIC INFORMATION SYSTEM (GIS)

I. Data Requirements

GIS Deliverables:

Topologically accurate GIS products compatible with the Department's Enterprise GIS database will be submitted where geospatial or location data are to be collected by the Design-Builder. Acceptable GIS formats include the following:

- Oracle's native spatial format – SDO_GEOMETRY – GIS data is preferred to be delivered as an Oracle Spatial export file containing all relevant indexes and associated tables both spatial (SDO_GEOMETRY) and non-spatial information.
- Any ESRI format data is acceptable (e.g. personal geodatabase, shapefile) as long as accompanied by clear instructions to convert into Oracle spatial SDO_GEOMETRY format and is accompanied by associated projection files (.prj) or information.
- Intergraph's GeoMedia Access Warehouse format is acceptable with clear instructions to convert into Oracle spatial SDO_GEOMETRY format and is accompanied by associated projection files (.csf) or information.

GIS deliverables will be submitted in State Plane 1983 Coordinate System – FT – Zone 4100 Tennessee with a North American Datum (NAD) 1983 projection. The Design-Builder will also provide metadata to meet the Department's minimum metadata standards compliant with the Federal Geographic Data Committee's Content Standard for Digital Geospatial Metadata, Version 2-FGDC-STD-001-1998 (<http://www.fgdc.gov/metadata/constan.html>). GIS deliverables shall be submitted on Compact Disk(s) with appropriate documentation to facilitate use by Department personnel.

GPS Requirements:

Data collected using Global Positioning System (GPS) equipment will be captured and stored using Geographic Decimal Degrees (Lat/Long) – WGS84. Minimum precision for GPS coordinates shall be three meters or less and maximum confidence error (PDOP – Position Dilution of Precision) for captured data shall be a 6 or less. Post processing of collected will be required as well to ensure greater accuracy, unless otherwise noted.

II. File Naming

Each shapefile and its corresponding data points must have a unique identification number. Data within the database will become untrackable if file naming is not held to strict and consistent standards. The correct file format will contain the county number, the project pin number and the file type. **No deviation from this standard will be accepted.** The correct file format is as follows:

Shapefiles: (county)(PIN)(file type)

Ex. 19100361.00wetland

County PIN File type

Data points: (county)(PIN)(map label)

Ex. 19100361.00S1

County PIN File type

County PIN File type

If multiple data points are taken for the same feature, they will be labeled with consecutive letters.

Ex. 19100361.00S1
 19100361.00S1A
 19100361.00S1B
 19100361.00S1C

The appropriate abbreviations for file types are listed below:

Streams – S-x, Wetlands – W-x, Wet weather conveyances – WWC-x, Springs – SPR-x, Ponds – P-x, Lakes – L-x, Endangered Species – SP-x, Caves – CV-x, Sinkholes – SK-x, Critical Habitat – CH-x

III.Data Collection

All data will be collected using points. No polygons or lines are to be used (unless otherwise directed) in order to simplify the final data product. A sufficient number of points should be taken for each feature to accurately represent “real world” conditions. For example, a small wetland covering only 0.1 acres may require only one point, but a wetland covering several acres with irregular geometry will require multiple points. Streams will vary considerably in the number of points required to accurately map them. For example, if a stream crosses the project at a 90⁰ angle, three points (one at the crossing and one on each side of the alignment) would most likely be adequate, but if the stream crosses at less of an angle and/or meanders in the vicinity of the project, additional points may be necessary.

Multiple points are primarily used to convey the spatial quality of features, but they may also be necessary in order to document transitioning conditions within a feature. For example, a perennial stream that transitions to an intermittent stream. Additional data points should be taken not only to convey the spatial relationship of the stream to the project, but also to note the transition from perennial to intermittent.

GIS Deliverables Table

Contract No.: _____ Project: County, Project Termini

County Number: 19 PIN: 100361.00 P. E. Number: 63374-1214-04

Date: _____ Review completed by: _____ Agency: _____

| Unique Feature ID Number(s) | Number of Points Associated With Feature | Feature Type | Feature Name | Form G Map Label | Potential Project Impact | Data Format | PDOP Accuracy | Post Processing |
|---|--|------------------|--------------|------------------|--------------------------|----------------|---------------|-----------------|
| 19100361.00S1 19100361.00S1A 19100361.00S1B 19100361.00S1C | 4 | Perennial Stream | Big Creek | S-1 | Crossing | ESRI Shapefile | 5 | Yes |
| 19100361.00W1 19100361.00W1A 19100361.00W1B 19100361.00W1C 19100361.00W1D 19100361.00W1E | 6 | Wetland | N/A | W-1 | Fill | ESRI Shapefile | 4 | Yes |

Attribute Tables

| Wetland Mitigation Site | | |
|--------------------------------|-----------------------|----------------------------------|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Isolated (Y/N) | Isolated | Text - Y or N |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Munsell Soil Colors | Muns_Soil | Text - 30 characters |
| Hydrology Source | Hyd_Source | Text - 50 characters |
| Vegetative Species | Veg_Spec | Text - 100 characters |
| Restoration Necessary | Rest_Nec | Text - 250 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Seeps | | |
|------------------------|-----------------------|--|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - None, Springbox, Runoff |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Multiple Seeps Present | MultSePres | Text - Y or N |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Lakes | | |
|----------------------------------|-----------------------|--|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - None, Drain, Fill, Drain & Fill |
| Inlet or Outlet to Waters of the | Inl_or_Out | Text – choose from - None, Inlet, |

| Lakes | | |
|-----------------------|-----------------------|----------------------------------|
| Attribute Name | Shapefile Name | Field Type |
| State | | Outlet, Both |
| Mitigation Required | Mit_Req | Text - Y or N |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Scenic Feature | Scen_Feat | Text - 150 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Ponds | | |
|--|-----------------------|--|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - None, Drain, Fill, Drain & Fill |
| Inlet or Outlet to Waters of the State | Inl_or_Out | Text – choose from - None, Inlet, Outlet, Both |
| Springs Present | Spr_Prest | Text - Y or N |
| Mitigation Required | Mit_Req | Text - Y or N |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Scenic Feature | Scen_Feat | Text - 150 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Streams | | |
|-----------------------|-----------------------|---|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Stream Type | StreamType | Text – choose from - Perennial, Intermittent, Ephemeral |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - Crossing, Relocation, Runoff |
| Length of Impact | Len_Impact | Numerical - 10 characters |
| Feature Name | Feat_Name | Text - 25 characters |

| Streams | | |
|------------------------------|-----------------------|--|
| Attribute Name | Shapefile Name | Field Type |
| Groundwater Connection | Ground_Con | Text - Y or N |
| Bottom Width | Bott_Width | Numerical - 5 characters |
| Channel Depth | Chan_Depth | Numerical - 5 characters |
| Bankfull Depth | Bful_Depth | Numerical - 5 characters |
| Water Depth | Wat_Depth | Numerical - 10 characters |
| Substratum | Substratum | Text - 25 characters |
| Flow | Fl_Depth | Text – choose from - None, Low, Moderate, High |
| Pool/Riffle % | Pl_Rif_Per | Numerical - 10 characters |
| In-Stream Root Wad | Root_Wad | Text - Y or N |
| Canopy Coverage | Can_Cover | Numerical - 10 characters |
| Canopy Species | Can_Spec | Text - 100 characters |
| Aquatic Fauna | Aqua_Fauna | Text - 100 characters |
| Aquatic Flora | Aqua_Flora | Text - 100 characters |
| Habitat Assessment Score | HabAssScor | Numerical - 4 characters |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Mitigation Required (yes/no) | Mit_Req | Text - Y or N |
| Scenic Feature | Scen_Feat | Text - 150 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Wet Weather Conveyances | | |
|--------------------------------|-----------------------|---|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - Crossing, Relocation, Runoff |
| Feature Name | Feat_Name | Text - 25 characters |
| Bottom Width | Bott_Width | Numerical - 5 characters |
| Channel Depth | Chan_Depth | Numerical - 5 characters |
| Bankfull Depth | Bful_Depth | Numerical - 5 characters |
| Substratum | Substratum | Text - 25 characters |
| Flow Depth | Fl_Depth | Numerical - 5 characters |
| Canopy Coverage | Can_Cover | Numerical - 10 characters |
| Canopy Species | Can_Spec | Text - 100 characters |

| Wet Weather Conveyances | | |
|--------------------------------|-----------------------|----------------------------------|
| Attribute Name | Shapefile Name | Field Type |
| Aquatic Fauna | Aqua_Fauna | Text - 100 characters |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Critical Habitat | | |
|-------------------------|-----------------------|----------------------------------|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 8 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Habitat Characteristics | Hab_Char | Text - 100 characters |
| Dependant Species | Dep_Spcs | Text - 100 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Species | | |
|--|-----------------------|---|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Species Name | Sp_Name | Text - 50 characters |
| Federal Status | Fed_Status | Text – choose from - LE, LT, PE, PT, D |
| TN Status | TN_Status | Text – choose from - LE, LT, PE, PT, D |
| Species Present in ROW | Sp_in_ROW | Text - Y or N |
| Species listed in USFWS letter | USFWS_ltr | Text - Y or N |
| BA Written | BA_Written | Text - Y or N |
| BA Conclusion | BA_Concl | Text – choose from - No Effect, Not Likely to Adversely Affect, Likely to Adversely Affect, Not Likely to Jeopardize. |
| USFWS Concurrence | USFWS_conc | Text - Y or N |
| Additional Measures Necessary to Protect Species | AddMeasNec | Text - Y or N |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Sinkholes | | |
|-----------------------|-----------------------|---|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - None, Fill, Runoff |
| Open Throated | Open_Thro | Text - Y or N |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Caves | | |
|--------------------------|-----------------------|--|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - None, Cut, Runoff |
| Bat Habitat | Bat_Hab | Text - Y or N |
| Bats Observed | Bat_Obsvd | Text - Y or N |
| Bat Hibernaculum | Bat_Hiber | Text - Y or N |
| Endangered Species | Endg_Spec | Text – choose from - None, Myotis sodalis, Myotis grisescens |
| Additional Fauna Present | Add_Fauna | Text - 50 characters |
| Scenic Feature | Scen_Feat | Text - 150 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Springs | | |
|--------------------------|-----------------------|--|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - None, Springbox, Runoff |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Multiple Springs Present | MultSpPres | Text - Y or N |
| Continuous Spring | Cont_Spng | Text - Y or N |

| Springs | | |
|------------------------------|-----------------------|----------------------------------|
| Attribute Name | Shapefile Name | Field Type |
| Mitigation Required (yes/no) | Mit_Req | Text - Y or N |
| Scenic Feature | Scen_Feat | Text - 150 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

| Wetlands | | |
|-----------------------|-----------------------|--|
| Attribute Name | Shapefile Name | Field Type |
| Unique ID | Unique_ID | Text - 15 characters |
| Station Number | Sta_Number | Numerical - 20 characters |
| Form G Label | FormGLabel | Text - 5 characters |
| Potential Impact | Pot_Impact | Text – choose from - Fill, Runoff |
| Isolated (Y/N) | Isolated | Text - Y or N |
| Watershed | Watershed | Text - 40 characters |
| 8-Digit HUC Code | HUC_Code | Numerical - 9 characters |
| Mitigation Required | Mit_Req | Text - Y or N |
| Munsell Soil Colors | Muns_Soil | Text - 30 characters |
| Hydrology Source | Hyd_Source | Text - 50 characters |
| Vegetative Species | Veg_Spec | Text - 100 characters |
| Wetland Function | Wet_Funct | Text – choose from - Ground-water recharge Ground-water discharge Floodflow alteration Sediment stabilization Sediment/toxicant retention Nutrient removal/transformation |
| Scenic Feature | Scen_Feat | Text - 150 characters |
| Notes | Notes | Text - 250 characters |
| Latitude Coordinate | Latitude | Double (Double Precision Number) |
| Longitude Coordinate | Longitude | Double (Double Precision Number) |

REFERENCES

| Resource | Website |
|---|---|
| Federal Regulation 23 CFR | http://www.access.gpo.gov/cgi-bin/cfrassemble.cgi?title=200423 |
| Federal Regulation 23 CFR 636 (Design-Build Contracting) | http://www.access.gpo.gov/nara/cfr/waisidx_07/23cfr636_07.html |
| FEMA Map Service Center | http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1 |
| FHWA other websites | http://www.fhwa.dot.gov/fhwaweb.htm |
| FHWA Hydraulic Engineering Circulars | http://www.fhwa.dot.gov/engineering/hydraulics/library_listing.cfm |
| FHWA Manual on Uniform Traffic Control Devices | http://mutcd.fhwa.dot.gov/ |
| Federal Wild and Scenic Rivers | http://www.nps.gov/rivers/ |
| TVA | http://www.tva.com/river/26apermits/ |
| USACE Nashville Environmental | http://www.lrn.usace.army.mil/permits.htm |
| USACE Memphis Environmental | http://www.mvm.usace.army.mil/environmental.asp |
| TCA, Title 54 | http://198.187.128.12/tennessee/lpext.dll?f=templates&fn=fs-main.htm&2.0 |
| TDEC Summary of Permits | http://www.state.tn.us/environment/permits/#wpc |
| State Scenic Rivers | http://www.state.tn.us/environment/na/scenicrivers/ |
| TDEC/TDOT Consent Order | http://www.tennessee.gov/environment/wpc/pdf/consentagreement04.pdf |
| TDEC Erosion and Sediment Control Handbook | http://www.state.tn.us/environment/wpc/sed_ero_controlhandbook/ |
| TDOT Construction Home | http://www.tdot.state.tn.us/construction/ |

| Resource | Website |
|---|---|
| TDOT's Standard Specifications and Supplemental Specifications | http://www.tdot.state.tn.us/construction/specs.htm |
| TDOT Construction Circular Letters | http://www.tdot.state.tn.us/construction/Circular_Letters/circltr.pdf |
| TDOT Rules And Regulations For Accommodating Utilities Within Highway Rights-Of- Way Chapter 1680-6-1 | http://tennessee.gov/sos/rules/1680/1680-06/1680-06-01.pdf |
| TDOT Standard Drawing Library | http://www.tdot.state.tn.us/Chief_Engineer/engr_library/stdrlib.htm |
| TDOT Design Division Guidelines and Instructional Bulletins | http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/design/DesGuide.htm |
| TDOT Design CADD Standards | http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/design/v8/V8design.htm |
| TDOT Qualified Products List | http://www.tdot.state.tn.us/materials/reseval/qualprod.htm |
| TDOT Materials and Test Home | http://www.tdot.state.tn.us/materials/ |
| TDOT Materials and Test SOP's | http://www.tdot.state.tn.us/materials/fieldops/sop/ |
| TDOT's Public Involvement Plan (PIP) | http://www.tdot.state.tn.us/documents/pip.pdf |
| TDOT Retaining Wall Policy | http://www.tdot.state.tn.us/materials/geotech/default.htm |
| TDOT Traffic Design Manual | http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/design/Traffic_Design_Manual.pdf |
| TDOT Work Zone Safety and Mobility Manual | http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/design/TDOTWorkZoneSafetyMobilityManual.pdf |

| Resource | Website |
|---|---|
| TDOT Survey Manual | http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/design/TDOT%20SURVEY%20MANUAL/SURVEY_MANUAL.pdf |
| TDOT Design Procedures for Hydraulic Structures | http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/structures/docs/thmall.pdf |
| TDOT Design Drainage Manual | http://www.tdot.state.tn.us/Chief_Engineer/assistant_engineer_design/design/DrainManChap%201-10.htm |
| TDOT Statewide Storm Water Management Plan | http://www.tdot.state.tn.us/sswmp/ |

In the instance that a Design-Builder does not have Internet capability, a hard copy of any reference material can be purchased from the Department Alternative Contracting Office at 615-741-2414.

required by the Department, and such other meetings as the Department may request, including individual meetings between the Project Quality Manager and the Department.

- The Project Quality Manager shall be the primary point of contact to the Department for all issues relating to Design-Builder's Quality Plan (preparation, review, implementation, revision and updating).
- (b) **Authority** - The Project Quality Manager shall have and exercise authority over the work production necessary to assure quality and compliance with Contract requirements. The Quality Team shall have and exercise authority to stop work until the work is brought into conformance with Contract requirements.

2.5.2. DESIGN QUALITY ORGANIZATION

Design Quality Manager – The Design-Builder shall establish a design Quality Management function and provide a Design Quality Manager to independently review Design Documents received from the Design Manager as specified herein, in other Contract Documents and the Design-Builders Quality Plan prior to requesting Review and Acceptance from the Department. The Design Quality Manager shall evaluate design development processes and procedures and Design Documents in accordance with the Quality Plan, and shall certify to Design-Builder and to the Department that the design complies with all Contract requirements. The Design Quality Manager shall have independent quality review and internal Design-Builder acceptance responsibilities.

2.5.3. CONSTRUCTION QUALITY ORGANIZATION

- (a) **Construction Quality Manager** – The Design-Builder shall establish a construction Quality Management function and provide a Construction Quality Manager to oversee, manage, certify and perform construction Quality Management activities as specified herein and in other Contract Documents and the Design-Builders Quality Plan.
- (b) **Construction Inspectors** - All construction processes, procedures, and workmanship shall be inspected by the Design-Builder's Construction Quality Inspectors. Inspection shall include the observations, measurements, and documentation specified in the Design-Builder's Quality Plan and the Contract. Inspection, observations, verification of conformance to specified requirements, measurements, results, non-conformances, and required corrective actions shall be documented on the forms provided by the Department or on Design-Builder's forms acceptable to the Department. Inspection, observation and documentation shall include descriptions of construction activity and location.

2.5.4. ENVIRONMENTAL COMPLIANCE PLAN

If any environmental permits are required for the construction of the project, the Design-Builder shall prepare and implement an Environmental Compliance Plan within 30 days of the initial NTP and shall update the plan as needed, as new

fieldwork is completed, and as new or modified mitigation or environmental compliance strategies are developed throughout the term of the Contract.

The Environmental Compliance Plan is part of the Quality Plan and shall be formally Accepted by the Department. New information or modified information, mitigation plans, and compliance strategies developed throughout the term of the Contract and added to the Environmental Compliance Plan shall also be formally Accepted by the Department through the submission of an updated Quality Plan. All permits, clearances, and approvals shall be incorporated into the Environmental Compliance Plan as they are issued by the regulatory Authorities and shall become part of the Quality Plan.

The Design-Builder shall monitor and document work activities to validate full compliance with the environmental requirements.

The Environmental Compliance Plan shall:

- (a) Identify all applicable environmental permits, programmatic agreements, orders, opinions, clearances, and authorizations and their requirements;
- (b) Identify key environmental compliance personnel roles and responsibilities;
- (c) Identify opportunities to avoid and minimize environmental impacts;
- (d) Identify procedures for achieving and documenting environmental compliance;
- (e) Establish procedures for identifying and resolving non-compliance; and
- (f) Establish procedures for emergency response.

In addition, the Environmental Compliance Plan shall address the process and procedures the Design-Builder's environmental team will employ to ensure 100 percent compliance with environmental permits, programmatic agreements (if using), orders, opinions, clearances and authorizations, and protection of the environment. The Environmental Compliance Plan shall also include a schedule for accomplishment of each activity. In addition to the foregoing, the Plan shall include:

- (a) Environmental inspections and investigations;
- (b) Environmental constraints maps;
- (c) Strategies and techniques for avoiding and minimizing environmental impacts early in the design development process and for mitigating on-site those impacts which can not be avoided;
- (d) Strategy for coordinating with the Department;
- (e) Completion of applications for all required environmental permits;
- (f) Plan for implementation of all actions required under environmental permits, orders, clearances, and authorizations obtained by the Department and/or the Design-Builder;
- (g) Plans for mitigating and remediating impacts;
- (h) Environmental compliance team roles, responsibilities and authority;
- (i) Identification of all required environmental permits and approvals;
- (j) Procedures for Compliance Plan implementation;
- (k) Level of anticipated regulatory Authority participation in Project activities

- (l) Environmental controls and mitigation methods such as, but not limited to:
 - (1) Erosion Prevention and Sediment Control and water quality, indicating orange fencing placed around all sensitive areas that will not be affected by the project, so as not to disturb areas..
 - (2) Dust control and air quality.
 - (3) Wetland and wildlife protection.
 - (4) Waterway and aquatic species protection.
 - (5) Cultural resources protection.
 - (6) Noise control.
 - (7) Hazardous material/waste management.
 - (8) Floodplains in accordance with 23 CFR Part 650 Subpart A.
- (m) Procedures for inspection, monitoring, and corrective and preventive actions
- (n) Procedures for final monitoring inspections to assess compliance with permit requirements. Permits can require monitoring for up to 5 years for temporary wetland impacts, relocated streams, pyrite encapsulation, etc.
- (o) Environmental training program processes.

The Design-Builder assumes all legal responsibilities of the permittee for a Design-Build Project (whether or not they obtain the permits) as indicated in the permit that relate to protection of species, "waters of the United States", "waters of the State of Tennessee", and/or a Biological Assessment addressing any potential impacts to endangered, threatened, or otherwise protected species under federal and/or state laws, obtaining concurrence from USFWS and TWRA of any needed Biological Assessment and related species protection activities or techniques pursuant to the legal relations and responsibilities within this **DB Standard Guidance**.

2.5.5. SAFETY AND HEALTH PLAN

The Design-Builder shall perform all work in a skillful manner with due regard to the safety and health of its employees and the public. The Design-Builder shall comply with all laws concerning safety, health, and sanitation standards. The Design-Builder shall not require workers to perform work under conditions that are hazardous, dangerous, or unsanitary. The Design-Builder is required to comply with all safety standards as specified by the Department, FHWA, and OSHA and must provide all appropriate safety equipment to field personnel. Safety guidelines and procedures for archaeological fieldwork can be found in Gorton (1999).

The Design-Builder shall establish and implement a Safety Plan, as required by Contract, for Review and Acceptance by the Department only when a Project Safety Manager is required within the Key Personnel. However, the Design-Builder shall have some type of safety plan for use on a Project whether or not it is required for submittal to the Department for Review and Acceptance.

The Design-Builder shall require its Safety Manager to verify by inspection that the requirements of this **DB Standard Guidance** and the Design-Builder's Safety Plan and safety procedures are being strictly complied with.

procedures in the Federal Highway Administration (FHWA) publication Hydraulic Engineering Circular (HEC) HEC-18 for all span bridges in the Department Region 4 (west Tennessee) and any other part of the state where foundations will not be placed on bedrock.

Bridge deck drainage analysis will be performed according to procedures in the FHWA publication HEC-21 for all span bridges unless the Department Standard 11-1 (Open) bridge rail is used.

An electronic hydraulic design file, including all layouts and design analyses, stamped by a Professional Engineer licensed in the state of Tennessee shall be submitted to the designated Department contact person. This file shall include a hydraulic model with detailed design documentation.

5.2.7. RETAINING WALLS

Retaining walls for bridge or roadway projects shall conform to the Department retaining wall policy.

5.2.8. PROJECT SURVEY

The survey for the project is to be tied to the Tennessee Geodetic Reference Network. Project plans shall show the horizontal datum, vertical datum, and the datum adjustment factor on all sheets that contain survey information. Control points, benchmarks, horizontal controls, and vertical controls are to be shown in the project plans as well. All surveys shall comply with the most current version of the Department's Survey Manual and the Department's Roadway Design Guidelines, except as modified by the Contract.

5.2.9. REGULATORY PERMITS

The Design-Builder will obtain and pay for the regulatory permits when they are required by applicable laws, the Plans, or Contract specifications, unless otherwise specified in **Contract Book 3 (Project Specific Information)**. These costs shall be included in the Contract Amount. If the Department provides the permits within **Contract Book 3 (Project Specific Information)**, the Department will transfer all permits obtained to the Design-Builder. See the Department's Roadway Design Guidelines for general guidance.

It is understood and agreed that the Design-Builder is responsible for performing Supplemental Ecological Boundary Studies as required under Ecological Studies Scope of Work specified in Appendix B. All Department supplied and supplemental ecological information shall be included and labeled on plans.

It is also understood and agreed that the Design-Builder assumes all responsibilities of the permittee as indicated in the permit that relate to protection of the "waters of the United States" and/or "waters of the State of Tennessee" pursuant to the following:

1. Section 404 of the Federal Clean Water Act (33 U.S.C. §1344), and all implementing regulations, including without limitation regulations of the U.S. Army Corps of Engineers governing permits for discharges of dredged or fill material into waters of the United States in 33 CFR Part 323;
2. The Tennessee Water Quality Control Act (T.C.A. §69-3-101, et seq.) and all implementing regulations, including without limitation the Rules of the Tennessee Department of Environment and Conservation governing NPDES permits in Chapter 1200-4-10, and Aquatic Resource Alteration Permits in Chapter 1200-4-7; Class V Injection Well Permits for work in or near sinkholes;
3. Section 26a of the TVA Act of 1933 as amended (49 Stat. 1079, 16 U. S. C. sec. 831y1.) and all implementing regulations, including without limitation the regulations of the Tennessee Valley Authority governing construction in the Tennessee River System in 18 C.F.R., Part 1304;
4. The Tennessee Wildlife Resources Agency Reelfoot Lake Watershed Management permit program (T.C.A. Title 70, Chapter 5), and all implementing regulations, including without limitation regulations authorizing any activity, practice, or project which has or is likely to have the effect of diverting surface or subsurface water from the Lake or have the effect of draining or otherwise removing water from Reelfoot Lake;
5. Construction, reconstruction, and/or repair of bridges over navigable waterways could require a United States Coast Guard Bridge Permit. The regulations governing Coast Guard Bridge Permits are codified in 33 CFR 114-118. Additional information regarding this program can be obtained from the Coast Guard Office of Bridge Administration.

Additionally, for construction activities on Design-Build projects, the Design-Builder will be responsible for implementing the requirements of the Statewide Storm Water Management Plan (SSWMP) or elements of the SSWMP resulting from the implementation plan and is required to attend all training required by the SSWMP.

Permits may be modified by regulatory agencies during the course of performing the work under the Contract. Therefore, wherever the term "order," "permit," "opinion," "programmatic agreement," or "authorization" is used in the Contract, it is intended to refer to the current version in effect at the time the event governed by it takes place.

An emphasis shall be placed on maintaining the construction project in regard to environmental requirements. Construction Projects require various permits to allow construction work to be performed.

A TDEC permit may also be required when activities such as core sampling, seismic exploratory operations, soil surveys, soil sampling, and historic resources surveys are within waters of the state. This permit is also required for placement and operations of scientific measurement devices.

Various Programmatic Environmental Documents are as follows:

- FHWA – NEPA Document, Programmatic Categorical Exclusion Agreement.
- SHPO MOUs for:
 - Miscellaneous Improvements;
 - Improvements Made under the Highway-Rail Grade Crossing Program;
 - Intersection Improvements;
 - Improvements Made under the Pavement Management Program;
 - Improvements for Roadside Safety;
 - Culvert Repair and Replacement under the Small Structures Program;
 - Bridge Repairs.
- US Fish & Wildlife Service MOA for:
 - Bridge repair projects except over certain high-quality streams;
 - Turning lane projects;
 - Traffic signals;
 - Guardrails;
 - Railway signals & signs;
 - Maintenance of roadway ditches & catch basins.
- TWRA - pending agreement about stream access points adjacent to bridge projects.
- TESA – Multiagency agreements.

Preparation of complete permit packages will be the responsibility of the Design-Builder. The Form G shall be included with all permit application package. The Design-Builder will act as an authorized representative for the Department for permit purposes only. Plans detailed enough showing the impacts to "waters of the United States" and/or "waters of the State of Tennessee" shall be submitted with an application letter describing in detail the impacts. Permit sketches for individual permits (IARAP or I404) shall be prepared utilizing the Department template for permit sketches. If any agency rejects or denies the permit application, it is the Design-Builder's responsibility to make whatever changes necessary to ensure the permit is approved. The Design-Builder will be responsible for preparing designs and proposing construction methods that are permissible. All permits required for a particular construction activity will be acquired prior to commencing the particular construction activity. Delays due to incomplete permit packages, agency rejection, agency denials, agency processing time, or any permit violations will be the responsibility of the Design-Builder, and will not be considered sufficient reason for time extension.

The Department, at its discretion, may make a determination to grant a non-compensable time extension for any impacts beyond the reasonable control of the Design-Builder in securing permits in an approved Change Order. Furthermore, as to any such impact, no modification provision will be considered by the Department unless the Design-Builder clearly establishes that it has continuously from the beginning of the Project efficiently and effectively pursued the securing of the permits including the utilization of any and all reasonably available means and methods to overcome all impacts.

All substantive contact with regulatory Authorities by the Design-Builder shall be conducted by the appropriate, qualified environmental task lead or the Environmental Manager. The Design-Builder shall fully review guidance material available on the regulatory Authorities' Internet sites before contacting the Authorities. The Design-Builder shall not contact the regulatory Authorities before the Department's Acceptance of the Environmental Compliance Plan without prior approval of the Department.

If a NPDES Construction General Permit (CGP) is required for the Project, the Design-Builder shall prepare a Storm Water Pollution Prevention Plan (SWPPP) utilizing the the Department SWPPP template and a Notice of Intent (NOI). The template shall be used as a starting guide to SWPPP preparation and the Design-Builder is responsible for complying with all requirements of the CGP. The SWPPP shall include the EPSC plans for application of coverage under the CGP. The SWPPP and NOI shall be submitted along with the Design-Builder's Certification (Finding of the EPSC plan) at least 30 Business Days prior to beginning construction activities. Once a NOC is received by the Design-Builder, the EPSC plans shall be kept current for all phases of construction. Any changes in scope subsequent to submitting the SWPPP for coverage under the CGP shall be submitted to TDEC for their records.

5.2.10. WILD AND SCENIC RIVERS

The Design-Builder must determine if federally-designated Wild and Scenic Rivers, or those under study for designation, are in the project area. Rivers are designated under the federal Wild and Scenic Rivers Act. As of 2006, no Tennessee rivers are under study and only one river has been designated: the Obed Wild and Scenic River, in Morgan and Cumberland counties in East Tennessee on the Cumberland Plateau.

If a project has the potential to adversely impact the Obed River, or any rivers added to the listing for study or through designation, early coordination must be undertaken with the US Department of Interior, National Park Service. Potential effects of the project must be analyzed; adverse effects include alteration of the free-flowing nature of the river and alteration of the setting or deterioration of the water quality. If adverse effects are identified, contact the designated Department contact to start consultation with the NPS to avoid or mitigate the impacts. In addition, publicly-owned waters of designated rivers are subject to Section 4(f), and public lands adjacent to designated rivers may be subject to Section 4(f). For each alternative that takes land, coordination with the NPS will provide information on the management plan, specific affected land uses and any necessary 4(f) coordination.

Tennessee also has Scenic Rivers, which have been designated under Tennessee Scenic Rivers Act of 1968. Also High Quality Streams and Wetlands (Tier II or "Exceptional Tennessee Waters").

- Pile cut-off elevation;
- Pile tip elevation;
- In place pile length.

Safety

- Traffic Control Devices Checklist (Circular Letter 712.07-01).

Guardrail

All Guardrail shall be inspected at the time of installation. The Department or the independent CEI Project inspector shall complete the Guardrail and Guardrail Terminal Anchor Daily Field Report.

Guardrail End Terminals shall be tagged using the appropriate Guardrail Decal available from the designated Department contact person.

- Guardrail and Guardrail Terminal Anchor Daily Field Report (Circular Letter 705.05.01).

Deficient Guardrail found upon inspection shall be documented on the Guardrail Inspection Form for Deficient or Deviated Terminal Units.

7.2.6. EPSC INSPECTION

The Storm Water Pollution Prevention Plan (SWPPP), the Erosion Prevention and Sediment Control (EPSC) plans, and all applicable environmental permits shall be adhered to on the project. Please review the Statewide Storm Water Management Plan (SSWMP) and the implementation of it for training and inspection requirements.

Various permits require routine inspections of EPSC measures, documentation of environmental issues that arise, and completion of various reports. The Design-Builder shall be responsible for compliance with all applicable environmental regulations, including reporting and records keeping.

It is the Design-Builder's responsibility to determine whether or not coverage under the NPDES Construction General Permit (CGP) is required and whether or not a Notice of Intent (NOI) including a Storm Water Pollution Prevention Plan (SWPPP) is required. It is essential that the SWPPP and EPSC plans be followed, and revised as needed, to fully comply with all environmental permits on the Design-Build Project.

The Department requires special emphasis on the proper installation and maintenance of EPSC measures needed due to the on the Design-Build Project storm water requirements. The Design-Builder shall furnish an EPSC supervisor (EPSCS) for EPSC inspections. The EPSCS shall be responsible for coordinating all EPSC activities and features within the Project limits and affected areas for the duration of the on the Design-Build Project. This will be done with the intent to prevent eroded materials, sediments or other pollutants disturbed by construction activities from reaching streams or leaving the limits of construction. The work shall be done in accordance with all applicable special provisions, approved plans, of the the Department Standard Specifications Section 209 current NPDES CGP and all other permit requirements or as directed by the Department.

The Design-Builder shall conduct routine EPSC inspections (as required in the NPDES CGP or within the SSWMP (whichever is more restrictive)) and document (with notes and pictures) the findings to assure that the SWPPP is being followed and non-compliance is unlikely. These EPSC inspections shall include all work associated with the Design-Build project (i.e., waste and/or borrow areas, staging areas, etc.). These EPSC inspections shall be documented on the Erosion Prevention and Sediment Control Construction Inspection Report. This form shall also be used to document Design-Builder compliance with EPSC requirements in conformance with TDEC, USACE, and/or TVA permits. The EPSC inspection report and instructions are noted in Circular Letter 209.01-02.

There is another form called the Construction Storm Water Inspection Certification. The purpose of this form is to certify that inspections of storm water discharge points and EPSC controls at the construction site have been performed. Certification Report instructions are noted on the 2nd page included with the EPSC inspection report form.

Repair and maintenance of all EPSC measures shall be made within 24 hours after any environmental inspection or assessment. Failure to comply with this timeframe may result in Liquidated Damages to be deducted from monies due the Design-Builder. It is the Design-Builder's responsibility to notify the Department when a NPDES CGP is required on the Design-Build Project. If the Department is not notified that these requirements exist prior to any land disturbance, all construction related work shall be immediately shut down until the Design-Builder has obtained NPDES Permit Coverage and Liquidated Damages shall be deducted from monies due the Design-Builder.

Whether or not any environmental permits are required, if any land disturbance (including clearing and grubbing) activities occur on the Design-Build project, EPSC measures are required to prevent erosion and control sediment from leaving any work site associated with the Design-Build project and inspected on a routine basis.

All environmental permits, reports and documentation shall be kept at a location within the work site at all times during construction. At any time a regulatory agency requests to view any written environmental information on the Design-Build Project, the Design-Builder must comply with this request in a timely manner.

A Notice of Termination (NOT) – Storm Water Discharges Construction Activity (Circular Letter 107.08-01) notifies TDEC of the request to terminate coverage of the General NPDES Permit for Discharges of Storm Water Associated with Construction Activities. Instructions for completing the NOT form are noted in Circular Letter 107.08-01.

7.2.7. ENVIRONMENTAL QUALITY ASSURANCE PROJECT ASSESSMENTS

If a NPDES CGP is required, the Design-Builder shall have Environmental Quality Assurance (QA) Project Assessments for the Design-Build Project. These assessments include all work associated with the Design-Build project (i.e., waste and/or borrow areas, staging areas, etc.). If not provided by the Department, the Design-Builder will be required by the Contract to acquire the services of an independent, professional Certified in Erosion Prevention and Sediment Control (CPESC) on projects with a NPDES permit to conduct Environmental Quality Assurance Project Assessments. The purpose of the QA Project Assessments is to provide a “third party” independent review to assure that the EPSC measures are installed, repaired, and maintained as required, and assure the requirements of the environmental permits are being documented and followed. A QA Project Assessment report on a form provided by the Department, including pictures, shall be produced for every assessment and submitted concurrently to both the Department and TDEC within five (5) Calendar days after each QA Project Assessment. Failure to comply with this timeframe may result in Liquidated Damages to be deducted from monies due the Design-Builder. Regardless of whether the Department or the Design-Builder’s independent CPESC consultant indicate deficiencies on the QA Project Assessment report, no additional money shall be added to the Contract Amount to alleviate the deficiencies; however, if deficiencies continue to reoccur, Liquidated Damages may be deducted from monies due the Design-Builder.

The QA Project Assessments should be conducted at a frequency stated within the SSWMP, or more frequent if violations or repeat non-conformances occur, but no less than monthly, unless written approval to do so is given by the Department.

Upon concurrence of final stabilization by all involved parties, and the receipt of the final Environmental QA Project Assessment report from the QA Project Assessment team leader (by the Department or independent firm as specified in the Contract), the NOT form shall be completed and submitted to TDEC by the Design-Builder Project Manager with a copy sent to the Manager of the Department Alternative Contracting Office.

7.2.8. PUBLIC RELATIONS AND PUBLIC INFORMATION

The Design-Builder should provide information every Tuesday afternoon to the Department regarding lane closures, construction updates, and general project information. The Design-Builder SHALL NOT have contact with the media, unless specifically requested and/or approved by the Department.

7.2.9. DOCUMENTATION

The Department or the Independent CEI shall maintain a project diary on a daily basis to document the daily activities and major events on a Project.

CHAPTER 8: TITLE VI PROCEDURES

8.1. TITLE VI COMPLIANCE REVIEWS

49 CFR 21.9; 23 CFR 200.9 (4) (B) (5), (6), (7); 23 CFR 200.11

Nondiscrimination provisions apply to all federally assisted programs and activities of Federal-aid recipients, Subcontractor-recipients, and Design-Builders, regardless of tier. The provisions prohibit any use of Federal financial assistance to subsidize, promote, or perpetuate discrimination based on race, color, national origin, sex, age, disability/handicap, or income status. Recipients are responsible for determining and obtaining compliance by their Subcontractor-recipients and Design-Builders.

Responsibilities of the Department and the Design-Builder: Every agency receiving federal financial assistance must have a comprehensive and proactive Title VI enforcement program to eliminate and prevent discrimination. Every agency that extends Federal financial assistance covered by Title VI is subject to the United States Department of Justice’s (DOJ) coordination regulations and guidelines (28 C.F.R. 42, Subpart F (1994); and § 50.3.). FHWA, for example, is required to obtain assurances of compliance with Title VI from the Department per these regulations (28 C.F.R. §§ 41.5(a)(2), 42.407(b)). In addition, Executive Order 12250 requires each agency to issue appropriate regulations or policy guidance to implement the nondiscrimination provisions of the statutes subject to Executive Order 12250 (Executive Order No. 12250, §1-402, 3 C.F.R. 298 (1981), reprinted in 42 U.S.C. § 2000d-1 (1988)). Accordingly, the Department is required to issue appropriate regulations or policy to the Design-Builder in implementing the nondiscrimination provisions of the Title VI statutes.

The Department Civil Rights Office (CRO) Title VI Program is responsible for implementing, developing, and establishing adequate procedures for identifying and addressing Title VI issues as proscribed by the Federal Highway Administration.

8.2. TITLE VI/NONDISCRIMINATION

8.2.1. SELECTED AUTHORITIES

| | |
|---|---|
| 49 CFR Part 21 | US DOT Title VI Regulations |
| 23 CFR 200 | FHWA regulation implementing Title VI of the Civil Rights Act of 1964 |
| Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations | The Executive Order requires that each Federal agency shall, to the greatest extent allowed by law, administer and implement its programs, policies, and activities that affect human health or the environment so as to identify and avoid "disproportionately high and adverse" effects on minority and low-income populations. |
| US DOT Order 5610.2 to | This Order sets forth a process by which DOT |

| | |
|---|---|
| <p>Address Environmental Justice in Minority Populations and Low-Income Populations</p> | <p>and its Operating Administrations will integrate the goals of the Executive Order into their operations. This is to be done through a process developed within the framework of existing requirements, primarily the National Environmental Policy Act (NEPA), Title VI of the Civil Rights Act of 1964 (Title VI), the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (URA), the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA), and other DOT applicable statutes, regulations and guidance that concern planning; social, economic, or environmental matters; public health or welfare; and public involvement. The Order is an internal directive to the various components of DOT and does not create any right to judicial review for compliance or noncompliance with its provisions.</p> |
| <p>FHWA Order 6640.23</p> | <p>FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations - establishes policies and procedures for the Federal Highway Administration (FHWA) to use in complying with Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898), dated February 11, 1994.</p> |
| <p>Executive Order 13166: Limited English Proficiency</p> | <p>Requires all agencies that provide federal financial assistance to issue guidance on how recipients of that assistance can take reasonable steps to provide meaningful access consistent with Title VI and the Title VI regulations. The Order also requires that agencies create plans for ensuring that their own activities also provide meaningful access for persons who are limited English proficient</p> |

1. The Design-Builder shall:
 - Endorse Nondiscrimination assurances;
 - Adhere to the requirements of Section 162(a) of the Federal-Aid Highway Act of 1973 (23 U.S.C. 324) that requires there be no discrimination on the ground of sex;
 - Attend a Department Title VI training session (register online at <http://www.tdot.state.tn.us/civil%20Rights/titlevi/training.htm>)

2. POST-AWARD COMPLIANCE REPORTS

As part of on-going monitoring, the Title VI Program will conduct annual desk audits for planning agencies, urban and rural transit systems and the Department Emphasis Program Areas.

3. MANDATORY ON-SITE REVIEWS

The Department will not randomly select the Design-Builder for on-site compliance reviews. On -site compliance reviews will be required under the following circumstances:

- A. A determination respecting probable compliance cannot be made on the basis of the Design-Builder's "TITLE VI COMPLIANCE ASSESSMENT."
- B. When Design-Builders have been found in partial noncompliance by the TITLE VI COMPLIANCE ASSESSMENT, as the result of informal resolution, have agreed to take corrective measures, within one year of the approval of Federal financial assistance for the project, or at the estimated mid-point of a project expected to be completed within less than two years. The Title VI Program has the discretion to limit such reviews to consideration of the deficiencies identified by the previous review and the corrective measures undertaken as a result of conciliation.
- C. At any time when the CRO Executive Director or Title VI Program Director believes that such a review is warranted with respect to any Project.
- D. When less than \$10,000 in state and/or federal financial assistance is provided by the Department with respect to any Project, the Title VI Program may waive any requirement for a pre-award onsite compliance review.

4. Discretionary FOLLOW-UP ON-SITE REVIEWS

The Department Title VI Program will conduct follow-up reviews as deemed necessary and appropriate to assure that federally and/or state assisted services and benefits are distributed in a fair and equitable manner.

Texas

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No, the Texas DOT does not have a dedicated webpage for design-build. However, they do have a website for environmental affairs: <https://www.txdot.gov/inside-txdot/division/environmental.html>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes, the Texas DOT does have a Design-Build guidebook.

<http://ftp.dot.state.tx.us/pub/txdot-info/spd/design-build/procurement-manual.pdf>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|---|
| NEPA | No |
| Environment | <ul style="list-style-type: none"> • Complete the environmental approval process and receive the necessary environmental approvals • Build Project Corridor Knowledge Base: Environmental documentation, including commitments and mitigation requirements • Begin ROW acquisition process, if applicable and environmentally cleared • The RFQ might include: Environmental clearance status and commitments |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | <ul style="list-style-type: none"> • Complete the environmental approval process and receive the necessary environmental approvals • Build Project Corridor Knowledge Base: Environmental documentation, including commitments and mitigation requirements • The RFQ might include: Environmental clearance status and commitments |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

Chapter 5 in the DB procurement manual discusses post-procurement activities but not related to environmental commitments. Environmental flow chart can be found here:

<http://ftp.dot.state.tx.us/pub/txdot-info/env/toolkit/110-02-fig.pdf>

Utah

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, the Utah DOT has a dedicated webpage for Design Build.

<https://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:4552,72396>

The Utah DOT also has a dedicated webpage for P-3:

<https://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:1919>, Public-Private Partnerships (PPP) are agreements between UDOT and private entities for various purposes. The following information is specific to the partnerships dealing with tollways

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes, the Utah DOT has a Design-Build Selection, Manual of Instruction.

<http://www.udot.utah.gov/main/uconowner.gf?n=24913107051249248>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

There is also an Environmental Process Manual of Instruction on the environmental services site:

<https://www.udot.utah.gov/main/f?p=100:pg:0:::1:T,V:241>,

| Keyword | Presence |
|---------------------|--|
| NEPA | No |
| Environment | <ul style="list-style-type: none">• Project Team perform risk analysis to understand the major factors impacting the project based on environmental study information or other known issues (such as geotechnical, utilities, and right-of-way).• Risk Analysis: Perform to understand the major factors impacting the project based on environmental study information or other known issues |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to post NEPA and permitting, however policies were provided as below for DB projects and awards:

<http://www.udot.utah.gov/main/uconowner.gf?n=10489021922653084>

<http://www.udot.utah.gov/main/uconowner.gf?n=10489114781660535>

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The Utah DOT has a Construction Manual of Instruction with close out procedures:

<https://www.udot.utah.gov/main/uconowner.gf?n=23155926721402429>

Environmental commitments are measures taken and actions performed to help compensate for adverse impacts to the environment. To successfully implement these measures, there needs to be good communication from design to construction. Environmental commitments are identified in environmental documents for projects. In the construction phase, all commitments must be followed, monitored, and tracked. Long term commitments are tracked even into maintenance. Commitments are communicated to construction staff in several ways. They can be shown in roadway drawings, detail drawings as individual items, and in Special Provisions. In project plans, there may be commitments listed in a spreadsheet and on one or more plan sheets.

Vermont

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, the State of Vermont Agency of Transportation has a dedicated webpage for Design-Build.

<http://vtrans.vermont.gov/contract-admin/alternative-delivery/design-build>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Vtrans does not have a manual or guidebook, but they do have several separate procedures and information documents.

The State of Vermont Agency of Transportation has a site for documentation and procedures for Design-Build. <http://vtrans.vermont.gov/contract-admin/alternative-delivery/design-build/documentation>

Design-Build Contract Documents

This section contains sample RFQs and sample RFPs, Design-Build Definitions, Specifications, Proposal Payment Contracts, Design-Build Contracts and other documents used for advertisement and procurement with Design-Build projects.

Design-Build Procedures, Guidelines and Documentation

This section contains information such as prequalification, guidelines for Alternative Technical Concepts, VTrans Alternative Delivery Selection Matrix, Process Guide for Project Managers, TEC Scoring Criteria, Project Delivery Selection Approach, Changes to Key Personnel, procurement and administrative procedures, FHWA oversight requirements, as well as other Design-Build documentation.

Links to Current and Upcoming Projects

Current advertised projects, selection results, and links to current Design-Build projects can be found here.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|---|
| NEPA | <ul style="list-style-type: none"> • Development of the BTC shall including the following documents: NEPA Document • Timing: Prior to the NEPA Process. • NEPA Documentation <ul style="list-style-type: none"> Primary Responsibility: Project Manager The Project Manager shall use the BTC plans for submitting a request to the Environmental Section for completion of NEPA Documentation for the project. Timing: Prior to the release of the RFP. |
| Environment | <ul style="list-style-type: none"> • This meeting will include members from applicable Agency sections, such as roadway, structures, hydraulics, environmental, construction, utilities, civil rights, geotechnical, the district, materials, asset management, TSMO, and any other applicable sections. |

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| | <ul style="list-style-type: none"> • Development of the BTC shall including the following documents: Environmental Commitments Memorandum • The Project Manager shall use the BTC plans for submitting a request to the Environmental Section for completion of NEPA Documentation for the project. • The Project Manager shall coordinate with the Environmental Specialist to setup an Environmental Coordination Meeting. The purpose of the meeting will be to review the scope of the project, the schedule, the BTC and related anticipated environmental clearances. • Following the meeting, the Environmental Specialist shall send the BTC to each appropriate regulator with a cover letter requesting comments and concerns related to the BTC. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | It is important to get feedback from regulators so that Design-Build Team’s pursuing the project will have a frame of reference and expectations for important aspects of the permitting process. |
| Commitment | Development of the BTC shall including the following documents: Environmental Commitments Memorandum |
| Compliance | No |
| Monitor | What type of monitoring is required? |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

<http://vtrans.vermont.gov/environmental-manual/project-dev/final-design>

The final design phase includes development of most of the structural design, traffic signal, and landscaping details; acquisition of land and/or rights; development and execution of utility or railroad agreements; and preparation of special provisions. This phase of design culminates in the completion of the contract plans, specifications and estimate and the advertisement of the project for receipt of bids. Prior to requesting authorization to advertise the project for the receipt of bids, the Project Manager, in consultation with the Technical Services Division, establishes whether or not the CE designation (or other NEPA determination) remains valid (see below).

Permit Amendments

Design changes occasionally require permit amendments because of changes to resource impacts. Generally, these would require submission of amended plans to the resource agency along with a narrative explaining the changes to resource impacts, but the relevant agency should be consulted to ensure any regulatory requirements for permit amendments are satisfied. Plans must be submitted in the format required by the regulatory agency, and sufficient time must be allowed for the agencies to review and approve the changes.

NEPA Re-Evaluation

As described under Preliminary Design, the NEPA determination may under some circumstances need to be re-evaluated. See the NEPA Processes description for more information on Re-evaluations.

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The Environmental Specialist completes an “Environmental Documentation and Permits Clearance Memo” (“All-Clear Memo”) that details all the permits that have been acquired, who acquired them, where they can be found, and lists all of the permit conditions that are in the permit documents. For example, permit conditions could include timing restrictions for bridge work to protect fish spawning, conditions about protecting water quality during construction, or limitations on vegetation clearing. In some cases, there may be environmental commitments made during project design (included in the contract documents as Environmental Special Provisions) that are not included in any permit. Environmental Special Provisions are commitments that must be addressed during construction, such as timing of a bridge rehabilitation so as not to coincide with bat roosting periods, and thereby avoiding the need for a state or federal endangered species permit. The All-Clear Memo is given to the Project Manager so that he or she can ensure that the Contract Plans contain all of the relevant Environmental Special Provisions. Mitigation requirements are also included in the contract plans where necessary. The template used for the All Clear Memo can be found here.

Required environmental commitments, environmental special provisions, mitigation or other environmental issues should be discussed at a pre-construction conference to ensure the contractor is fully aware of all environmental mitigation issues. This conference is attended by the contractor, Project Manager, resident engineer, a representative from Technical Services (including the Environmental Section) and/or the consultant. Resource agency staff may also be invited to meetings for projects with more substantial resource impacts or mitigation. The contractor's sequence of construction, type of equipment for performing various tasks, and methods of construction are presented. The pre-construction conference gives each party the opportunity to express their concerns relative to their specific interests. The Resident Engineer must be fully knowledgeable about the concerns of the resource agencies, environmental special provisions, and how mitigation is expected to be carried out.

Representatives from resource agencies quite often visit the project site during construction to inspect the progress of the work. Generally, these visits are satisfactory and many of the representatives do not choose to attend the final inspection. VTrans Environmental Specialists also typically inspect construction sites to monitor progress and compliance with special provisions and mitigation requirements.

Any resource agency that has a concern relative to any aspect of the construction on a project may require an on-site meeting as a permit condition, and that requirement can be incorporated into the project special provisions. This is quite common when construction is required close to or in sensitive wetlands, or archeological or historic resources. It is critical that the requested resource agency specialist be available for scheduled meetings along with the agency's resource specialist so that decisions can be made at this meeting, limiting the contractor's basis for claims of project delays.

Virginia

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, the Virginia DOT has a dedicated webpage for the Design-Build Program.

<http://www.virginiadot.org/business/design-build.asp>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes, the Virginia DOT has a D-B Evaluation Guidelines, D-B Procurement Manual, and Guidance for Locally Administered D-B Projects.

<http://www.virginiadot.org/business/design-build.asp>

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence in Evaluation Guidelines |
|---------------------|-----------------------------------|
| NEPA | No |
| Environment | No |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

| Keyword | Presence in Procurement Manual |
|---------------------|---|
| NEPA | No |
| Environment | <ul style="list-style-type: none"> • An organization or individual with a present or former contract with VDOT to prepare planning, environmental, engineering, or technical work product for the Project, and has a potential competitive advantage because such work product is not available to all potential Offerors in a timely manner prior to the procurement process. • The project has a limited number of issues that must be resolved such as utility conflicts, right-of-way acquisitions, geo-technical conditions, hazardous materials, wetlands and environmental concerns or other such issues. Risk management plans have been fully developed. |
| Cultural (resource) | No |
| Historic | No |
| Archaeological | No |

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|-----------------|----|
| Paleontological | No |
| Noise | No |
| Species | No |
| Stormwater | No |
| Erosion | No |
| Permit | No |
| Commitment | No |
| Compliance | No |
| Monitor | No |
| Mitigation | No |

| Keyword | Presence in Guidance for D-B Projects |
|---------|---|
| NEPA | <ul style="list-style-type: none"> • Note: Prior to release of the RFP, the NEPA decision document must be issued for Federally Funded Projects and VDOT Public Involvement requirements must be met. • VDOT best practice - NEPA process is always complete for VDOT administered Design-build projects prior to release of the RFP • Coordinate with the LDT to determine/establish the “Foot Print” of the project so NEPA can be initiated • Environmental – Identify all environmental requirements/ commitments from State Environmental Review Process (SERP), NEPA, etc. prior to proceeding with the project and ensure they are assigned to appropriate party (locality or design-builder) for implementation. • RFQ – This can be released prior to completion of NEPA. The release date will vary from project to project. • Recommend the RFP not be released prior to the completion of NEPA. (VDOT best practice - NEPA process is always complete for VDOT administered Design-build projects prior to release of the RFP) • Any studies or other items that will help the Offeror to develop his Proposal should be provided: NEPA <p>National Environmental Policy Act (NEPA)</p> <ul style="list-style-type: none"> • NEPA approval obtained from FHWA (PCE, CE, FONSI, or ROD). Include NEPA documentation and supporting technical studies in RFP information package. • VDOT completes R/W Re-evaluation, PS&E Re-evaluation, and Environmental Certification prior to release of RFP. Distributes to VDOT Project Coordinator and locality. Include in RFP information package. • Identify environmental commitments and assign responsibility in RFP (locality or Design-builder). Outstanding items require completion prior to written release of ground disturbing activities (i.e. water quality permits must be obtained). • When the outstanding issues (e.g. permits are obtained) are addressed, locality provides information to VDOT, VDOT updates the Re-evaluation and Environmental Certification and distributes to VDOT Project Coordinator and locality. Design-builder should be provided copies. |

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| | <ul style="list-style-type: none"> • If design changes are made by design-builder: <ul style="list-style-type: none"> ○ Design-builder provides any technical studies to support NEPA document re-evaluation. ○ Locality prepares NEPA document re-evaluation and submits to VDOT for coordination with FHWA. ○ Locality responsible to provide design-builder with any additional environmental commitments for implementation. |
| <p>Environment</p> | <ul style="list-style-type: none"> • Check the status of the environmental document. • Further information regarding environmental documentation for locally administered projects can be found at the following location: • http://www.virginiadot.org/business/bu-environmentalRequirements.asp. • Environmental – Identify all environmental requirements/ commitments from State Environmental Review Process (SERP), NEPA, etc. prior to proceeding with the project and ensure they are assigned to appropriate party (locality or design-builder) for implementation. • Assemble the project development team. This team will include the PM- Locality, and its representatives from various project disciplines including S&B, L&D, Materials, Environmental, and Right-of-Way / Utilities Divisions. <p>Preliminary Plan Requirements:</p> <p>1a. Environmental</p> <ul style="list-style-type: none"> • State Environmental Review Process (SERP) <ul style="list-style-type: none"> ○ VDOT completes SERP coordination/ Preliminary Environmental Inventory (PEI). Include in RFP information package. <ul style="list-style-type: none"> • If potential exists and as time allows, Locality performs Phase I and II Environmental Site Assessments prior to RFP • For minor drainage structures (less than 48” dia. or equivalent) any hydraulic analysis required to determine hydraulic adequacy of existing structures or to size new drainage facilities, such as at new interchange locations, locations where enclosed systems will be required or where the roadway will be on new location, should be confined to the bare minimum needed to determine cost estimates, right of way requirements or environmental impacts. • Coordinate the completion of the necessary Environmental Document, i.e. – PCE, CE, EIS and any environmental commitments and/or conditions of regulatory approval. • Complete PS&E re-evaluation and Environmental Certification and provide in RFP Information Package. (Note: FHWA Agreement requires PS&E re-evaluation and Environmental certification be complete prior to advertisement) • Environmental Certification • All key project personnel should be present at such meetings (PM, Construction Manager, QAM, Design Manager, VDOT Environmental Manager, Key subcontractors). |

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| | <ul style="list-style-type: none"> • Submit and coordinate any plan reviews or approvals, i.e. - R/W, Utilities, Environmental, etc. (if applicable) |
| Cultural (resource) | <p>Preliminary Plan Requirements: Section 106 of the National Historic Preservation Act (Cultural Resources)</p> <ul style="list-style-type: none"> o Locality obtains effect determination; executes Memorandum of Agreement if appropriate. Include in RFP information package. o Determine responsible party (Locality or DESIGN-BUILDER) for any design/construction commitments. Include in RFP information package. <p>Section 4(f)</p> <ul style="list-style-type: none"> o Locality provides information to VDOT, VDOT coordinates with FHWA on applicability. o If applicable, locality completes 4(f) Evaluation or 4(f) de minimus finding for VDOT/FHWA. Include in RFP information package. o Determine responsible party (locality or design-builder) and include in RFP. |
| Historic | Section 106 of the National Historic Preservation Act (Cultural Resources) |
| Archaeological | No |
| Paleontological | No |
| Noise | <p>Noise</p> <ul style="list-style-type: none"> o VDOT determines if Type 1 project. If a Type 1 project, locality performs noise analysis prior to release of RFP. o Noise analysis assesses impacts and determines if barriers are feasible / reasonable. o VDOT/FHWA Noise Abatement Committee (NAC) concurs on feasible / reasonable and recommends to Chief Engineer. o If barriers are required, information is provided in RFP. o If design changes are made by design-builder, locality updates noise analysis, coordinates with VDOT, and provides any changes in barrier quantity and/or design to design-builder. <p>Identify potential noise barrier locations along with top and bottom wall elevations (survey information).</p> <p>Identify noise barrier locations for bridges/structures.</p> |
| Species | <p>Threatened and Endangered Species</p> <ul style="list-style-type: none"> • Locality determines presence/absence of T&E species in coordination with resource agencies and the need for further studies. • If required, habitat assessments may be completed by locality prior to release of RFP; or the task may be assigned to the design-builder. • If suitable habitat is present, responsible party (locality or design-builder) coordinates with regulatory agencies. If this occurs prior to RFP, commitments (i.e. Time of Year restrictions) are included in the RFP. • If habitat assessments or T&E species surveys are performed by the design-builder, locality is responsible for oversight of coordination with regulatory agencies. |

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| <p>Stormwater</p> | <p>Identify those areas where stormwater management facilities may be needed based on new impervious areas of one acre or greater draining to any one individual or common outfall.</p> <ul style="list-style-type: none"> • Determine if they can be located inside the existing right of way such as interchange infield areas or median areas between the existing lanes or identify areas where they may be located outside of the existing right of way. • Perform preliminary hydrology calculations to determine the approximate size of the stormwater management facility required and any right of way requirements. |
| <p>Erosion</p> | <p>Determine any off-site improvements needed in order to meet the requirements of Minimum Standard 19 of the Virginia Erosion and Sediment Control Regulations. For erosion and sediment control, identify those areas where temporary sediment basins may be required.</p> <ul style="list-style-type: none"> • Determine if they can be located inside the existing right of way or identify areas where they may have to be located outside of the existing right of way. • Perform preliminary hydrology calculations to determine the approximate size of the temporary sediment basin required and any right-of-way requirements. • For all other erosion and sediment items, assume token quantities for the purposes of cost estimates. |
| <p>Permit</p> | <p>Water Quality Permits</p> <ul style="list-style-type: none"> • Locality determines whether water quality permits will be required based on preliminary plans. • If permits are required, Locality assigns responsibility in RFP to either locality or design-builder: • Locality assigns responsibility in RFP to locality or design-builder if wetland/stream compensation required. • A programmatic variance for design-build projects from Specification 107.02 of VDOT's Road and Bridge Specifications 2002 (requiring acquisition of water quality permits prior to advertisement) is in effect until March 6, 2012. • Identify environmental commitments and assign responsibility in RFP (locality or Design-builder). Outstanding items require completion prior to written release of ground disturbing activities (i.e. water quality permits must be obtained). • Identify whether or not Coast Guard permits will be required • Water Quality Permit Manual (if applicable) • Ensure EQ-555 has been completed and signed. This documentation must be submitted prior to issuance of the RFP. This documentation certifies the locality has obtained all permits prior to advertisement or has plans in the RFP to obtain. |

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| Commitment | <ul style="list-style-type: none"> • Identify environmental commitments and assign responsibility in RFP (locality or Design-builder). Outstanding items require completion prior to written release of ground disturbing activities (i.e. water quality permits must be obtained). • Locality responsible to provide design-builder with any additional environmental commitments for implementation. • Coordinate the completion of the necessary Environmental Document, i.e. – PCE, CE, EIS and any environmental commitments and/or conditions of regulatory approval. • Environmental – Identify all environmental requirements/ commitments from State Environmental Review Process (SERP), NEPA, etc. prior to proceeding with the project and ensure they are assigned to appropriate party (locality or design-builder) for implementation. |
| Compliance | No |
| Monitor | VDOT Asbestos Monitoring Procedures |
| Mitigation | No |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

No information was found related to process or practices. The Virginia DOT has an environmental programs webpage with a commitment to environmental issues considered during planning, delivery, operation, and maintain the infrastructure.

<http://www.virginiadot.org/programs/pr-environmental.asp>

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

If any environmental commitments have been identified during agency coordination, the Sponsor is responsible for ensuring they are implemented at the appropriate time. Implementation of environmental commitments is not optional, but required. Environmental commitments for Enhancement projects can include, but are not limited to, conducting an archaeological survey, providing the Virginia Department of Historic Resources (VDHR) with copies of final plans before construction, or having a qualified archaeologist monitor during ground disturbing activities. Once the Sponsor has implemented the environmental commitments, documentation to that effect must be forwarded to the VDOT District Environmental Manager.

Failure to implement environmental commitments may jeopardize FHWA's federal funding of an Enhancement project

http://www.virginiadot.org/business/environmental_requirementsTEP.asp

Washington State

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, the Washington State DOT has a dedicated webpage for D-B.

<https://www.wsdot.wa.gov/Projects/delivery/designbuild/>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? Yes, the Washington State DOT has a D-B manual; their website says a New Design-Build Manual is under Construction.

https://www.wsdot.wa.gov/NR/rdonlyres/46196EB8-F9D0-4290-8F55-68786B1DA556/0/DesignBuild_GuidebookJun2004.pdf

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|-------------|--|
| NEPA | <ul style="list-style-type: none"> • WSDOT, through FHWA stewardship, is responsible for projects. NEPA processes are required to be finalized and approved by FHWA prior to project advertisement. • The NEPA/SEPA process may require a noise study to describe project impacts and required mitigation measures. • Prepare the Noise Technical Report, which documents the allowable impact to receivers, the analysis assumptions (including profiles and alignments), and the required mitigation measures to gain NEPA/SEPA approval. • 3.8.9 Conduct NEPA and/or SEPA Processes: The NEPA/SEPA process requires definition of major project features. • If an environmental reason noted in the NEPA phase, or a limit in scope and the design matrices make a deviation necessary, every Proposer should be made aware of the acceptable deviation. • As discussed in Guidebook • Section 3.6, the NEPA/SEPA processes will be completed in the preparation of the contract documents, except in some unique individual cases where it may be possible to include portions of this step in the Scope of Work. • Who will be conducting public involvement? WSDOT will be conducting all required public involvement for the NEPA/SEPA process. |
| Environment | <ul style="list-style-type: none"> • It is effective in advancing projects through the developmental stages of project scoping, concept design, environmental compliance efforts, and preliminary and advanced design, while ensuring conformance with design criteria and quality standards. • Environmental. Environmental clearances required for permanent project features, or for known temporary construction impacts will be obtained by WSDOT. WSDOT is responsible for complying with State and Federal requirements and must be signatory on many documents, such as records of decision and permit applications. |

- Environmental requirements and risk definition may require WSDOT to carry portions of the design further than others. Examples include differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature.
- As shown on the process chart, WSDOT will usually retain such high-risk areas as environmental studies, public involvement, right-of-way acquisition, and inter-agency agreements
- If there are outside constraints which could impact project delivery (environmental permits, extensive right of way acquisition, complex third party agreements) then it is possible that delays in addressing these constraints could eliminate any potential schedule advantage from design-build.
- If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required.
- If a particular risk element will require a very high level of design (environmental permitting), or is so variable that the design-builder must provide a large monetary bid, design-build may not be suitable.
- Research and confirm the availability of WSDOT specialty groups, such as geotechnical exploration, environmental, and right of way acquisition, as these areas are important and may be critical to the execution of the project.
- Some of the required project technical areas may not be easily expedited or reduced in scope (for example, environmental processes and right of way procurement) as they involve outside parties.
- However, environmental processes and acquisition of right of way must be considered separately.
- Mapping and preliminary surveys, environmental studies, hydraulic analysis, and geotechnical investigations, among others, will address significant unknown issues of a project.
- WSDOT will perform some of the tasks described as part of the environmental process or allocate them to the design-builder.
- In addition to the environmental and design processes, the construction phase of the project relies on traffic data to determine appropriate means of traffic staging and control.
- Acquiring environmental approvals is the Department's responsibility and determining the noise impacts of the project may be part of that process. Maintaining a balance between fulfilling regulatory requirements, allocating risk, and losing innovation benefits requires modification to the typical WSDOT environmental process.
- One means of accomplishing this balance involves using an assumed alignment, rather than a final alignment configuration, for the noise study and environmental applications.

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| | <ul style="list-style-type: none"> • In urban environments, consider a full subsurface utility investigation if the conditions of the existing facilities could potentially impact the project schedule. • 3.8 Environmental • Project permits present another project delivery hurdle. Even after receiving official approval of the environmental document, it is necessary to obtain a variety of permits for project impacts and construction activities. • These provisions require that the design-builder be responsible for compliance with all permits and environmental regulations. • In addition to data collection for specific design elements, a minimum level of development is required in support of the environmental process to provide a complete description of the final project, using conceptual designs if needed. • FHWA has defined the approval of the environmental document (EA/EIS) to be the formal approval for design-build. • This is generally granted along with environmental approval. • Describe third party issues such as right-of-way acquisition, utility relocations, environmental mitigation, railroad facilities, and public information to provide the Proposers with a complete view of the Department's expectations. • Involvement of support groups will continue in a contractual environment. • Major tasks, potential risk factors, and issues (e.g. safety, traffic staging and control, failure • of a team member, partnering, current environmental regulations, WSDOT Design matrices etc.) are described along with identifying adequate methods for dealing with them. (200 points) • Describe any permit violations or environmental regulation violations. Include a contact name, current address, telephone number, and fax number for each project listed. • Describe your experience developing the information for acquiring the permits required for similar projects and compliance with permit conditions and environmental regulations. • Describe any permit violations or environmental regulation violations. Include a contact name, current address, telephone number, and fax number for each project listed. • 3.3 Environmental and Other Permits (25 Points) Describe the Proposer's approach for providing required permits that are the responsibility of the Design-Builder. Describe the Proposer's approach for providing environmental information identified in the Scope of Work for Permits that WSDOT will obtain. Describe the problems anticipated in these areas and the proposed solutions. Indicated the acres of wetlands disturbed by the proposal. • Environmental Permits component of the Technical Solutions major factor: • If an environmental reason noted in the NEPA phase, or a limit in scope and the design matrices make a deviation necessary, every Proposer should be made aware of the acceptable deviation. |
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| | <ul style="list-style-type: none"> • 420 Environmental The Environmental Section of the Scope of Work must define the requirements of all environmental-related processes allocated to the Design-Builder. Allocated responsibility may include additional data collection, environmental studies, mitigation measures, reports, or permits required to complete regulatory compliance procedures. • WSDOT Environmental Procedures Manual (M31-11) • 220-01 Environmental • 420 Environmental and Other Permits Construction activities may not begin until the appropriate environmental permits are issued. • Any significant change to the intent of the design may require right-of-way and also may require a review of the Environmental documents that have been approved for this project. • Prevention Of Environmental Pollution And Preservation Of Public Natural Resources The Design-Builder shall comply with the following environmental provisions which are made a part of the Contract Provisions. A copy of the environmental provisions are available to the Design-Builder at the Project Engineer's office. If the Design-Builder's operations involve work outside the areas covered by the following environmental provisions, the Design-Builder shall advise the Engineer and request a list of all additional environmental provisions covering the area involved. A copy of all additional environmental provisions is also available to the Design-Builder at the Project Engineer's office. |
| Cultural (resource) | <ul style="list-style-type: none"> • Examples include differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature. • WSDOT will also normally maintain responsibility in high-risk areas during execution of the contract. If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required. • 36 CFR 800 - Protection of Historical and Cultural Properties • American Indian or Alaskan Native, a person having origins in any of • the original peoples of North America, and who maintain cultural • identification through tribal affiliation or community recognition. |
| Historic | <ul style="list-style-type: none"> • 36 CFR 800 - Protection of Historical and Cultural Properties • National Historic Preservation Act of 1966 • 36 CFR 60 - Determinations of Eligibility for Inclusion in the National Register of Historic Places • Archaeological And Historical Objects It is national and state policy to preserve, for public use, historical and prehistorical objects such as ruins, sites, buildings, artifacts, fossils, or other objects of antiquity that may have significance from a historical or scientific standpoint. Archaeological or historical objects, which may be encountered by the Design-Builder, |

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| | shall not be further disturbed. The Design-Builder shall immediately notify the Engineer of any such finds. |
| Archaeological | Archaeological And Historical Objects It is national and state policy to preserve, for public use, historical and prehistorical objects such as ruins, sites, buildings, artifacts, fossils, or other objects of antiquity that may have significance from a historical or scientific standpoint. Archaeological or historical objects, which may be encountered by the Design-Builder, shall not be further disturbed. The Design-Builder shall immediately notify the Engineer of any such finds. |
| Paleontological | No |
| Noise | <p>3.6.6 Noise The NEPA/SEPA process may require a noise study to describe project impacts and required mitigation measures. Acquiring environmental approvals is the Department’s responsibility and determining the noise impacts of the project may be part of that process. Maintaining a balance between fulfilling regulatory requirements, allocating risk, and losing innovation benefits requires modification to the typical WSDOT environmental process.</p> <p>One means of accomplishing this balance involves using an assumed alignment, rather than a final alignment configuration, for the noise study and environmental applications. Calculate the impact to receivers based on an assumed alignment and document the required mitigation based on the assumed parameters. Prepare the Noise Technical Report, which documents the allowable impact to receivers, the analysis assumptions (including profiles and alignments), and the required mitigation measures to gain NEPA/SEPA approval.</p> <p>Development of the project concept should balance variations in the alignment, set by the roadway geometric design criteria, with effects on required mitigation measures. In the RFP, clearly define changes in the alignment that will require an adjustment to the prescribed mitigation measures. If significant variability is allowed in the design criteria, define the reapplication process and how the schedule and cost risk will be allocated.</p> <p>Make the Department’s noise analysis model available to design-builders in order to maintain consistency of design-builders’ conceptual designs. In situations where the design-builders are allowed to deviate from WSDOT’s conceptual design, include the noise study as an attachment and provide scoring criteria during the RFP process to assist them in making design decisions.</p> <ul style="list-style-type: none"> • 23 CFR 772 - Procedures for the Abatement of Highway Traffic Noise and Construction Noise • Local codes and ordinances relating to air quality, noise, dust abatement, light, drainage, etc. <p>420.01 Noise Preliminary investigations by WSDOT have concluded that noise impacts will result from the realignment of SR 500 and the eastbound on-ramp at Thurston Way. The SR 500, Thurston Way Noise Technical Report describes the investigation, conclusions, and a conceptual solution. The required reduction in traffic noise at the impacted residences is 10 dBA. Changes to the preliminary alignment shown in the Noise Report will affect the analysis performed by WSDOT. Alternatives to the preliminary alignment or the noise wall concept shown will be</p> |

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| | <p>analyzed by WSDOT during the preparation of proposals and execution of the contract. WSDOT will require five (5) business days to reanalyze any change to the concepts shown in the Noise Report.</p> |
| <p>Species</p> | <ul style="list-style-type: none"> • Examples include differing site conditions, hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature. • WSDOT will also normally maintain responsibility in high-risk areas during execution of the contract. If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required. • Endangered Species Act (ESA) §7(d) Project List And Stormwater Effects Guidance (IL- 4020.00) • Endangered Species Act of 1973, and supplements • The Design-Builder shall prepare plans and details for stormwater detention/treatment facilities for runoff from within the Project limits in accordance with Instructional Letter 4020.00 (IL-4020.00) titled “Endangered Species Act (ESA) §7(d) Project List And Stormwater Effects Guidance” and the Hydraulics Manual. The Design- Builder shall prepare structure note sheets and backup calculations for these sheets in accordance with the PPM. |
| <p>Stormwater</p> | <ul style="list-style-type: none"> • Geotechnical design for stormwater facilities. • Describe, using a narrative and conceptual plans, the temporary and permanent Stormwater Best Management Practices (BMP’s) and drainage features for the project. • Design Approach - Appropriate and knowledgeable use of Highway Runoff Manual design features and more restrictive local requirements. Approach to meeting treatment and detention requirements for the stormwater collected from the project site. Plan for coordinating with local agency requirements in developing the stormwater plan. • Temporary Erosion and Sediment Control - Appropriate and reasonable use of temporary stormwater BMP’s for addressing and mitigating construction activities. Design acknowledges and shows responsiveness to changing conditions during construction. • Endangered Species Act (ESA) §7(d) Project List And Stormwater Effects Guidance (IL-4020.00) • The City of Vancouver’s Stormwater Ordinance • Stormwater Management Manual for the Puget Sound Basin • The Design-Builder shall conduct additional explorations as determined necessary by the Design-Builder at bridge foundation locations, along the alignment of planned retaining walls, at locations of significant cuts and fills, at minor structures such as culverts, signs, signals, and luminaires, and at the locations of stormwater retention-detention structures to supplement the geotechnical baseline data available. |

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| | <ul style="list-style-type: none"> • This project will add greater than 465 square meters (5000 square feet) impervious surface and will require a Temporary Erosion and Sediment Control Plan as part of the Stormwater Site Plan. • The City of Vancouver will require a review of the plans to insure compliance with their Stormwater Control and Erosion Control Ordinances. The Design-Builder shall coordinate with the City of Vancouver, Stormwater Services during the design process. A letter of Approval from the City of Vancouver is required prior to construction of the proposed drainage system. • A Biological Assessment (BA) has been completed, and approved by National Marine Fisheries Service (NMFS) with a requirement that it maintains the authority to review and approve the stormwater site plan. The Design-Builder shall supply a stormwater site plan to WSDOT to obtain approval from NMFS. The Design-Builder shall allow two months in the project schedule for obtaining approval of the storm water site plan by NMFS, after completed applications are received by WSDOT. The stormwater site plan for NMFS approval shall include the following: 1. The existing pavement area in square feet within the limits of [\$\$\$?\$\$\$] 2. The additional pavement area in square feet at the locations (see no. 1 above for locations) 3. The area in square feet to be treated at the locations (see no. 1 above for locations) 4. The location of treatment facilities, and 5. The description of treatment for each of the sub-basins. • All design work shall be documented in a Hydraulics Report including the size and location of drainage and stormwater treatment structures. • The Design-Builder shall prepare plans and details for stormwater detention/treatment facilities for runoff from within the Project limits in accordance with Instructional Letter 4020.00 (IL-4020.00) titled “Endangered Species Act (ESA) §7(d) Project List And Stormwater Effects Guidance” and the Hydraulics Manual. • Stormwater flowing toward the bridge shall be intercepted prior to the approach slab. |
| Erosion | <ul style="list-style-type: none"> • Provide a conceptual temporary erosion and sediment control plan. Identify unique designs, including reasons for the unique designs. • Temporary Erosion and Sediment Control - Appropriate and reasonable use of temporary stormwater BMP’s for addressing and mitigating construction activities. Design acknowledges and shows responsiveness to changing conditions during • construction. • Recommendations shall be provided for erosion protection at outlets and for materials to be used in pond or ditch linings. • The City of Vancouver will require a review of the plans to insure compliance with their Stormwater Control and Erosion Control Ordinances. <p>1-07.15 Temporary Water Pollution/Erosion Control This section is revised to read: This work is intended to prevent, control, and stop water pollution or erosion within the project, thereby protecting the work, nearby</p> |

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| | <p>land, streams, and other bodies of water. Controlling pollution, erosion, run-off, and related damage may require the Design-Builder to perform temporary work items including but not limited to:</p> <ol style="list-style-type: none"> 1. Providing ditches, berms, culverts, and other measures to control surface water; 2. Building dams, settling basins, energy dissipaters, and other measures, to control downstream flows; 3. Controlling underground water found during construction; or 4. Covering or otherwise protecting slopes until permanent erosion-control measures are working. <p>Before any work begins, the Design-Builder shall submit a plan for temporary water pollution/erosion control according to the provisions of the Scope of Work. The plan shall show the schedule for all erosion-control work, whether permanent as required by the contract or temporary as proposed by the Design-Builder. The plan shall cover all areas the Design-Builder’s work may affect inside and outside the limits of the project (including all WSDOT-provided sources, disposal sites, and haul roads, and all nearby land, streams, and other bodies of water). Before this plan has been reviewed, the Design-Builder shall do no clearing and grubbing or earthwork unless the Engineer approves in writing. The Design-Builder shall revise and update the plan whenever the Engineer so requests in writing.</p> <p>If the Engineer, under Section 1-08.6, orders the work suspended for an extended time, the Design-Builder shall, before WSDOT assumes maintenance responsibility, make every effort to control erosion, pollution, and run-off during shutdown. Section 1-08.7 describes WSDOT’s responsibility in such cases.</p> <p>If natural elements rut or erode the slope, the Design-Builder shall restore and repair the damage, with the eroded material where possible, and clean up any remaining material in ditches and culverts. The Design-Builder shall schedule the work so that grading and permanent erosion control immediately follow clearing and grubbing. If conditions prevent such scheduling, temporary control measures will be required between work stages.</p> <p>The area of excavation, borrow, and embankment work shall not exceed the Design- Builder’s ability to meet the schedule for finish grading, mulching, seeding, and other permanent erosion control work. Clearing and grubbing, excavation, borrow, or fill within the right of way shall never expose more than 70,000 square meters of erodible earth, unless the Engineer approves otherwise. The Engineer may increase or decrease this 70,000-square-meter limit in light of project conditions.</p> <p>Temporary control measures are required if it appears pollution or erosion may result from weather, the nature of the materials, or progress on the work.</p> |
| Permit | <ul style="list-style-type: none"> • Environmental clearances required for permanent project features, or for known temporary construction impacts will be obtained by WSDOT. WSDOT is responsible for complying with State and Federal requirements and must be signatory on many documents, such as records of decision and permit applications, Although a Design- Builder must provide information to support a permit application, they cannot control the actions or timing of third party regulatory agencies. • If there are outside constraints which could impact project delivery (environmental permits, extensive right of way acquisition, complex third party agreements) then it is possible that delays in addressing these |

constraints could eliminate any potential schedule advantage from design-build.

- If a particular risk element will require a very high level of design (environmental permitting), or is so variable that the design-builder must provide a large monetary bid, design-build may not be suitable.
- Obtaining Initial local agency permits
- Project permits present another project delivery hurdle. Even after receiving official approval of the environmental document, it is necessary to obtain a variety of permits for project impacts and construction activities Some statutes, such as the Shoreline Management Act and the Clean Water Act, specifically define the party responsible for obtaining permits.
- 3.7.3 Corps of Engineers 404 permit
- 3.7.4 Department of Ecology Water Quality 401 permit
- 3.7.5 Shoreline Permits
- WSDOT's responsibilities for contract administration involve monitoring contract compliance and schedules, processing progress payments, performing quality assurance activities, assisting in permitting and right-of-way acquisitions, negotiating contract amendments, and resolving disputes.
- Acquiring certain permits is another task that is officially the responsibility of the Department.
- However, preparation of complete permit application packages, based on the impacts of the actual design, will be the responsibility of the Design-Builder. Required adjustments in the permit applications or the mitigation requirements will remain with the Design-Builder. In certain cases, the Design-Builder could be made responsible for obtaining certain permits as WSDOT's agent. Provisions for the anticipated time for permit acquisition are written into the Scope of Work Section 420.02 Permits (Appendix 6). Allowances for acquisition time beyond the allotted period, due to circumstances beyond the control of the Department or the Design-Builder, will be added to the contract.
- Design-Builder has obtained all necessary permits for such work.
- Who will be responsible for permits? WSDOT will obtain permits for which we are required to be the responsible party (most environmental permits), with the Design-Builder doing the necessary research and preparation of application data. The Design-Builder will be responsible for all other permits.
- Permitting could be a big problem on certain projects. Would introduce large unknown risks. The timing of permits is typically unknown, as is the effort required to get them. Delays associated with permits could result in large cost impacts.

3.3 Environmental and Other Permits (25 Points)

Describe the Proposer's approach for providing required permits that are the responsibility of the Design-Builder. Describe the Proposer's approach for providing environmental information identified in the Scope of Work for Permits

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| | <p>that WSDOT will obtain. Describe the problems anticipated in these areas and the proposed solutions. Indicated the acres of wetlands disturbed by the proposal. National Pollutant Discharge Elimination System (NPDES) Storm Water General Permit for Construction Activity for the State of Washington. The Design-Builder shall obtain any permits that may be required prior to beginning field work.</p> <p>420.02 Permits It is the responsibility of the Design-Builder to determine which permits are required for construction of this project. Applications for permits for which WSDOT is required to be the applicant shall be prepared by the Design-Builder. Draft permit applications for these permits shall be submitted to WSDOT for review at least 14 days prior to the date the application is to be submitted. The Design-Builder shall be responsible for providing WSDOT with all necessary information, including environmental data and technical data for the roadway cross drainageways (i.e. typical sections, location and approximate areas of cut and fill within each drainage way) to support the determination of need for a permit and/or the permit application. If a permit is required from the Corps of Engineers, the plans shall be on 8-1/2" x 11" sheets. The plans for all other permits shall be on 11"x17" sheets. WSDOT, in coordination with the affected federal, state and local agencies and jurisdictions, will obtain the permits listed below, if required, upon receipt of acceptable draft permit applications and back-up information from the Design-Builder. The Design-Builder shall allow time in the project schedule for processing the applications, after completed applications are received by WSDOT. Permit approvals requiring longer than the stated time will be considered a delay in accordance with Section 1-08.8. The following permits require WSDOT to be the applicant (the length of time required for each permit after receipt of a completed package by WSDOT is indicated in the column on the right</p> <p>A. Hydraulic Permit Approval (HPA) B. Shoreline Permit C. Corps Permit D. NPDES E. Local Agency Permits</p> <p>Permits for which WSDOT is not required to be the applicant shall be the responsibility of the Design-Builder.</p> <p>Construction activities may not begin until the appropriate environmental permits are issued. This project will add greater than 465 square meters (5000 square feet) impervious surface and will require a Temporary Erosion and Sediment Control Plan as part of the Stormwater Site Plan. A National Pollutant Discharge Elimination System (NPDES) permit will be required if there are more than five (5) acres of clearing and grubbing.</p> |
| Commitment | This commitment to all phases of a contract will also adversely impact WSDOT's overall program flexibility. |
| Compliance | <ul style="list-style-type: none"> It is effective in advancing projects through the developmental stages of project scoping, concept design, environmental compliance efforts, and preliminary and advanced design, while ensuring conformance with design criteria and quality standards. |

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| | <ul style="list-style-type: none"> • These provisions require that the design-builder be responsible for compliance with all permits and environmental regulations. • Describe your experience developing the information for acquiring the permits required for similar projects and compliance with permit conditions and environmental regulations. • Allocated responsibility may include additional data collection, environmental studies, mitigation measures, reports, or permits required to complete regulatory compliance procedures. • The Design-Builder is responsible for obtaining, maintaining, and monitoring for compliance all documents and records required in the contract provisions. |
| Monitor | No |
| Mitigation | <ul style="list-style-type: none"> • The Department will develop, direct, manage, and monitor the performance of any mitigation plans required of the discovery. • WSDOT will also normally maintain responsibility in high-risk areas during execution of the contract. If unexpected conditions arise in areas such as changed conditions (differing site conditions), hazardous materials, cultural resource sites, endangered species, or other issues of an environmental nature, the Department will, unless specified otherwise in the contract, develop, direct, manage, and monitor the performance of any mitigation plans required. • The NEPA/SEPA process may require a noise study to describe project impacts and required mitigation measures. • Calculate the impact to receivers based on an assumed alignment and document the required mitigation based on the assumed parameters. • Development of the project concept should balance variations in the alignment, set by the roadway geometric design criteria, with effects on required mitigation measures. • WSDOT is responsible to identify initial impacts to a community and to develop preliminary agreements regarding site access and mitigation requirements. • When an improvement project has a direct impact on a local agency, establish all mitigation requirements and limitations between WSDOT and the local agency prior to sending out the final RFP. • However, the overall responsibility for these impacts and timeline should rest with the design-builder whenever possible, as the mitigation and timing requirements will be directly related to the design-builder's design. • This ensures that the clearances are received and general mitigation requirements are known before the project proceeds. • Required adjustments in the permit applications or the mitigation requirements will remain with the Design-Builder. • The Proposer's concept of design management, including a description of the plan for coordination of civil/structural, utilities, railroads, traffic maintenance, third party liaison, constructability and maintainability, community relations and environmental mitigation. |

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| | <ul style="list-style-type: none">• Allocated responsibility may include additional data collection, environmental studies, mitigation measures, reports, or permits required to complete regulatory compliance procedures.• The Design-Builder shall be responsible for incorporating any mitigation measures into the design of the project that are mentioned in the final Biological Assessment for this project, as well as in any other final environmental documents. |
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Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

The Washington State DOT has substantial NEPA & SEPA guidance to document environmental impacts through NEPA. <https://www.wsdot.wa.gov/environment/technical/nepa-sepa>

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

Environmental commitments and tracking is quite substantial for the Washington State DOT. Resources can be found on their website:

<https://www.wsdot.wa.gov/environment/technical/commitments-compliance>

West Virginia

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? Yes, the West Virginia DOT has a webpage for Design-Build program and the P-3.

[/https://transportation.wv.gov/highways/engineering/designbuild/Pages/default.aspx](https://transportation.wv.gov/highways/engineering/designbuild/Pages/default.aspx)

<https://transportation.wv.gov/highways/engineering/designbuild/ppp/Pages/default.aspx>

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No, the West Virginia DOT does not have a D-B or P-3 manual or guidebook.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Wisconsin

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No. Wisconsin is not authorized to use design-build for transportation projects.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Wyoming

Does the DOT have a dedicated webpage for D-B, P-3, or Alternative Delivery? No, the Wyoming DOT does not have a dedicated webpage for design-build.

Does the DOT have a D-B, P-3, or other Alternative Delivery Manual or Guidebook? No, the Wyoming DOT does not have any manuals or guidebooks for design-build.

Keyword Search: Y/N. If yes, copy and paste the text verbatim of each mention. If more than one manual/guidebook, add a table and clarify to which document each table applies.

| Keyword | Presence |
|---------------------|----------|
| NEPA | NA |
| Environment | NA |
| Cultural (resource) | NA |
| Historic | NA |
| Archaeological | NA |
| Paleontological | NA |
| Noise | NA |
| Species | NA |
| Stormwater | NA |
| Erosion | NA |
| Permit | NA |
| Commitment | NA |
| Compliance | NA |
| Monitor | NA |
| Mitigation | NA |

Communication of post-NEPA and permitting Commitments to the Contractor

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

Monitoring Contractor Follow-through Related to Environmental Commitments

List practices/processes. Identify which practices/processes are potentially replicable and/or if more information is needed to determine whether it could be replicable.

NA

NCHRP 25-25, Task 109

Successful Practices for Environmental Commitments in
Public-Private Partnerships (P3) and Design Build (D-B)
Contracts

Appendix C: Summary of Interviews on Practices and Experiences

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INTRODUCTION

State Departments of Transportation (DOTs) have chosen a variety of approaches to communicate environmental commitments for design-build (D-B) projects that are reflective of contractors' level of familiarity with the D-B process in their states, and with the state's level of experience implementing D-B in project delivery. In states with more mature D-B programs, it is common for states to have established procedures, assemble task forces, develop RFP templates, and update D-B manuals for contractors' use. In states with less established D-B programs, or where D-B has not been widely implemented, the methods of communication are based on the latest project experience and will likely evolve to meet changing needs.

While P-3 and D-B contracting processes have been addressed in federal transportation legislation and regulations (see 23 CFR Part 636: Design-Build Contracting, TEA-21, and SAFETEA-LU, MAP-21, FAST Act), requires FHWA to allow state DOT D-B contracts to proceed through the preliminary design stage before completion of the NEPA process, the majority of the state DOTs interviewed chose not to release the RFP for an alternative delivery projects until after the NEPA decision has been finalized. Additionally, state DOTs respond to the risk of reevaluation differently. In some cases, state DOTs choose to limit their risk by limiting D-B to projects that are likely to fall under Categorical Exclusion (CE) or that are not likely to have certain kinds of impacts (e.g., historic resources). Conversely, some state DOTs do not use environmental impacts and the associated level of analysis (CE, Environmental Assessment [EA] or Environmental Impact Statement [EIS]) to determine whether D-B is an appropriate delivery method.

The states interviewed universally comply with requirements stipulated in 23 CFR 636.109 (*How does the NEPA process relate to the design-build procurement process?*), which provides direction regarding when contracting agencies (i.e., state DOTs) can issue a request for proposals (RFP), award a D-B contract, and proceed with preliminary design work under the D-B contract. In developing processes that supported flexibility, coordination with resource agencies, monitoring, and others, states often borrowed from other processes currently in use in their states (such as the merger process in North Carolina) or procedures developed in states with a more mature D-B program (such as Colorado). This report summarizes key findings from this research and highlights successful practices currently in use in the states interviewed.

METHODS

The primary objective of interviewing state DOT representatives with experience on P-3 projects or D-B contracting procedures relative to environmental commitments was to build upon the literature review to further identify successful practices and obtain greater detail on the underlying policies, procedures, and methods that contribute to making the practices successful. The interviews were also used to identify candidate projects for case studies.

The project team developed an interview template that was shared with interviewees in advance of the interview. By sharing the template in advance, interviewees were able to focus their responses and provide answers in a more timely fashion. In addition to identifying successful practices in the context of environmental commitments for P-3 and D-B projects and contracting procedures, interviewees were asked to identify and compare approaches to NEPA analysis when completed prior to issuing the RFP versus issuing the RFP while the NEPA analysis is on-going. The interviews also sought to identify process variations for P-3 or D-B project development (versus design-bid-build) associated with environmental compliance or implementation of environmental commitments. In addition, interviewees were asked how their DOTs ensured compliance with environmental commitments made during the NEPA and permitting processes.

DOT staff were asked to identify tribal partners and agency staff with specific experience with P-3 projects and D-B contracting procedures. In particular, DOT staff were asked to identify potential interviewees from agencies or tribes who could speak to successful practices with regard to environmental commitments from either a tribal or agency perspective, focusing particularly on coordination, the opportunity to review environmental commitments, and contrasting DOT practices.

Some state DOTs provided supplemental documents and materials discussed during the interviews (e.g., documented procedures, examples of tracking and monitoring reporting, environmental compliance contract provisions, and others); not all of the DOT staff were able to provide material in the time available, but any additional information will be considered in later Tasks. Table 1 lists the agencies interviewed and the date of the interview.

Table 1. Interviews Conducted

| Agency | Date |
|---|-----------------|
| Arizona Department of Transportation (ADOT) | August 16, 2018 |
| Colorado Department of Transportation (CDOT) | August 3, 2018 |
| District Department of Transportation (DDOT) | August 23, 2018 |
| Florida Department of Transportation (FDOT) | August 14, 2018 |
| Georgia Department of Transportation (GDOT) | August 14, 2018 |
| Louisiana Department of Transportation and Development (LaDOTD) | August 3, 2018 |
| Minnesota Department of Transportation (MnDOT) | August 6, 2018 |
| Missouri Department of Transportation (MoDOT) | August 15, 2018 |
| Montana Department of Transportation (MDT) | August 14, 2018 |
| New York Department of Transportation (NYSDOT) | August 21, 2018 |
| North Carolina Department of Transportation (NCDOT) | August 9, 2018 |
| Pennsylvania Department of Transportation (PennDOT) | August 16, 2018 |
| Texas Department of Transportation (TxDOT) | August 17, 2018 |
| Virginia Department of Transportation (VDOT) | August 15, 2018 |
| Washington Department of Transportation (WSDOT) | August 16, 2018 |

SUMMARY OF FINDINGS: STATE DOT INTERVIEWS

States varied widely in their level of familiarity with D-B. Some states interviewed had only completed a couple of projects under any kind of alternative project delivery method; other states had completed dozens of projects over decades. The states with more mature D-B programs were able to speak to several of the practices that made those programs successful. These generally included engaging with both federal and private industry

early in the process of developing a statewide D-B program, including particular elements in every RFP, including environmental training for contractor staff, establishing a method for tracking environmental commitments, and developing a standardized approach for addressing NEPA reevaluations.

FEDERAL AND PRIVATE INDUSTRY ENGAGEMENT

Facilitating structured and efficient communication among FHWA, DOTs, and the private industry has proven to be an effective tool for several DOTs. An effective practice for these DOTs has been to establish a task force or advisory committee during development of both the RFP template and the D-B manual, and meet regularly during the development of those materials. Supporting that committee with a charter outlining purpose, goals and objectives, membership, and meetings ensures that expectations are clear and the decision-making process is transparent. Membership may include representatives from FHWA, DOT divisions tasked with D-B oversight, the DOT environmental planning division, DOT district offices, the consulting community, and the contracting community. Points of contact should also be identified with responsibility for disseminating committee activity.¹

In addition to the successful practice of assembling a task force, one DOT indicated they asked resource agencies to review RFPs prior to issuance. In these cases, the DOT sent the draft RFP to the resource agency or agencies who would be involved in the permitting process.

REQUEST FOR PROPOSAL ELEMENTS

States with well-established programs had generally developed manuals addressing D-B and, in some cases, had developed templates for RFPs that could be used specifically for D-B projects. Only states with the most experience with D-B referenced their manuals during the interviews; in some cases, they were in the process of being updated, and in other cases, a new manual had recently been released.

Among all DOTs interviewed, the most important tool for communicating environmental commitments was the RFP. Although environmental commitments are project-specific, state DOTs with environmental commitment language in their D-B manuals and/or using RFP templates indicated that having standard language was helpful in terms of identifying the environmental commitments and including language in the RFP to appropriately assign risk between the DOT and D-B contractor. States with less mature D-B programs generally had not established a set of off-the-shelf tools that could be deployed for a D-B project, and most would reference the most recent RFP let under a D-B contract when preparing successive RFPs.

Several of the states indicated that they would consider the level of environmental analysis into the requirements specified within the RFP, particularly with regard to specifying environmental personnel. If environmental commitments are numerous or require substantive monitoring, states are more likely to include environmental staff in the list of key personnel and may include specific qualifications necessary for those personnel. Otherwise, states typically defer responsibility for implementing environmental commitments to the project manager, or to the construction engineering and inspection manager.

One state indicated outlining in the RFP certain environmental commitments (e.g., historic resources) that could not be modified – in this case, the DOT indicated it would not approve design modifications that would thereby alter the impact to the historic resource and the commitment made with the State Historic Preservation Office.

¹ For an example charter, see <https://www.codot.gov/business/designsupport/innovative/documents/icac-eniv-charter>

A successful practice for some of the DOTs interviewed includes the development of an RFP template that can be used and adapted for the state's various D-B projects. Table 2 lists the RFP topics that are frequently addressed in the environmental requirements section of RFP templates shared with the project team, including particular areas of focus within the topic area.

Table 2. RFP Environmental Requirements Topics

| Topic area | Areas of focus |
|---|--|
| Environmental Manager | <ul style="list-style-type: none"> • Environmental Compliance and Mitigation Training Program |
| Environmental Compliance | <ul style="list-style-type: none"> • Environmental Compliance Work Plan • Environmental Compliance Status Reports • Environmental Compliance Work Plan Amendment • Final Environmental Compliance Work Plan • Independent Quality Assurance Program |
| Environmental Resources Requirements | <ul style="list-style-type: none"> • Air Quality • Noise • Cultural/Historical Resources, Archaeological Resources, and Historic Section 4(f) Resources • Paleontology • Trails, Parks and Recreation • Vegetation • Wildlife |
| NEPA Reevaluation and Environmental Certification | <ul style="list-style-type: none"> • NEPA Re-evaluation • Environmental Certification |

ENVIRONMENTAL TRAINING

Several states indicated the environmental training had become an important part of their D-B program. These training programs are generally developed to be relevant to every contractor on the construction site, and includes an overview of environmental compliance, an overview of NEPA and relevant regulations, the permitting process, and state-specific procedures for tracking environmental compliance.

INCENTIVES

States indicated that environmental impacts were not usually considered in project scoring. State DOTs observed that impacting additional environmental resources not identified in the RFP would affect the contractor's schedule and final cost, which would either affect the profitability of the project or make the contractor's proposal less attractive than competitors' proposal. However, for D-B projects with substantive environmental impacts, a few states identified environmental compliance explicitly in project scoring. One state DOT indicated that a proposer can receive technical credits for supporting a project in achieving a project goal: if a contractor proposes an approach that would reduce impacts to certain environmental resources, the technical credits would be effectively subtracted from the bid amount to increase the proposal's competitiveness.

Another state indicated that contractors could receive a monetary bonus for meeting additional performance metrics above contract requirements in the case of high-priority, environmentally sensitive projects. This bonus would be awarded following project completion.

TRACKING METHODS

Methods for tracking environmental commitments among DOTs varies from “worksheet” methods (i.e., Excel® spreadsheet) to online databases and is generally not specific to D-B projects. Several states have developed online software within the Project Suite Enterprise Edition within a commitment tracker module. The database is consistent for both D-B and traditional project delivery, and the contracting community’s level of familiarity with the software has helped ensure that the software is understood and used. In most cases, this software is used internally by DOTs to create an environmental tracking matrix for contractors to identify environmental commitments and activities that need to be completed. The next level of tracking for one state DOT is development of an interface with the environmental commitment tracking software so that contractors can access the system via iPad® in the field.

NEPA PROCESS, REEVALUATIONS, AND PERMIT MODIFICATIONS

It is rare for states to factor the level of environmental impact into the decision to let out a contract under D-B. Even states that have only issued D-B contracts for projects filed under a CE generally indicated that they would allow a project requiring a full EIS to also be built under a D-B contract.

Most of the states interviewed do not issue RFPs prior to finalizing the NEPA process. As a result, reevaluations are common. The state DOTs varied in their approach to requiring contractor support on reevaluations. States that have NEPA assignment under CFR 23 USC 327 appear more likely to require contractors to bear financial responsibility for any change in costs associated with a reevaluation or permit modification. In these cases, the contractor is responsible for all of the technical documents required for a reevaluation.

State DOTs with a more mature D-B program have found their overall process benefits from a mature D-B industry. Additionally, states that generally assign costs for reevaluation to the contractor find that contractors are reluctant to suggest impacting additional environmental resources because of the time and money involved. The exception lies with Alternative Technical Concepts (ATC). When appealing ATCs are presented, one state DOT indicated that it meets with the D-B contractor in confidence to determine the level of effort required for a reevaluation. In these cases, when an ATC was selected for its innovative approach to minimize, traffic, noise, drainage, or wetland impacts, the DOT indicated that the cost (time and money) associated with the reevaluation was worth the overall improvement in the final project.

In general, state DOTs did not view reevaluations as a negative aspect of the D-B process. While the DOTs acknowledged the impact to schedule, the overall reduction in schedule associated with the D-B delivery method usually eclipses the expansion of schedule due to a reevaluation. A few state DOTs indicated that they will try to clear the worst-case scenario in order to provide additional a greater level of flexibility to the D-B contractor while reducing the need for a reevaluation.

For projects where the environmental commitments are well understood, and the NEPA approval process is expected to fall under a Categorical Exclusion, states may issue the RFP prior the NEPA finding in order to incorporate a contractor’s designs into the NEPA document. While it rare among interviewed DOTs to issue the RFP prior to a Finding of No Significant Impact or Record of Decision, one state DOT indicated that it used performance-based environmental commitments (e.g., capture of 90 percent of stormwater runoff) in the

documents to provide latitude to D-B contractors and reduce the need for reevaluations. However, this state noted that there were some commitments that could not be performance-based (e.g., historic resources).

All of the states interviewed were alike in one area: while design modifications that resulted in changes to previously approved impacts would be allowed for certain resources (e.g., wetlands), none of the states would allow design modifications that could result in changes to effects determinations for historic resources. Several state DOTs indicated that if historic resources were impacted, they would secure an effect determination during the NEPA process from SHPO prior to issuing the RFP, and the determination would be explicit with regard to technical requirements.

INITIAL LIST OF SUCCESSFUL PRACTICES

Based on the interview results, the project team has identified the following list of practices identified as successful by state DOTs, with descriptions for more detailed evaluation. Upon approval from the panel, these successful practices will be evaluated in Task 3.

The following practices have been successful:

- **Establish a task force/committee to resolve issues related to D-B implementation early.** Both CDOT and NYSDOT developed a task force composed of private industry, FHWA, and DOT staff to identify issues that should be addressed in the RFP. This brought all partners to the table to identify issues early.
- **Develop a standard RFP template.** CDOT, MnDOT, and NYSDOT have developed a standard template to use in the RFP to ensure that certain items are always included. Especially when informed by concerns brought to the table by industry partners, such as in a task force or committee, this standard template streamlines the process of preparing the RFP and ensures that certain common elements are always included.
- **Invite Resource Agencies to Review RFP commitments.** NCDOT has successfully adapted the state's merger process to include projects issued under a D-B contract. The merger process includes inviting state resource agencies to participate in reviewing environmental commitments prior to issuing an RFP.
- **Develop database tools to track commitments.** FDOT, CDOT, MnDOT, PennDOT, VDOT, and TxDOT all use online database tools to track environmental commitments. Generally, these online databases are used to produce environmental tracking documents. In one case (PennDOT), states are expanding the database capability to allow contractors to directly access and manage commitments in the same database used by the state.
- **Consider a phased approach to NEPA documentation and D-B contracting.** Some states have successfully allowed a contract to be awarded prior to the NEPA finding in order to include the contractor's final design plans in the NEPA document. MDT has a two-phased approach to letting out a contract under D-B that places responsibility for completing NEPA documentation and obtaining permits on the D-B team.²

² For more information, see https://www.mdt.mt.gov/pubinvolve/restareaplan/docs/final-rest_area_plan.pdf

- **Consider writing NEPA documents to allow greater flexibility to contractors.** Rather than waiting to issue NEPA after a final design has been determined, MoDOT has ensured that D-B contractors have flexibility during design by changing the way the state writes environmental compliance documents. MoDOT now writes many of their EAs and EISs with performance-based environmental commitments in a way that supports D-B (excluding historic resource impacts).
- **Require environmental training for all on-site workers and visitors.** Several states, notably WSDOT and PennDOT have successfully minimized environmental impacts by requiring robust environmental training for all on-site workers and visitors. The training ensures that workers not only understand how to use databases used to track environmental commitments, but also the legal foundation for environmental compliance.
- **Assign the cost of reevaluation to contractors.** FDOT has found the practice of assigning costs for reevaluations to contractors to be very effective. Contractors rarely risk a reevaluation because of the increase in time and cost. Replicability could be limited based on direction from the state DOT's FHWA division. Even in those cases, contractors could be responsible for providing more or less of the technical material required for the reevaluation, or bear the cost of hiring a consultant.
- **Develop incentives specific to environmental commitments.** Incentives specific to environmental commitments were used in at least two states with mature D-B programs: TxDOT and WSDOT. Both states explicitly identify environmental compliance either in procurement or during construction. This practice may help to ensure that environmental commitments are followed, and should be explored.

INITIAL LIST OF PROPOSED CASE STUDIES

Based on the interview results, the project team has identified 10 case study candidates (Table 3). The project team will seek to provide a list of case studies that covers a range of geography, project scope, and communication method. Upon the panel's approval, these case studies will be developed in Task 5.

Table 3. Case Study Candidates

| Project Name | Location | Date Completed | Project Type | Project Cost | Reason for Consideration |
|----------------------------------|---|-----------------------|--|---------------------|---|
| <u>South Mountain Freeway</u> | Phoenix, AZ | Ongoing | 22 mile extension of Arizona State Highway 202 | \$916 M | This represents one of very few D-B projects identified where tribal issues are important. South Mountain is one of the most sacred sites for the Four Southern Tribes of Arizona, and is a listed sacred site for 20 other tribes. Impacted area includes the largest municipal park in the United States. |
| <u>Eleventh Street Project</u> | Washington, DC | 2013 | Bridge replacement | \$300 M | This is the very first D-B project undertaken in Washington, DC, and was completed under an EIS with at least three reevaluations. This project would provide insight into best practices for DOTs at an early stage of D-B. |
| <u>Louisiana 318 Interchange</u> | St. Mary Parish, LA | 2017 | New interchange, lane widening | \$55.7 M | Louisiana has done approximately 10 D-B projects, and this is one of only a few where either a supplemental NEPA document or reevaluation was required. It should be noted that the interviewees were unsure of the type of document required. The contractor presented an alternative technical concept that was not the preferred alternative in the NEPA document. LaDOTD obtained approval in coordination with the D-B contractor. |
| <u>Minnesota River Bridge</u> | Dakota County, Hennepin County, the City of Bloomington, and the City of Burnsville, MN | Ongoing | Bridge replacement, repaving, trail construction, improvements to features (lighting, signage, and drainage) | \$120 M | NEPA was performed after the project release. |

| Project Name | Location | Date Completed | Project Type | Project Cost | Reason for Consideration |
|---|--------------------------------------|----------------|--|--------------|---|
| <u>Montana Rest Stops</u> | Statewide, MT | Ongoing | Rest area major or minor rehabilitation projects, reduction of service, and new construction | varies | <p>To improve efficiency, MDT currently uses a two-phase process to develop rest area projects. During Phase I, MDT selects a consulting firm through a competitive process to evaluate a proposed site for rest area investment. Selected consultants prepare NEPA/MEPA documents and secure final permitting for the water supply system, and conditional permitting for wastewater systems.</p> <p>Once MDT has confirmed site viability, MDT initiates the Phase II design-build process by selecting a team for the second phase. The Phase II team designs and constructs the project in compliance with minimum requirements outlined in the Phase II scope of work using inputs developed during Phase I. This innovative approach would provide insights into the use of consultants to both prepare NEPA documentation and permits, as well as coordination between multiple D-B teams (and agency staff) over the life of a project.</p> |
| <u>Route 17 at Route 32 (Exit 131) Reconstruction</u> | Town of Woodbury (Orange County), NY | 2018 | Interchange reconstruction | unknown | This project was completed using an Alternative Technical Concept (ATC) proposed by the D-B contractor. |
| <u>I-2304AC</u> | Rowan and Davidson Counties, NC | 2012 | Reconstruction and widening of I-85 to an 8-lane facility | \$2.8 M | The project required an MOU between NCDOT and the NC SHPO office with regard to the Yadkin River Crossings Historic Districts; the project also required a construction permit from the Federal Energy Regulatory Commission (FERC). Coordination would have been facilitated by the state's merger process, which provides guidelines for interacting with resource agencies at certain intervals in project development. |

| Project Name | Location | Date Completed | Project Type | Project Cost | Reason for Consideration |
|--|--------------------|--|--|--------------|---|
| <u>Harbor Bridge Project</u> | Corpus Christi, TX | Under construction | bridge replacement, reconstruction of three road segments (I-37, US 181, Crosstown Expressway) | \$802.9 M | TxDOT integrated FHWA’s Invest program into the bidding process and included that as part of the scoring criteria for developer selection. That incentivized the bidding team to support TxDOT's efforts to receive Platinum status on the project. This is also an example of a DOT that sets aside incentives to developers to achieve certain environmental performance goals. |
| <u>I-405, I-5 to SR 169 (broken into stages)</u> | Renton, WA | 2012 (work is still ongoing on parts of I-405) | Interstate widening, bridge replacement, construction of noise walls | unknown | This project was nominated for the 2010 Partnership for Environmental Excellence in Construction Management award (for achieving zero permit violations), the 2011 Excellence in Environmental Design Award, and the 2012 Partnership for Environmental Excellence in Construction Management Award. Coordination was supported by co-locating contractors and DOT staff in a single office. All on-site workers and visitors were required to take environmental training. An alternative technical concept was selected to minimize impacts to environmental resources. |
| <u>Alaskan Way Viaduct - SR 99 Bored Tunnel Design Build Project</u> | Seattle, WA | Ongoing | Tunnel to replace elevated viaduct (SR 99) | \$3.2 B | The project is located in downtown Seattle and has been completed with extensive input from the surrounding community. The Viaduct collapsed after an earthquake, and the project was completed according to the fastest possible timeline. |

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Appendix D: Summary of Follow-Up Interviews

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1.0 INTRODUCTION

This document summarizes the follow-up interviews conducted for Task 4 of the research effort related to the replicability of successful practices related to communication of environmental commitments in Public/Private Partnerships (P3) and Design-Build (D-B) Contracts. This interview summary report describes the successful practices identified through previous tasks that are considered to be relatively replicable based on the follow-up interviews and the research team's assessment. Additionally, the research team identified those successful practices that have limited applicability, reason(s) for the limited applicability, and specific circumstances to which such practices may apply.

2.0 METHODS

Follow-up interviews were conducted with state Departments of Transportation (DOTs) that exhibited successful practices related to communication of environmental commitments in P3 and D-B projects and compliance with those commitments. Additionally, interviews with resource agencies were conducted to gain their perspectives on environmental commitments and compliance on alternative delivery projects. Tables 1 and 2 identify the state DOTs and resource agencies interviewed, respectively, along with the focus for each interview.

Table 1. State DOT Follow-Up Interviews

| Agency | Interview Focus |
|----------------------|--|
| Missouri DOT | Flexibility written into the National Environmental Policy Act (NEPA) documents and performance-based mitigation measures |
| Minnesota DOT | Issuing the RFP before NEPA documentation is complete and adaptations of material from Connecticut DOT (e.g., green sheets and RFP template) |
| Pennsylvania DOT | The Rapid Bridge Replacement program and what was replicable among projects in that program; required environmental training; the iPad application under development for the environmental commitment tracking database; and the requirement for D-B contractors to have environmental staff who are overseen by third-party, independent consultants hired by Pennsylvania DOT. |
| Texas DOT | The current, internal environmental commitment tracking database (ECOS), including a comparison to the EMS used for SH 130; how and when internal teams are assembled to develop technical provisions that are specific to that particular project; and why the environmental training for the Harbor Bridge Project was mandated and whether Texas DOT would consider applying that in some form to future projects. |
| Virginia DOT | The environmental commitment tracking database software, the coding for which was developed with FHWA funding and has been shared with other DOTs (e.g., Alaska). Virginia DOT has participated in interviews to discuss the application with other states. It is an enterprise software system, which holds all environmental documentation and includes a mapping system. Additionally, information will be gathered on the development of its RFP template. |
| Washington State DOT | How incentives are used to encourage a reduction in environmental impacts and how that language is included in the RFP template, the requirement for onsite environmental training, and writing NEPA documents that identify the impacts from the worst case scenario (i.e., the ROW width of an alignment). |

Table 2. Resource Agency Interviews

| Agency | Interview Focus |
|---|--|
| U.S. Army Corps of Engineers, Philadelphia District | Communication of and compliance with environmental commitments associated with the Pennsylvania DOT Rapid Bridge Replacement projects |
| U.S. Army Corps of Engineers, Pittsburgh District | Communication of and compliance with environmental commitments associated with the Pennsylvania DOT Rapid Bridge Replacement projects |
| Pennsylvania Department of Environmental Protection | Communication of and compliance with environmental commitments associated with the Pennsylvania DOT Rapid Bridge Replacement projects |
| North Carolina Department of Environmental Quality, Division of Water Resources | Integration of the merger process into the D-B RFP review process in general, and for I-2304AC in particular |
| Washington State Department of Archaeology and Historic Preservation | Communication of and compliance with environmental commitments associated with the Alaskan Way Viaduct |
| Missouri Department of Natural Resources | Communication and compliance with environmental commitments associated with the kcICON bridge project, which was completed ahead of schedule |
| U.S. Coast Guard, Atlantic Area, New York Sector | Communication of and compliance with environmental commitments associated with alternative delivery bridge replacement projects |

The following list of questions was used to guide the interviews with the state DOTs and resource agencies.

1. Among DOTs, it appears that documentation of compliance with environmental commitments may vary from project to project, or program to program. Is that the case and, if so, which projects or programs in your state have particularly effective environmental compliance and documentation methods? Is compliance similar across programs (design-build and design-bid-build)? Is compliance revisited over the life of the project or program?
2. What is the documentation required for overseeing environmental compliance?
3. At what point in project development (e.g., early planning/pre-NEPA, during the NEPA process, post-NEPA) are environmental considerations factored into a decision for alternative project delivery? When you're moving from NEPA to construction, what is different in design-build that is not true for more traditional project delivery methods?
4. If you limit D-B to only projects with small environmental impacts or impacts that are well-defined, why is that? What steps have you considered (e.g., CE, transferring risk) to better contain environmental impacts on D-B projects?
5. How are commitments made through the NEPA process and/or agency coordination carried through and realized through actual construction?

6. Does your department have documented environmental procedures specific to D-B? Are they included in a design or other project development manual? How does the manual interact with other processes and environmental compliance documents?
7. Given that programmatic agreements are favored, how is the risk managed? From an environmental compliance perspective, what are the replicable processes? How do you give latitude to both the contractors/concessionaires and resource agencies?
8. Does your department employ incentives to reduce impacts? Are there environmental benchmarks that must be met for work to proceed? If you do have incentives, how effective have they been? What metrics do you employ to determine when to award an incentive payment?
9. Who is generally responsible for overseeing compliance? At the DOT? With the contractor/concessionaire?
10. Who is generally responsible for coordinating with resource agencies? With tribal entities? With the public? When in project development does this typically happen? What works well? What could be improved?
11. Do you have any particularly successful examples of coordination with either resource agencies or tribes?

3.0 POTENTIALLY REPLICABLE SUCCESSFUL PRACTICES

The follow-up state DOT and resource agency interviews provided additional details on the replicability of successful practices related to communication of environmental commitments in P3 and D-B contracts. In addition to clarifying the details of these successful practices, an additional practice – assign bottom-line responsibility for environmental compliance monitoring – was added. Table 3 provides a summary of the replicability of each successful practice, including whether the practice is replicable at the program or project level and the approach to implement the practice.

Table 3. Replicability of Successful Practices for Communicating Environmental Commitments in P3 and D-B Contracts

| Successful Practice | Replicability |
|--|--|
| Establish interagency communication protocol for implementation of alternative delivery projects | This practice could be implemented for programmatic P3/D-B projects, or at the program level for all alternative delivery projects. Clear responsibilities, communication, critical coordination points, and decision-making procedures should be identified. This procedure can be used to ensure that resource agencies concerned are addressed early in the process and communication proceeds in an orderly fashion. |
| Develop a standardized environmental commitments element for D-B and P3 RFP template | This practice should be implemented at the program level. Standardized environmental elements incorporated into the RFP template would facilitate communication of environmental commitments. Additionally, incorporation of monitoring and reporting language into the RFP provides a way to ensure compliance with environmental commitments. |
| Invite resource agencies to review RFP commitments | Upon more detailed review, this practice does not appear to be replicable at the program or project level, given the remarkably specific instances in which it was used. |
| Develop database tools to track environmental commitments | This practice should be implemented at the program level to foster communication of and compliance with environmental commitments. It could also be implemented at the project level for projects with complex environmental impacts and related mitigation commitments. |
| Consider including performance-based or adaptive mitigation measures in NEPA documents | This practice could be implemented on a project basis, but only if the project is identified as D-B or other alternative delivery during the NEPA process and the resources impacted by the project lend themselves to performance-based or adaptive mitigation measures. |
| Require environmental training for all onsite workers and visitors | This practice could be implemented at the program level or the project level. The practice would be most successful if implemented at the program level with the requirement for on-site environmental training included in the RFP; however, it could also be successfully implemented on projects were environmental impacts are of particular concern or the potential for permit violations is elevated due to local conditions. |
| Assign the cost of reevaluation to contractors | This practice could be implemented at the program level if the state DOT has NEPA assignment or if the FHWA division will accept D-B contractor input for the reevaluation process. In these cases, state DOTs could determine what level of input to accept from the contractor (e.g., technical reports or reevaluation forms) and include that language in the RFP. |

| Successful Practice | Replicability |
|---|--|
| Develop incentives specific to environmental commitments | This practice should be implemented at the program level. Although the use of technical credits is replicable on a project basis, the consideration of technical credits would need to be implemented at the program level to establish uniform guidance with regard to RFP language and implementation. Similar to technical credits, although post-award incentives would be considered on a project-by-project basis, the use of monetary incentives would need to be implemented on a programmatic level to establish criteria under which these incentives could be consider and to apply the amount of money in a uniform way (either a certain dollar amount of percentage of the contract) within a DOT. |
| Assign bottom-line responsibility for environmental compliance monitoring | This practice could be implemented at the project level when specific resource impacts or permit conditions are of particular concern. |

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Appendix E: Case Studies

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1.0 INTRODUCTION

This document summarizes the case studies developed for the research effort on the replicability of successful practices related to communication of environmental commitments in public/private partnerships (P3) and design-build (D-B) contracts. According to the Federal Highway Administration (FHWA) Office of Innovative Program Delivery, the three main types of P3 are D-B, design-build-finance, and design-build-finance-operate-maintain. Although the term ‘P3’ may refer to a range of contract types (and even lease of existing assets), the case studies described in this document use ‘P3’ to refer to the broadest private role, design-build-finance-operate-maintain.¹

This case study summary describes the project overviews, environmental considerations (including National Environmental Policy Act [NEPA] and environmental compliance), and case application of the replicable practices revisited over the course of this research effort. Each case study also addresses the allocation of responsibility and management of risk with regard to environmental considerations. The case studies vary in the complexity of environmental impacts and related commitments. Some state departments of transportation (DOTs) selected projects for alternative delivery because they had limited environmental impacts, while other states identified the level of project complexity as a reason to select projects for alternative delivery. Under alternative project delivery contracting, responsibility is allocated to the party best able to manage the project, but responsibilities that are allocated to contractors or development entities are generally required to be well-defined to minimize contingency pricing of risks and to allow the state DOT to manage risk related to environmental compliance.

2.0 METHODS

The research team completed case studies for projects that exemplified successful practices for environmental commitments. Ultimately, eight case studies were selected based on diversity of geographic location, project type, type and significance of impacts, permits and approvals, and variety of contract vehicles (Table 1). The research team developed the case studies using insights collected during prior tasks and primarily reviewed contracting documents (both Requests for Qualifications [RFQs] and Requests for Proposals [RFPs]) and environmental review documents (e.g., Environmental Impact Statements [EISs] and Records of Decision [RODs]) to better illustrate each case study’s successful practices.

¹ Federal Highway Administration, Center for Innovative Finance Support. 2017. Public-Private Partnerships (P3s). Available at: https://www.fhwa.dot.gov/ipd/pdfs/fact_sheets/techtools_P3_options.pdf.

Table 1. Case Studies Evaluated

| Project Name | Type | Location | Date Completed | Project Type | Project Cost |
|---|-------------|--|-----------------------|--|---------------------|
| US 36 Express Lanes | D-B, P3 | Denver and Boulder Counties, Colorado | 2016 | Highway reconstruction, expansion | \$497 M |
| Minnesota River Bridge | D-B | Dakota County, Hennepin County, the City of Bloomington, and the City of Burnsville, Minnesota | 2021 (expected) | Bridge replacement, repaving, trail construction, improvements to features (lighting, signage, and drainage) | \$120 M |
| Montana Rest Stops | D-B | Statewide, Montana | Ongoing | Rest area major or minor rehabilitation projects, reduction of service, and new construction | varies |
| I-2304AC | D-B | Rowan and Davidson Counties, North Carolina | 2012 | Interstate widening and bridge replacement | \$136 M |
| Route 17 at Route 32 (Exit 131) Reconstruction | D-B | Town of Woodbury (Orange County), New York | 2018 | Interchange reconstruction | \$135 M |
| Rapid Bridge Replacement | P3 | Statewide, Pennsylvania | 2019 (expected) | Financing, design, construction, and maintenance for 558 bridges in poor condition | \$899 M |
| Harbor Bridge Project | D-B | Corpus Christi, Texas | 2021 (expected) | Bridge replacement and roadway reconstruction | \$802.9 M |
| Alaskan Way Viaduct - SR 99 Bored Tunnel Design Build Project | D-B | Seattle, Washington | 2023 (expected) | Tunnel, elevated viaduct demolition | \$3.3 B |

For each case study, a project overview is provided along with information on impacted resources, environmental commitments made through the NEPA process, and environmental compliance. Impacted resources for the two programmatic case studies were identified when they were covered in the technical provisions of the RFP. For the large-size project case studies, impacted resources were identified when the NEPA document identified construction or operational impacts. Resources identified among the projects and programs include the following:

- Air Quality
- Noise
- Cultural Resources (Archaeological and Historic Resources)
- Energy and Greenhouse Gas Emissions
- Paleontology
- Land Use
- Trails, Parks, and Recreation
- Section 4(f) Resources
- Vegetation
- Wildlife
- Protected Species
- Visual Resources
- Water Resources, including Wetlands and Floodplains
- Water Quality, including Stormwater and Erosion Control
- Hazardous Materials
- Socioeconomics

Following the project summary, the replicable successful practices implemented for the project or program are identified. Finally, allocation of responsibility and management of risk are discussed.

3.0 CASE STUDIES

3.1 US 36 EXPRESS LANES

Overview

The US 36 Express Lanes Project was led by the Colorado Department of Transportation (CDOT) High Performance Transportation Enterprise (HPTE) and the Regional Transportation District (RTD) to reconstruct US 36 from Federal Boulevard in Denver to Table Mesa Drive in Boulder. The constructed express lanes are approximately 16 miles long and cover nearly the entire length of the 18-mile connector. The project, completed in 2016, included reconstruction on US 36, the addition of one Express Lane in each direction, bus rapid transit ramp stations, auxiliary lanes between most interchanges, expanded shoulders, five bridge replacements, intelligent transportation systems, retaining walls, and an 18-mile bikeway.

US 36 is an important corridor connecting Denver to Boulder between I-25 in Denver and Foothills Parkway/Table Mesa Drive in Boulder. US 36 was initially completed in 1951 as a toll road. At the time, the four-lane road had only one interchange. As the Denver metropolitan area expanded, additional housing and employment led to the addition of 10 additional interchanges, but the number of main through-lanes remained at four. US 36 is also an important transit corridor and serves the highest ridership of any regional bus corridor in the transit system. Communities impacted include the City and County of Denver; City of Westminster; City and County of Broomfield; City of Louisville; Town of Superior; City of Boulder; and portions of unincorporated Adams, Jefferson, and Boulder Counties.

The project was completed in two phases, the first as a D-B and the second as a P3. The Ames-Granite Joint Venture was responsible for construction during the first phase. Plenary Roads Denver, another joint venture, provided financing and construction services for the second phase and will continue to operate and maintain the facility post-construction. The agreement also includes



US 36 EXPRESS LANES

| | |
|----------------------|--|
| Type: | D-B, P3 |
| Location: | Denver, Colorado, to Boulder, Colorado |
| Project Type: | Highway reconstruction, expansion |
| Project Cost: | \$497 M |
| Completed: | 2016 |

Resources Impacted:

Air Quality
Noise
Cultural Resources (Archaeological and Historic Resources)
Paleontology
Land Use
Trails, Parks and Recreation
Section 4(f) Resources
Vegetation
Wildlife
Protected Species
Visual Resources
Water Resources, including Wetlands and Floodplains
Water Quality, including Stormwater and Erosion Control
Hazardous Materials
Socioeconomics

maintenance and operation of the reversible Central I-25 express lanes, which now connect to the US 36 express lanes.

Financing for Phase 1 was secured through federal, state, and RTD funds, a Transportation Infrastructure Finance and Innovation Act loan, a federal Transportation Investment Generating Economic Recovery grant, and contributions by the City and County of Broomfield and the City of Westminster. Financing for Phase 2 was largely secured through bonds held by the concessionaire and backed by toll revenues on I-25 and US 36. Other parties include the Denver Regional Council of Governments (the Denver area metropolitan planning organization), CDOT, Boulder County, the City of Louisville, and the Town of Superior. Tolls are capped at \$14 each direction and must be approved by the Governor-appointed HPTE board. Tolls are collected by express toll transponders and automatic license plate recognition.

An RFP for Phase 1 was issued in 2010. An RFQ on Phase 2 was issued in 2012, and a shortlist of bidders was selected later that year. An RFP was issued late 2012, and a bidder was selected in 2013. Plenary Roads Denver will continue to operate and maintain US 36 for 50 years after the planned full services commencement date (except in the case of contract termination).

Environmental Considerations

NEPA

An ROD was filed for the EIS/Section 4(f) evaluation in 2009 by the US DOT, FHWA, Federal Transit Administration, CDOT, RTD, and U.S. Army Corps of Engineers (USACE) (as a cooperating agency). The initial Final EIS for US 36 did not indicate that the project would be a partially tolled facility. Two additional reevaluations were required, and two additional RODs were filed in 2012 and 2013. Reevaluations required only minor modifications to existing permits.

The 2009 ROD provides a detailed list of impacts, broken down by broad category, in which impacts are broadly characterized according to when they occur, including: access, construction, indirect, operations, permanent, planning, and temporary. Detailed mitigation measures are included for all of these impacts.

Table 2 presents permits identified in the RODs. In the RFPs for both Phase 1 and Phase 2, CDOT assigned responsibility to the development entity for obtaining all governmental and agency permits not otherwise obtained by CDOT.

Table 2. Highlighted Permits Required for US 36 Express Lanes

| Permit/Approval | Permitting Agency |
|---|---|
| Construction dewatering permit | Colorado Division of Public Health and Environment (CDPHE) Water Quality Control Division |
| Air pollutant emission notice and construction permit | CDPHE Air Pollution Control Division |
| Demolition permits | CDPHE and all applicable local jurisdictions |

| Permit/Approval | Permitting Agency |
|--|---|
| Construction noise permit | All applicable local jurisdictions |
| Colorado discharge permit system stormwater construction permit | CDPHE Water Quality Control Division |
| Subterranean groundwater permit | CDPHE Water Quality Control Division |
| Black tailed prairie dog relocation or removal permit | Colorado Parks and Wildlife |
| Prairie dog lethal control permit | City of Boulder or all other applicable local jurisdictions |
| Construction permits | All applicable local jurisdictions |
| Other local permits (stormwater, railroad, building, utility, survey, tree removal, wetland ordinances, work in parks and on trails) | Local agencies or railroad company |
| Letter of approval for impacts to historic resources | State Historic Preservation Officer (SHPO) |
| New development and redevelopment programs for MS4 Phase I and II areas | Follow requirements of local jurisdiction's MS4 permits and CDOT MS4 permit |
| Senate Bill 40 certification (impacts to stream banks, stream channels, riparian areas) | Colorado Parks and Wildlife |
| Construction waste material and transportation of solid wastes | CDPHE Hazardous Materials and Waste Management Division |
| Generation of contaminated materials during construction | CDPHE Hazardous Materials and Waste Management Division |
| Generation of hazardous waste per the Resource Conservation and Recovery Act | CDPHE Hazardous Materials and Waste Management Division |
| Stationary source air quality permit | CDPHE Air Pollution Control Division |
| Section 404 permit amendments | USACE |

Environmental Compliance

Plenary Roads Denver prepared an Environmental Compliance Work Plan (ECWP) that specifically identified all environmental compliance requirements within 60 days of the first notice to proceed. During construction, monthly updates to the work plan were required; during post-construction, annual updates are required. The ECWP included all elements of the construction management plan, a description of the means and methods to meet all the commitments defined in the NEPA documents, a description of the means and methods to meet all requirements defined in the U.S. Fish and Wildlife Service (USFWS) biological opinion, a description of the process used for tracking environmental commitments throughout design and construction, and a description of the process for tracking environmental commitments and compliance throughout the post-construction maintenance periods. The ECWP was required to be updated every month, and it was required to include any pertinent discussions that occurred during the environmental field reviews. The development entity was required to submit the ECWP to CDOT for acceptance on a monthly basis.

Commitments were tracked in the development entity's document control system, along with all correspondence, drawings, progress reports, technical reports, specifications, contract documents, deliverables, calculations, and administrative documents. Plenary Roads Denver was responsible for managing storage and retrieval for both hard copies and electronic records.

In the case of historic and archaeological preservation, permanent impacts were anticipated. CDOT established a US 36 Corridor Section 106 Programmatic Agreement (PA) with the Federal Transit Administration, the Colorado SHPO, CDOT, and RTD to address how Section 106 would be conducted as construction projects are undertaken. A signed PA dated 2009 was included in the ROD. Stipulations included a consultation process, creative mitigation, resolving issues or objections, reporting requirements, amendments, termination, failure to carry out the agreement, duration of agreement, meeting requests, FHWA/Federal Transit Administration coordination, and coordination with NEPA. Creative mitigation included in the agreement included funding a book titled "Digging the Old West: How Dams and Ditches Sculpted an American Landscape" to be distributed to agencies and libraries along the US 36 corridor.

Replicable Successful Practices

Develop a standardized environmental commitments element for D-B and P3 RFP template

Although CDOT had not yet established a standardized RFP template for environmental commitments at the time the US 36 RFP was released, elements of the US 36 RFP were ultimately adapted for use in the RFP template now in use for D-B projects. The main sections of the environmental requirements, as included in the Phase 2 RFP, include:

- Environmental Resources Requirements
 - Air quality
 - Noise
 - Historic resources
 - Paleontology
 - Open space property
 - Vegetation and Senate Bill 40 wildlife certification
 - NEPA reevaluation
- Environmental Permits
 - Colorado Discharge Permit System–Stormwater Construction Permit
 - Wetlands/Waters of the US and Section 404 Permit
 - Wetlands field investigation and identification
 - Wetland mitigation
 - Construction dewatering permit
 - Miscellaneous
- Wildlife
 - Black-tailed prairie dogs
 - Wildlife crossings

- Raptors and migratory birds
- Fisheries and aquatic resources
- Special status and sensitive species
- Recognized Hazardous Materials
 - Materials management plan
 - Health and safety plan
 - Spill prevention control and countermeasures plan
- Project Special Provisions
- Deliverables

Assign the cost of reevaluation to development entities

The RFP specifies that the development entity was responsible for meeting the requirements and conditions of the CDOT reevaluation form, including documenting all changes to the environmental setting, affected environment, and environmental impacts. The development entity was also responsible for updating the Section 4(f) evaluation during the reevaluation process and completing the form and returning the form to CDOT.

Assign bottom-line responsibility for environmental compliance monitoring

The development entity was required to hire a full-time environmental manager for all Phase 2 construction work. The environmental manager was required to lead a field review with HPTE environmental staff to discuss environmental issues every month during active construction periods and had the authority to stop construction if work activities violated environmental laws or policy or jeopardized human health and safety.

Allocation of Responsibility and Risk

The technical requirements of the RFPs for both Phase 1 and 2 allocate responsibility to both the development entity and CDOT. The development entity was delegated responsibility for the majority of environmental factors, including changes to restrictions and permitting. The sole exception to this was for permits obtained by CDOT or the HPTE. CDOT also retained responsibility related to bringing the highway back into an agreed-upon condition after a ‘significant’ natural event.² To manage risk associated with environmental commitments and compliance, the RFPs listed deliverables that the development entity was responsible for submitting for review, approval, and/or acceptance, including the environmental compliance work plan, environmental permits, reevaluation, remediation scope of work, wetland impact delineation, and updates.

² Colorado Department of Transportation. 2014. US 36 Achieving Value for Money Report. March 14, 2014. Available at: <https://www.codot.gov/programs/high-performance-transportation-enterprise-hpte/reports/us-36/2014-03-17-us36-value-report-3-14-hs-edit-1.pdf/view>.

3.2 I-35W MINNESOTA RIVER BRIDGE

Overview

The I-35W Minnesota River Bridge is an important connector between the cities of Burnsville and Bloomington, located in the southern Minneapolis metropolitan area. The existing I-35W Minnesota River Bridge was constructed in 1957. To provide a structurally sound bridge crossing over the Minnesota River within the I-35W corridor, the Minnesota Department of Transportation (MnDOT) issued an RFP in 2018 to replace the existing bridge crossing. The project is supported by MnDOT in partnership with Dakota County, Hennepin County, the City of Burnsville, and the City of Bloomington.

The project requires reconstructing about 2 miles of I-35W adjacent to the Minnesota River Bridge and replacing the I-35W bridge over West 106th Street. Construction activities include the replacement of Bridge 5983 over the Minnesota River, grading and surfacing of I-35W, drainage, retaining wall construction, lighting, signing, and a traffic management system. The limits of the project extend from the I-35W/Cliff Road interchange in Burnsville to north of the I-35W/West 106th Street interchange in Bloomington.

The goals of the project are to provide a structurally sound bridge crossing, minimize traffic during construction, support future traffic capacity, improve safety and traffic operations during the morning peak period, improve non-motorized connectivity across the Minnesota River, and address roadway flood hazard conditions.

The RFP was issued in early 2018. Ames Construction was selected as the best-value proposer out of three bidders in May 2018.

Environmental Considerations

NEPA

An Environmental Assessment was conducted after the release of the RFP. Scheduling was impacted by the completion of ‘Superfund’ environmental cleanup required under the Comprehensive Environmental Response, Compensation, and Liability Act.

The governing environmental documents for this project include:



I-35 W MINNESOTA RIVER BRIDGE

Type: D-B
Location: MN
Project Type: Bridge replacement
Project Cost: \$120 M
Completed: 2021 (expected)

Resources Impacted:

Noise
Section 4(f) Resources
Vegetation
Wildlife
Water Resources, including
Wetlands and Floodplains
Water Quality, including Stormwater
and Erosion Control
Hazardous Materials
Socioeconomics

- Environmental Assessment/Environmental Assessment Worksheet
- Findings of Fact and Conclusion
- Finding of No Significant Impact

Environmental commitments identified in these governing documents were listed in the RFP as the contractor's responsibility to monitor.

Phase I and Phase II Environmental Site Assessments were completed for the project area. The Phase II Environmental Site Assessment investigated areas where soil disturbance was proposed based on the preliminary design drawings. A supplemental Phase II Environmental Site Assessment was completed to further delineate contamination in soil, groundwater, and vapor along the project area.

A technical advisory committee was formed to help guide the alternatives evaluation process, trail connection options, and public outreach, and provide input regarding the overall progress of the Environmental Assessment. Committee members included representatives from the City of Burnsville, City of Bloomington, Dakota County, MnDOT, and FHWA. The technical advisory committee met three times in spring and summer of 2015. A visual quality advisory committee was established, which included representatives from MnDOT, the City of Bloomington, and the City of Burnsville and members of the public. The purpose of the visual quality advisory committee was to help the MnDOT visual quality manager and project design team articulate project and community values and to ensure that the mission, goals, and visual quality objectives of this project were achieved.

Environmental Compliance

Environmental commitments were provided in two exhibits from the RFP: governing environmental documents and summary of environmental commitments. The RFP required monthly environmental monitoring reports to the MnDOT ECM and to the contractor's staff that include the previous month's weekly report forms, lessons learned, proposed actions to communicate lessons learned, and areas needing improvement.

Detailed avoidance and minimization measure were identified in the RFP as part of the contractor's responsibility for hazardous materials, water resources, land use management, erosion, water quality, and noise. The contractor was required to prepare the following reports and plans listed in the RFP:

- Contaminated Materials Management Plan
- Spill Containment Plan
- Asbestos-Containing Materials and Regulated Material Removal Report
- Schedule of Activities for Environmental Mitigation
- Monthly Environmental Monitoring Reports
- Environmental Management Plan

MnDOT secured all permits prior to notice to proceed. Per the RFP, the contractor was required to obtain any others not included in the contract documents or those modified as a result of the work or changes during construction. The contractor was required to provide MnDOT with electronic versions and hard copies of all permit applications, drawings, correspondence, and Environmental Management Plan (EMP) for review prior to submittal for review by the permitting agency.

The project would not result in impacts on any cultural resources. MnDOT's Cultural Resources Unit issued a finding of no historic properties affected by the project. A Nine Mile Creek Watershed District erosion control permit, USACE Section 408 permit, and City of Burnsville conditional use permit are required for the project. The Minnesota Pollution Control Agency (MPCA) dredged materials management permit was required for on-land management of material that is excavated at or below the ordinary high water mark of waterways, watercourses, public waters, or public water wetlands. The D-B contractor was responsible for submitting all required information and obtaining the dredged materials management permit from the MPCA for the identified bridge type.

Environmental Compliance

The contractor was required to prepare an EMP to provide direction for environmental monitoring and inspections. MnDOT uses the EMP to track NEPA environmental commitments, Minnesota Environmental Policy Act environmental commitments, environmental permit requirements, and related public commitments made during the course of project delivery. The EMP is flexible and can adapt to different project scopes; from smaller projects with limited environmental effects to large and complex projects that require extensive tracking and reporting. Currently, the EMP applies only to the state highway construction program and does not apply to state aid projects. MnDOT uses the EMP for project scoping, design, and construction. The objective of the EMP is to ensure that environmental commitments are carried into final design, to help contractors comply with construction components, and to track and document compliance.

Beginning December 1, 2018, a project-specific EMP is required for all MnDOT projects with a NEPA Environmental Assessment, EIS, or Minnesota Environmental Policy Act Environmental Assessment Worksheet, including design-bid-build, D-B, and construction manager general contractor procured projects.

The EMP consists of three products:

- ***Tracking Spreadsheet (Design Green Sheet)***. During project development, the project manager updates the design green sheet template with specific requirements for the contractor to meet environmental commitments. The design green sheet spreadsheet is a live document that gets updated as the project develops.
- ***Tracking Spreadsheet (Construction Green Sheet)***. During construction, the project engineer initials and dates the green sheet as each commitment is met (or, why a

commitment was changed/unmet). Some commitments may be the sole responsibility of MnDOT, not the contractor. These are still included in the construction green sheet to give MnDOT a single location for storing and tracking commitments.

- **Reference Information Document.** Used to outline commitments in the plans, specifications, and estimates package and track commitments during construction.

The environmental team's qualifications and responsibilities, environmental protection training program, and plan for certain resources was required prior to the second notice to proceed. During construction, the contractor was required to provide weekly and monthly environmental monitoring reports. Prior to final acceptance, the contractor was required to provide a summary of compliance with environmental commitments, a summary of environmental monitoring for environmental commitments, and all weekly and monthly environmental monitoring reports.

In addition to these requirements, MnDOT has a verification team to confirm that commitments have been completed prior to project close-out.

Replicable Successful Practices

Establish interagency communication protocol for implementation of alternative delivery projects

MnDOT has MOUs with several agencies and has created external coordination protocols for the following.

Federal Agencies

- FHWA
- Council on Environmental Quality
- U.S. Environmental Protection Agency (EPA)
- National Park Service
- USACE
- U.S. Coast Guard
- USFWS

Tribal Governments

- Minnesota tribes and transportation

State Agencies

- Department of Agriculture
- Department of Health
- Environmental Quality Board
- Department of Natural Resources
- Pollution Control Agency

Local Agencies

- Area transportation partnerships, metropolitan planning organizations, and regional development commissions

- Cost participation policy and guidance
- Counties and townships
- Metropolitan council
- Metropolitan transit
- Municipalities

Each guidance sheet for these parties includes contact information, authority, agency roles, areas of concern, agreements if applicable, and procedures/requirement. Project interactions vary on a case-by-case basis. For this project, MnDOT entered into an MOU with MPCA that describes the process for obtaining the National Pollutant Discharge Elimination System (NPDES) permit coverage on the D-B project.

Assign bottom-line responsibility for environmental compliance monitoring

The RFP requires the D-B contractor to designate an environmental team led by the contract environmental compliance Officer to communicate directly with the MnDOT Environmental Compliance Manager (ECM). The environmental team includes, at minimum, those persons responsible for permitting, ensuring environmental commitments are met, conducting environmental protection training, monitoring and tracking environmental compliance, implementing and maintaining erosion and sediment control, monitoring impacts to cultural resources, and properly managing contaminated and regulated materials.

All communications with the environmental regulatory agencies (e.g., MPCA, Minnesota Department of Health, DNR, EPA, USACE, watershed districts, and watershed management organizations) and Minnesota Historic Preservation Office will be conducted by MnDOT ECM. The MnDOT ECM is the first point of contact for all environmental issues. MnDOT provided an environmental notification contact list that includes all contact persons and reporting and notification requirements for unforeseen potential environmental impacts encountered during the course of the Project. The MnDOT ECM will make all appropriate environmental notifications.

The D-B contractor environmental team is required to design and implement an environmental protection training program for all contractor employees and subcontractors working on the project. This includes the contractor providing a permitting specialist, Stormwater Pollution Prevention Plan (SWPPP)-certified designer and wetland specialist.

MnDOT requires D-B RFPs must include an EMP, in addition to the environmental compliance quality management plan. As mentioned previously, it is the responsibility of the contractor to use the MnDOT environmental commitment tracking documents to ensure environmental compliance throughout the phases of the project. Section 4 of the RFP titled *Environmental Compliance* described the environmental compliance requirements for permitting, erosion and sediment control, cultural resources, floodplains, contaminated materials, regulated materials, groundwater, noise, air quality, water quality and quantity, waters and wetlands, and wildlife. The environmental team is led by a contractor-provided compliance officer and MnDOT required a monthly environmental compliance report. The contractor was required to provide a

quality control program delivery for permit and contract compliance to all permits and regulations.

Allocation of Responsibility and Risk

The technical requirements of the RFP, Section 4, allocate responsibilities to both the contractor and to MnDOT, with specific details on the contractor’s responsibility to permitting and environmental compliance monitoring and tracking. The contractor was responsible for permitting modifications. Section 4 of the RFP also clearly placed the responsibility of environmental compliance on the development entity including, documentation, monitoring, and deliverables. The majority of the responsibility associated with compliance with environmental commitments was placed on the contractor.

For Superfund cleanup activities, the contractor was responsible for excavation, hauling, stockpiling, handling, testing, treatment, and disposal of known contaminated materials, asbestos, and regulated waste, and these activities were not eligible for extension of any completion deadline. MnDOT was responsible for sampling and analysis of unknown contaminated materials encountered during construction activities.

Table 3 includes the known environmental and water resources regulatory obligations identified in the RFP along with the responsible party.

Table 3. Environmental and Water Resource Regulatory Obligations

| Government Agency | Obligation | Responsible Party and Status |
|---|--|--|
| <i>Local</i> | | |
| Nine Mile Creek Watershed District | Watershed District Permit Erosion/Sediment Control | MnDOT to prepare and acquire. Contractor to resubmit and acquire if modifications are required. |
| Lower Minnesota River Watershed Management Organization | Watershed Review | MnDOT to complete. |
| Metropolitan Council | Special Discharge permit (if necessary) | Contractor to prepare and acquire. |
| Hennepin County | No Wake Zone | Contractor to prepare and acquire. |
| City of Burnsville | Conditional Use Permit | Contractor to prepare and acquire. |
| <i>State</i> | | |
| Minnesota Department of Natural Resources | Water Appropriation Permit | Contractor to prepare and acquire, if permit is needed. |
| | Public Waters Work Permit | MnDOT to prepare and acquire. Contractor to resubmit and acquire if modifications are required. |

| Government Agency | Obligation | Responsible Party and Status |
|------------------------------------|--|---|
| | Landowner Statement and Contractor Responsibility for Work in Wetlands or Public Waters | Contractor to prepare and submit. |
| | Endangered Species Permit (state-listed mussels in Minnesota River) | MnDOT to prepare and acquire. Contractor to resubmit and acquire if modifications are required. |
| | Utility Crossing license for the Minnesota River | Contractor to prepare and submit. |
| Minnesota Pollution Control Agency | NPDES Preliminary SWPPP | MnDOT acquired. Contractor to update and resubmit if modifications are required. |
| | NPDES: Permit for Construction Activity (MN R100001) and SWPPP for each construction phase | Contractor to prepare and acquire. MnDOT to provide the MPCA review letter. |
| | Notice of Termination of General Stormwater NPDES Permit for Construction Activity | Contractor to prepare and submit when construction is complete. |
| | Dredged Material Management Permit (if necessary) | Contractor to prepare and acquire. |
| | Discharge of contaminated groundwater to surface water (if necessary) | Contractor to prepare and acquire. |
| | Noise Standards Exemption (if necessary) | Contractor to prepare and acquire. |
| | Section 401 Water Quality Certification | MnDOT to prepare and acquire. Contractor to resubmit and acquire if modifications are required. |
| Minnesota SHPO | Section 106 Consultation | MnDOT completed. |
| Minnesota Department of Health | Watermain modification permit | Contractor to prepare and submit. |
| MnDOT | Wetland Conservation Act (Boundary Approval/Replacement Plan) | MnDOT to prepare and acquire. Contractor to resubmit and acquire if modifications are required. |
| <i>Federal</i> | | |
| USACE | Section 10 Permit (Rivers and Harbors Act) | MnDOT to prepare and acquire. Contractor to resubmit and acquire if modifications are required. |
| | Section 404 Permit (Clean Water Act) | MnDOT to prepare and acquire. Contractor to resubmit and acquire if modifications are required. |
| U.S. Coast Guard | Section 9 Permit (Rivers and Harbor Act) | MnDOT to prepare and acquire. Contractor to |

| Government Agency | Obligation | Responsible Party and Status |
|--|--|---|
| | | resubmit and acquire if modifications are required. |
| MnDOT Office of Environmental Stewardship on behalf of USFWS | Section 7 determination (Endangered Species Act) | MnDOT completed. |

In the contractor’s proposal, the contractor identified several risks that were eliminated by changing the alignment proposed in the RFP. The risks addressed included possible risks in design, such as the need for non-standard retaining walls and geotechnical corrections. The contractor also recommended steps that mitigated environmental risk by reducing impacts to wetlands and impacts to culturally sensitive areas. In MnDOT’s scoring of the contractor’s bid, MnDOT awarded Ames a ‘Very Good’ rating on environmental management for these elements.

To manage risk associated with environmental commitments and compliance, the RFP included a list of deliverables that the contractor would be responsible for providing prior to construction. Deliverables included a list of the contractor’s environmental team qualifications and responsibilities, the contractor’s environmental protection training program and training schedule, completed additional permit applications and permits as issued, resource management plans, schedule of anticipated environmental mitigation, the Environmental Management Plan, environmental notification contact list, and the contractor’s health and safety plan for work with contaminated materials.

3.3 MONTANA REST AREA REPLACEMENT


Overview

The Montana Department of Transportation (MDT) developed a comprehensive Rest Area Plan in 2014 to address critical rest area needs. The plan represents an update of the state's Rest Area Program, which began in the 1930s. MDT has transitioned away from developing rest area projects under design-bid-build and instead uses a two-phase D-B process. During Phase I, MDT selects a consulting firm to evaluate a proposed site, evaluating water, wastewater, right-of-way, and environmental constraints, and preliminary identification of the rest area footprint and orientation on the site. This consultant is also responsible for preparing NEPA and Montana Environmental Policy Act documentation, obtaining conditional permitting for the wastewater system and subdivision through Montana's Department of Environmental Quality (DEQ). The consultant also secures final permitting for the water supply. If rehabilitation/reconstruction can be accomplished on the existing site, Phase II of the D-B process is initiated. MDT selects a team that usually includes an architect, engineer, and contractor. This team finalizes design and construction plans for the water and wastewater systems conditionally approved by Montana DEQ during Phase I. This team is responsible for all construction-related permitting.

Projects completed using D-B under this program are limited to minor impacts. However, MDT selects contractors using a best-value scoring system. It considers innovation in its selection process when reviewing technical proposals, including innovations that reduce environmental impacts during construction.

Environmental Considerations

A review of several Phase I resource assessments shows that, in general, projects are filed as categorical exclusions. Of the 70 state-maintained rest areas listed in the Rest Area Plan update, only four were 50 or more years of age, and there was no evidence that these rest area structures were considered historic. Contractors are directed to use best management practices to limit ground disturbance and minimize vegetation removal. Preserving vegetation helps to prevent erosion and preserve habitat for migratory birds. Contractors also must comply with specifications included in individual permits.



MONTANA REST AREA REPLACEMENT

Type: D-B

Location: MT (statewide)

Project Type: Rest Area Replacements

Project Cost: varies

Completed: ongoing

Resources Covered By Technical Provisions in the RFP:

*Wildlife
Water Quality, including Stormwater
and Erosion Control*

Most of the state-maintained rest areas serve at least 25 people per day for at least 60 days out of the year and are classified as public water and wastewater systems. All new public water systems or improvements to existing public water systems must conform to the Montana DEQ water system design standards.

Many of the existing rest areas sites do not have recorded water rights through the Montana Department of Natural Resources and Conservation or water rights that reflect the well pumping at the time of the original well development. Individual exempt wells cannot pump more than 35 gallons per minute and 10 acre-feet per year, as specified by the Montana Department of Natural Resources and Conservation. Because modifying water rights is typically a lengthy process and requires substantial additional analysis, MDT generally prefers to consider water conservation measures or using other existing water rights in lieu of pursuing new water rights.

During Phase I, the selected consulting firm is responsible for obtaining conditional permitting for the wastewater system and subdivision through Montana DEQ. The Phase II team is responsible for all construction-related permitting.

Replicable Successful Practices

Establish interagency communication protocol for implementation of alternative delivery projects

The MDT Statewide Rest Area Prioritization Plan was supported by a committee that included representatives from rail, transit and planning, maintenance, highways and engineering, FHWA, and Montana DEQ. The committee meets regularly, and is charged with research, funding recommendations, data management, technology, plan updates, facilities information updates, environmental evaluations, mapping, preparing future projects, monitoring current projects, and assessing past projects. The committee is supported by a committee chair, who facilitates committee participation, engages stakeholders, and is responsible for overseeing decision-making. The rest area coordinator is responsible for coordinating an annual review including input from the Statewide Rest Area Prioritization Plan committee and district administrators.

Develop a standardized environmental commitments element for D-B and P3 RFP template

RFPs for the Montana Rest Area Replacement projects are developed using a standard template with eight parts:

- I. Introduction
- II. Schedule of Events
- III. Threshold Requirements
- IV. Disadvantaged Business Enterprise Program
- V. Project Requirements and Provision for Work
- VI. Design and Construction Criteria Package

VII. Technical Proposal Requirements

VIII. Bid Price Proposal Requirements

Environmental considerations are included in Section VI, Design and Construction Criteria Package. For projects with substantial environmental impacts, the section includes a requirement for an environmental manager.

Assign the cost of reevaluation to contractors

If the scope of work deviates from the assumptions used for the environmental review document developed during Phase I, the contracting firm is responsible for reevaluation under NEPA and the Montana Environmental Policy Act and submitting a draft amended environmental review document.

Assign bottom-line responsibility for environmental compliance monitoring

Although the majority of the rest stop replacements are processed as categorical exclusions, when environmental commitments are substantive, MDT specifies a requirement for an environmental manager in the RFP. However, this is the exception rather than the rule due to the limited environmental impacts associated with these projects.

Allocation of Responsibility of Risk

The project requirements and provision for work and technical provisions in the RFP clearly delineate responsibilities between the contractor and MDT. Contractors are responsible for preparing applications for all environmental permits required for the project, although permits may be held jointly by MDT and the contractor. Wastewater permits are preliminarily approved by Montana DEQ at the time of the RFP, but any changes to the preliminary approvals are the responsibility of the contractor. The contractor is also responsible for coordinating any utility relocations or adjustments, and for all work to accommodate all utilities within the limits of construction. MDT retains responsibility for completing asbestos investigations.

The contractor is responsible for a staffing plan that clearly illustrates the key elements of the organizational structure to accomplish the project, including environmental coordination and compliance. The contractor also is responsible for monitoring environmental commitments and preparing paperwork related to National Emission Standards for Hazardous Air Pollutants demolition/notification prior to removing or demolishing the structures.

MDT manages risk by requiring contractors to submit a quality management plan, schedule, staffing plan and coordination of project activities, and project understanding and approach. Contractors are evaluated and given credit for designs that minimize impacts.

3.4 I-85 WIDENING

Overview

ITIP Project I-2304AC is the reconstruction and widening of I-85 to an 8-lane facility over the Yadkin River in Rowan and Davidson Counties. The route provides an important connection between the City of Charlotte and City of Greensboro, North Carolina.

The purpose of the project was to address structural deficiencies of the bridge, relieve congestion and improve traffic flow along I-85, and improve safety. Two bridges were replaced as part of the project. The 7 miles of reconstruction and widening of I-85 to an 8-lane facility occurred north of SR2120 (Exit 81) in Rowan County to US 29-52-70/I-85 Business (Exit 87) in Davidson County, North Carolina.

The RFP was issued in spring of 2010, with notification of award in April of the same year to Flatiron-Lane, a joint venture.

Environmental Considerations

NEPA

The Environmental Assessment was approved on November 6, 2000. The Finding of No Significant Impact was approved on December 1, 2003. The project environmental consultation (right-of-way and construction phase) was approved on May 15, 2009.

The project required a Memorandum of Agreement (MOA) between North Carolina DOT (NCDOT) and the NC SHPO office with regard to the Yadkin River Crossings Historic Districts; the project also required a construction permit from the Federal Energy Regulatory Commission because a portion of the construction would take place within the easement of the Alcoa Power Generating, Inc. property. Coordination was facilitated by the state's merger process, which provides guidelines for interacting with resource agencies at certain intervals in project development.

NCDOT obtained the environmental permits required by the project, including Sections 404 and 401 and a construction permit for work within Alcoa Power Generating, Inc. property or hydroplant boundaries.



I-85 WIDENING

Type: D-B
Location: North Carolina
Project Type: Interstate widening and bridge replacement
Project Cost: \$136 M
Completed: 2012

Resources Impacted:

Air Quality
Noise
Cultural Resources (Archaeological and Historic Resources)
Section 4(f) Resources
Water Resources, including Wetlands and Floodplains
Socioeconomics

Environmental Compliance

The RFP included a list of environmental documents for reference that were to be supplied and available to D-B contractors. The RFP specified that the D-B contractor should perform work in compliance with permits and certifications issued by the agencies. Post-construction monitoring proposed in permit applications was designated as NCDOT's responsibility.

NCDOT prepared and provided a restoration plan for swamp hardwoods wetlands (July 12, 2004), which was developed to accommodate the right-of-way plans. The D-B team was required to create mitigation where embankment adjacent to wetlands was removed along the existing I-85 Yadkin River crossing's southern approach.

The project required the acquisition and subsequent relocation of 24 residences and 4 businesses. The total anticipated wetland impacts were 3.62 acres, and the total length of streams impacted for the I-85 widening study was approximately 3,000 feet. The surface water impacted for the bridge replacement on SR 1147 over South Potts Creek was approximately 120 feet.

Replicable Successful Practices

Establish interagency communication protocol for implementation of alternative delivery projects

The project had an MOA among the FHWA, NCDOT, and the North Carolina SHPO. FHWA determined that the widening and improvements to a section of I-85 will have an adverse effect up on the Yadkin River Crossings Historic District, a property determined eligible for the National Register of Historic Places and that includes Fort York, Rowan County Bridges 46 and 392, North Carolina Railroad Bridges 1 and 2, Beard's Bridge, Big Island, and the Trading Path Road Trace. Stipulations from the MOA included:

- Photo-documentation of bridges
- Finding a new owner for the Wil-Cox Bridge for financial and legal responsibility. If the bridge is removed NCDOT was required to provide a sidewalk for pedestrian crossing.
- Prior to D-B RFP, NCDOT had to provide the North Carolina SHPO with an opportunity to review and comment on the specifications
- SHPO review of waste and borrow areas
- NCDOT was not allowed to have staging areas for construction within the boundary of the Yadkin River Crossing Historic District
- Provision of a Heritage Kiosk

Allocation of Responsibility and Risk

The contractor was responsible for all permit modifications required by wetland impacts. Coordination with the environmental agencies, obtaining approvals from the environmental agencies, public involvement, utility relocation/coordination, and permit modifications were the sole responsibility of the contractor.

NCDOT managed risk by requiring certain documents from the contractor and by providing oversight. The RFP cautioned that agents of the permitting authority would periodically inspect the project for adherence to permits. NCDOT required the contractor to provide a design of the wetland mitigation area to NCDOT for review and approval. NCDOT also stated that agency staff will be responsible for post-construction monitoring. However, no other warranty besides a 12-month guarantee applied to the project.

The contractor was evaluated based on its approach to addressing environmental concerns within the project boundaries; efforts to minimize impacts on wetlands, streams, riparian buffers, and other environmentally sensitive areas; description of temporary impacts and associated minimization approaches; permit modifications; understanding of the overall approach to permitting, methods of construction in wetlands, streams, and buffers; notice of violations or immediate corrective actions received in the last 5 years; approach to sedimentation and erosion control; and approach to and plan for onsite mitigation.

NCDOT's position was to not honor any requests for additional contract time or compensation for any efforts required to obtain any permit modifications. In addition, any environmental fines would be deducted from monies due the contractor.

3.5 EXIT 131 RECONSTRUCTION

Overview

This D-B project was for the Route 17 at Route 32 (Exit 131) Reconstruction project. The project is located in the Villages of Woodbury and Harriman and Towns of Monroe and Woodbury, Orange County, New York. The project's objective was to provide better access to the Woodbury Commons Premium Outlets, replace the Route 32 over Route 17 bridge, expand the park and ride facility for improved multi-modal access, reconfigure Exit 131, install a new interconnected and adaptive traffic signal system, install intelligent transportation systems, and address drainage and stormwater management along Routes 17 and 32.

The RFP for Route 17 at Route 32 (Exit 131) Reconstruction project was issued in 2017, with work completing in 2018. Yonkers Contracting Company, Inc. with HNTB New York Engineering and Architecture, P.C. completed the work using an alternative technical concept (ATC). The New York State Department of Transportation (NYSDOT) requires that any ATC that deviates from requirements set forth in the RFP be equal to or better than the project as-proposed. In this case, although a traditional interchange was proposed, the best value solution was a diverging diamond interchange. One of the features of this solution was a reduced environmental impact due to a smaller footprint, in addition to safer left turn movements with no opposing traffic and improved operational performance.

Environmental Considerations

NEPA

NYSDOT determined that the project could be completed as a categorical exclusion, and also required no further action under the New York State Environmental Quality Review Act.

Because more than 3 years passed from the NEPA determination, the reevaluation (November 1, 2016) examined the changes in environmental regulations and their potential impact on the project. For example, USFWS had listed the northern long eared bat as a threatened species, so the reevaluation determined whether or not the conclusions of the design approval document remained valid. The reevaluation included an amended biological evaluation that concluded improvements would not be substantially different. Documentation indicated no impacts on any cultural resources.

NYSDOT did not secure any environmental permits prior to the project.



EXIT 131 RECONSTRUCTION

Type: D-B

Location: Woodbury, NY

Project Type: Interchange
Reconstruction

Project Cost: \$135 M

Completed: 2018

Resources Impacted:

Air Quality

Noise

*Water Resources, including wetlands
and floodplains*

Environmental Compliance

The contractor was required to ensure that environmental requirements were complied with throughout the duration of the project. The contractor was responsible for preparing its design, obtaining environmental approvals, carrying out construction activities, performing quality control, and undertaking other activities (including hazardous materials inspection and testing) as needed to ensure compliance with the project's environmental requirements and all applicable environmental laws and regulations.

General environmental commitments identified in the RFP included requirements that the contractor retain responsibility for preparing all permit application materials and obtaining all environmental approvals necessary for the project. The contractor was solely responsible for compliance with and violations of any environmental requirements.

NYSDOT maintained a quality assurance team that performed quality assurance on the contractor's quality control process. In some cases, although this oversight may result in a double inspection, the process has helped the department avoid having any citations or negative assessments by regulatory agencies.

Replicable Successful Practices

Develop a standardized environmental commitments element for D-B and P3 RFP template

NYSDOT uses templates to support the D-B process. Environmental requirements are included in Part 3–Project Requirements of the RFP, under Section 3 (*Environmental*). General environmental requirements include the following:

- The contractor must procure all environmental approvals as needed.
- The contractor is responsible for preparing all permit application materials and obtaining all environmental approvals necessary.
- The contractor is responsible for any fines, non-compliance, violations, or damages incurred caused by the contractor's failure to comply with environmental approvals.
- The contractor must provide a copy of all environmental permit applications and secured approvals.
- The contractor must confirm the wetland boundaries and refresh a wetland delineation report.
- For permits administered by USACE, the contractor is required to coordinate through NYSDOT, allowing sufficient time for all coordination, review, and authorization.
- The contractor must adhere to requirements for wetland mitigation sites, compensatory mitigation, impacts to streams, and noise.

Each template is customized for each project. In general, the state estimates that the design process will be complete approximately 2 weeks before the RFP is released. Prior to the shortlisted team of the final RFP, NYSDOT will have received the decision of record, at which point the state will customize, modify, and finalize the RFP to ensure that it is compliant with the terms and conditions of the environmental approval.

Assign the cost of reevaluation to contractors

The reevaluation was included as a requirement of the contractor in the RFP. The RFP stated if, during detailed design and/or construction, the contractor introduces design elements, variations, or methodologies that potentially induce environmental impacts not covered under the obtained approvals/permits by NYSDOT, then the contractor was responsible for reevaluating the NEPA process for this project and obtaining the necessary environmental approvals/permits for the project prior to proceeding with construction. This requirement also applies to proposed variations that may affect resources covered under Section 106, Section 4(f), Executive Order 11990 (wetlands), and other applicable federal and state environmental regulations.

Allocation of Responsibility and Risk

The RFP provided compliance requirements for the contractor. Except where otherwise stated, the RFP specified that the contractor would be responsible for preparing all design, obtaining environmental approvals, carrying out construction activities, performing quality control, conducting hazardous materials inspection and testing, and all other activities to ensure compliance with the project's environmental requirements and all applicable environmental laws and regulations. Each impacted resource category is included in the environmental plans section of the RFP, providing the contractor with responsibilities of and requirements for environmental compliance.

NYSDOT allows contractors to propose an ATC to allow innovation and flexibility. ATCs may be incorporated into the proposal, and NYSDOT considers the ATC while making the selection decision. The process has been developed to prevent delays and potential conflicts in the design associated with deferring of technical concept reviews to the post-award period and, ultimately, to obtain the best value for the public. The contractor had to provide an explanation of potential impacts of the ATC on the environment (favorable and unfavorable) identified in appropriate environmental documents.

However, at the time of the release of the RFP, NYSDOT had not secured any of the permits or secured any environmental approvals. NYSDOT deferred responsibility to the contractor to secure all environmental permits associated with and required for construction of the project and did not secure any of the environmental permits. The RFP also specified that the contractor would be responsible for reevaluating the NEPA process and obtaining all necessary environmental approvals/permits for the project.

NYSDOT managed risk by evaluating proposers based on qualifications of key personnel, project understanding (including environmental issues associated with the project), identification of impacts to the environment under the proposed construction approach, whether construction methods eliminated the need for permits, and environmental considerations in the design narrative.

3.6 RAPID BRIDGE REPLACEMENT

Overview

The Rapid Bridge Replacement Program (the program) was undertaken by the Pennsylvania Department of Transportation (PennDOT) and Plenary Walsh Keystone Partners (development entity) through a P3. The program resulted in the replacement of 558 geographically dispersed, structurally deficient, bridges across the Commonwealth in less than 5 years.

Although the vast majority of the funding identified for the program was through the state, the program was federalized to allow PennDOT to have the option of using federal monies to supplement state funds for future availability payments. PennDOT also applied for private activity bonds for the project.³

Each of the eligible bridges needed total replacement, was not already under design contract, and did not have significant constructability concerns that could jeopardize the project schedule. These bridges generally consisted of single- and double-span bridges with span lengths typically between 40 and 75 feet. The intent of the program was to replace all bridges in kind. The majority of the bridges are on the state highway system.

PennDOT identified a subset of 89 of the eligible bridges that the development entity was required to replace in 2015 (the early completion bridges).

The development entity financed, designed, and constructed and will be maintaining the bridges for a 25-year period beyond completion. PennDOT maintains ownership of the replacement bridges and is responsible for routine maintenance such as snow plowing, debris removal, and incident first response. The development entity will be reimbursed through an availability payment structure over an anticipated term of between 25 and 35 years.



RAPID BRIDGE REPLACEMENT

Type: P3
Location: PA (statewide)
Project Type: Bridge replacements
Project Cost: \$899 M
Completed: 2019 (expected)

Resources Covered By Technical Provisions in the RFP:

Air Quality
Noise
Cultural Resources (archaeological and historic resources)
Trails, Parks and Recreation
Section 4(f) Resources
Vegetation
Protected Species
Visual Resources
Water Resources, including Wetlands and Floodplains
Water Quality, including Stormwater and Erosion Control
Hazardous Materials
Socioeconomics

³ Private activity bonds are debt instruments authorized by the U.S. Secretary of Transportation and issued by a conduit issuer on behalf of a private entity for highway and freight transfer projects, allowing a private project sponsor to benefit from the lower financing costs of tax-exempt municipal bonds.

The program was envisioned as a P3 to address the high priority of remediating structurally deficient bridges in Pennsylvania. The selection followed a two-step process: (1) RFQ, which yielded a short list of eligible proposers; and (2) RFP issued to the shortlisted firms. The contract was selected on best value, based on a combination of price and technical approach. The RFQ was issued in December 2013. Between April and June 2014, four drafts of the RFP were issued for industry review and comment. The draft final RFP was issued in July 2014, and the last issuance of the final RFP occurred on August 12, 2014.

The development entity entered into a Public-Private Transportation Partnership Agreement (PPA) with PennDOT. The RFP included a technical provisions volume that detailed the PennDOT and development entity responsibilities related to environmental commitments and compliance, and these provisions were incorporated into the PPA.

This program was initiated to replace 558 aging bridges through a P3 between PennDOT and the development entity. Technical provisions in the RFP required the contractor to develop a comprehensive environmental protection plan, along with weekly environmental monitoring reports. PennDOT engaged a consultant to serve as the ECM to perform all environmental compliance and oversight for each bridge project.

Environmental Considerations

Bridge Eligibility

More than 2,000 structurally deficient bridges were screened for program eligibility. Screening considerations included: age, spans, length, lanes, average daily traffic, railroad crossings, water crossings, bridge sufficiency rating, and environmental impacts. Eligible bridges were further prioritized based on the following considerations: minimal changes to existing alignment; maintain existing profile; standardized structures; bundled implementation⁴; and limited impacts to utilities, waterway, environmental resources, railroad, traffic, and right-of-way. Environmental considerations included cultural resources, storage tanks, state parks and trails, trout streams, 100-year floodplains, and protected lands. For example, historic bridges that were individually eligible for the National Register of Historic Places and would require consideration of rehabilitation rather than replacement were not eligible for the program. With regard to environmental impacts, eligible bridges included those that could be processed under a categorical exclusion.

Resource Agencies

The RFP listed the following resource agencies as stakeholders:

- Pennsylvania Department of Conservation & Natural Resources
- Pennsylvania Department of Environmental Protection (PADEP)

⁴ Related to bundling permit packages for the USACE/DEP joint waters of the U.S. permit applications.

- Pennsylvania Historic and Museum Commission, which includes the SHPO
- Pennsylvania Fish & Boat Commission
- Pennsylvania Game Commission
- FHWA
- USACE
- EPA
- U.S. Fish & Wildlife Service
- Pennsylvania Association of Conservation Districts

PennDOT planned to apply a pre-existing statewide PA with the SHPO to the bridge replacement program and developed a letter of agreement (LOA) with the SHPO to clarify how its statewide PA would be applied to bridges replaced under the state's Rapid Bridge Replacement Program. The LOA included provisions to extend the credentialed cultural resources staff requirements to the staff employed by the development entity. For the program, the development entity and PennDOT coordinated with the SHPO and required the contractors to employ cultural resources staff with equivalent qualifications and training. The LOA also included aesthetic standards for bridges in historic districts. These standards were included in the RFP's technical provisions.

Most of the individual bridge replacement projects could be addressed under the State Programmatic General Permit (PASPGP) that delegated permitting authority to the State Environmental Protection Agency, which reduced the level of agency coordination for the projects. The PASPGP, as amended, authorizes the discharge of dredged, excavated, or fill material or structures into waters of the United States and waters of the Commonwealth, including wetlands. PennDOT used the PASPGP joint agency guidance between PADEP and USACE to provide the USACE 404 clearance and PADEP 105/106 clearance in one permit process for projects that meet PASPGP conditions.

NEPA

Prior to issuance of the RFQ, a limited number of the replacement bridges have made progress towards receiving environmental and permitting approvals. PennDOT took responsibility for all environmental documentation (including clearances) required for the program in accordance with NEPA. To facilitate the replacement of the early completion bridges in 2015, PennDOT took responsibility for sufficiently advancing permits required by PADEP for those bridges up until financial close, whereupon the development entity would take over responsibility for continuing to advance and obtain all relevant regulatory, environment, and building permits to design, build, finance, and maintain the projects with the development entity's scope of work.

The development entity's responsibilities included compliance with all NEPA commitments for mitigation and monitoring, as set forth in any NEPA documents. Except as otherwise required by law, PennDOT was the permittee and supported the development entity in coordination with environmental regulatory and permitting agencies.

As outlined in the RFP, alternative technical concepts were required to include a discussion and preliminary analysis of potential impacts, including environmental impacts. The program had about 500 reevaluations—documenting the reevaluation for the categorical exclusion through the categorical exclusion expert system is a simple, straightforward process. The technical provisions of the RFP stated that the development entity could not proceed with final design until the NEPA clearance had been achieved.

Environmental Compliance

As part of the project management plan, the technical provisions call for the development entity to develop; implement; manage; and, as required, update a Comprehensive Environmental Protection Plan (CEPP) in accordance with Section 4 (*Environmental*) of the technical provisions.

The technical provisions identified full-time key personnel related to environmental compliance, including a design quality control manager and an ECM. Additionally, the technical provisions required the following environmental resource staff: cultural resources professional, hazardous materials manager, natural resource biologist, and environmental compliance inspector. The technical provisions specify that, under the direction of the ECM, the environmental training staff shall develop, schedule, and conduct environmental awareness and environmental compliance training for the development entity's personnel.

The CEPP, at minimum, must include the following documents at the replacement bridge sites and be made available at any time for PennDOT review:

- CEPP component parts;
- Weekly environmental monitoring reports;
- Investigative work plans, site investigation reports, and remedial action plans as necessary for hazardous material discovery/remediation;
- Wetlands delineations and appropriate Section 404 permit application if changes to the design or temporary construction impacts are necessary;
- Mitigation or resource monitoring reports, as required by resource-specific mitigation plans;
- Designs for wetland and floodplain mitigation;
- PADEP 105 permit and Section 401 water quality certification approvals with date of approval and expiration date, if applicable;
- USACE 404 approval with date of approval; and
- Completed permit applications and permits as issued.

The technical provisions call for an environmental commitment and mitigation tracking system, which must be the overarching system by which the development entity shall ensure environmental commitments are implemented. The environmental commitments will include those made during the environmental approval and permitting processes, and other

environmental requirements to be carried forward and reflected, as appropriate, in the design and implemented throughout the project. The development entity is directed to use the environmental commitment and mitigation tracking system to track ongoing issues and identify environmental compliance, nonconforming work, and actions required/taken to correct any such nonconformance.

When construction is completed, the development entity is responsible for completing the necessary forms and obtaining acknowledgement and/or approvals for all PADEP and USACE permits, including, but not limited to:

- Notice of Construction Completion;
- Notice of Termination; and
- Permit Compliance Self-Certification Form (note that the completed form must be returned to the District Permit Coordinator).

At the conclusion of the term, the development entity will transfer each environmental approval from the development entity name back to PennDOT. The permit/approvals cannot be transferred to PennDOT until the development entity proves that it has documentation that applicable agencies acknowledged/approved the completion of construction and mitigation under the permit and all notices of violations/enforcement actions have been resolved. If transfer fees are required, PennDOT is responsible for associated transfer fees and will either pay for these directly or the development entity will pay the transfer fees and PennDOT will reimburse the development entity for the actual cost.

Replicable Successful Practices

Establish interagency communication protocol for implementation of alternative delivery projects

When PennDOT was developing the scope of work for the program, it identified the need for agency coordination. PennDOT engaged the SHPO during the development of the scope of work and developed an LOA in coordination with the SHPO and FHWA stipulating the use of the statewide PA for the Rapid Bridge Replacement Program. The PA delegates much of the responsibility under Section 106 to pre-qualified individuals who work for PennDOT. This provision was extended to the development entity, which was required to have cultural resources staff, whose qualifications met the Secretary of the Interior's standards. Upon selection, these staff underwent about 160 hours of PennDOT training to ensure the provisions of the PA could be carried out correctly. Additionally, there were provisions for reporting and auditing.

Coordination with USACE also occurred to confirm that the provisions for Section 106 coordination outlined for the program would satisfy USACE's Section 106 compliance requirements for Section 404 permits.

Although bridges that were individually eligible for the National Register of Historic Places were not considered for the program, there were bridges within historic districts that were replaced as

part of the program; however, they were contributing elements to the historic district and not individually eligible. For bridges within historic districts, PennDOT required aesthetic design standards consistent with the PA and consultation with the SHPO that went beyond the aesthetic treatment standards developed for the program.

Use database tools to track environmental commitments

Environmental commitments made through the NEPA process are tracked through the environmental commitment and mitigation tracking system, the online system previously described. In addition to this database tool, ancillary tracking is also used for commitments related to mitigation for cultural resources that are either stipulated by a PA or MOA. These are tracked through Project PATH (Pennsylvania Transportation & Heritage). The technical provisions of the RFP required the development entity to follow PennDOT's existing policy, which requires the project manager to identify the environmental commitments made during the NEPA process (e.g., construction fencing around a wetland boundary, or no instream work during certain times of year) and to sign off when those items were completed. PennDOT hired Gannett Fleming, which was the lead consultant for construction management and compliance, and the team included subject matter experts to monitor compliance with environmental commitments as outlined in the technical provisions.

Assign the cost of reevaluation to contractors

As noted above, PennDOT achieved all of the environmental clearances for the early completion bridges prior to issuing the notice to proceed on design. The technical provisions of the RFP stated that the development entity may modify PennDOT's design of an early completion bridge but shall assume all costs associated with the modified design including costs associated with reevaluations under NEPA, permit modifications, environmental commitments, additional utility relocations, design, construction, and maintenance. The technical provisions outlined that PennDOT's categorical exclusion expert system and joint permit application expert system 2, both online portals, would be used to achieve government approvals.

For the remaining bridges, the development entity had responsibility for preparing NEPA documentation and designing the replacement bridges. PennDOT requested and received a special experimental project designation from FHWA that allowed the development entity to conduct the NEPA evaluations, but PennDOT reviewed and approved all NEPA documents. The replacement bridges were processed as categorical exclusions. The technical provisions outlined that PennDOT's categorical exclusion expert system will be used to process categorical exclusions and reevaluations. Regarding reevaluations under NEPA, if the need for a reevaluation is based on a design change, the technical provisions stated that the development entity was responsible for any associated costs of the reevaluation. For these bridges, the technical provisions state that, for some bridges, the project would require a paper application to USACE rather than use of the Joint Permit Application Expert System 2, to achieve government approvals.

Assign bottom-line responsibility for environmental compliance monitoring

To ensure bottom-line responsibility for environmental compliance monitoring, the development entity was required by the technical provisions of the RFP and PPA to identify the following key personnel: design quality control manager and ECM.

Design Quality Control Manager: The design quality control manager is responsible for management of the quality control program for the design, environmental, right-of-way, utilities, and survey. The technical provisions required that the design quality control manager hold a full-time role during design work and be a professional engineer with at least 15 years of experience and who has had a similar role on at least two D-B projects of similar type, size, and scope.

Environmental Compliance Manager: The ECM shall be responsible for complying with the development entity's obligations regarding environmental compliance and permitting. The technical provisions required a full-time ECM from notice to proceed until substantial project completion, through the construction period, and part-time ECM as required for the remainder of the contract term. The technical provisions also required that the ECM hold at least a bachelor's degree in engineering or an appropriate scientific discipline and a minimum of 15 years of relevant experience, with increasing responsibilities leading to at least one similar role on a project of comparable scope.

As previously noted, PennDOT hired Gannett Fleming, an independent consultant, for construction management and compliance, and the team included subject matter experts to monitor compliance with environmental commitments as outlined in the technical provisions.

Allocation of Responsibility and Risk

The technical provisions of the RFP clearly allocate responsibilities to both the development entity and PennDOT. The majority of the risk has been allocated to the development entity, including modifications to environmental clearance for the early replacement bridges, and achieving and modifying environmental clearance for the remaining bridges. Reevaluations under NEPA and modifications to permits resulting from design changes are the responsibility of the development entity. Additionally, the technical provisions allocate the responsibility for clearing utilities to the development entity.

The technical provisions clearly place the responsibility of environmental compliance on the development entity, including documentation, identification and correction of violations, and permit closeout with USACE and PADEP. Additionally, the development entity is responsible for all fines and penalties that may be assessed by a governmental entity with jurisdiction in connection with the development entity's failure to comply with applicable laws or environmental approvals, including, but not limited to, permit conditions, environmental commitments, and monitoring commitments listed in the CEPP.

Although the majority of the risk associated with compliance with environmental commitments was placed on the development entity, PennDOT actively managed risk on the bridge

replacement program by engaging a consultant to serve as ECM to perform the oversight to confirm environmental compliance for each bridge project. Additionally, technical provisions in the RFP pertain to timeliness of reporting and availability of records for PennDOT review. To manage risks to schedule, PennDOT funds positions at USACE's regulatory branch and PADEP for expedited permit review, which alleviates the potential schedule delays associated with permit modifications. PennDOT also screened the bridges using considerations to allow for streamlined project implementation (i.e., limited environmental impacts, limited utilities impacts, and minimal changes to the existing alignment).

3.7 HARBOR BRIDGE PROJECT

Overview

The Harbor Bridge Project will replace the Harbor Bridge, designed and built in the 1950s, and reconstruct the Interstate Highway 37 (I-37)/Crosstown Expressway intersection; the project is not adding capacity. The Harbor Bridge Project is needed to maintain the long-term operation of the US Highway 181 (US 181) crossing of the Corpus Christi Ship Channel and to improve safety for the traveling public, including during hurricane evacuations. It is located 0.5 mile north of the US 181 and I-37 interchange in Corpus Christi, Texas. US 181 is a six-lane divided highway and is the only continuous state/federal highway facility that provides a direct connection between the Corpus Christi business district to the communities of Portland, Gregory, Ingleside, and Aransas Pass.

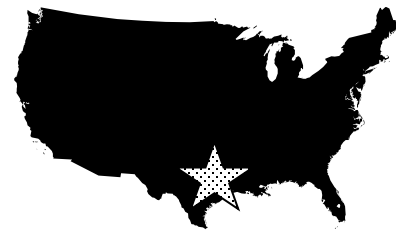
The final RFP was provided to the shortlisted proposers in 2014, and Flatiron/Dragados, LLC was selected. The groundbreaking ceremony and pre-construction began in summer 2016, with bridge construction beginning in summer 2017. Total construction duration is expected to take 5 years.

Texas Department of Transportation (TxDOT) integrated FHWA's Infrastructure Voluntary Evaluation Sustainability Tool (INVEST) program into the bidding process and included that as part of the scoring criteria for developer selection. That program incentivized the bidding team to support TxDOT's efforts to receive platinum status on the INVEST rating of the project for sustainability. Sustainable design elements incorporated into the project included the use of recycled materials, low emission equipment, low maintenance vegetation, xeriscape, emergency generating wind sculptures, solar brick pavers, and low energy utilities.

Environmental Considerations

NEPA

TxDOT and FHWA are providing the transportation infrastructure to support the economic opportunities in the area with consideration of the connectivity of US 181 to the local roadway system and address its effect on adjacent neighborhoods. The Final EIS was completed in November 2014, and the subsequent ROD in January 2016. The following impacts were identified: the acquisition of new right-of-way; residential and commercial displacements;



HARBOR BRIDGE PROJECT

Type: D-B
Location: Corpus Christi, TX
Project Type: Bridge replacement and roadway reconstruction
Project Cost: \$803 M
Completed: 2021 (expected)

Resources Impacted:

Cultural Resources (Archaeological and Historic Resources)
Land Use
Section 4(f) Resources
Wildlife
Water Resources, including Wetlands and Floodplains
Socioeconomics

community impacts, including disproportionately high and adverse impacts to minority and low-income communities; access changes; conversion of existing land use to transportation use; impacts to floodplains, wetlands and other waters of the U.S., public parks and public wildlife refuge lands, historic sites, vegetation, and protected species; hazardous materials; 4(f) impacts; and traffic noise impacts.

The project involves the removal of the Harbor Bridge System—the Harbor Bridge and six other historic highway bridges—an adverse effect to resources eligible for the National Register of Historic Places; therefore, the proposed project would require a Section 4(f) approval by FHWA as well as a Section 404 Individual Permit from the U.S. Army Corps of Engineers and a Bridge Permit from the U.S. Coast Guard. The project resulted in the use of three Section 4(f) properties, including the Harbor Bridge system. Mitigation required replaced of function of T.C. Ayers Park and Lovenskiold Park, and development of bicycle and pedestrian connections between the replacement park and other parks in the project area to benefit the community.

The proposed action required two federal permits prior to construction: a U.S. Department of the Army Individual Permit under Section 404 of the Clean Water Act; and a U.S. Coast Guard Bridge Permit under the General Bridge Act.

Environmental Compliance

Environmental performance specifications are identified in Section 4.0 of the technical provisions of the RFP. Included in this section was a requirement for the contractor to designate a Construction Monitoring Plan to identify times, locations, and other conditions where monitoring of construction activities would be performed to maintain and cause compliance with environmental laws, environmental approvals, and the contract documents.

To track environmental commitments and document compliance, the D-B contractor was required to implement a Project Management Plan and CEPP.

As part of the Project Management Plan, the contractor is required to monitor and comply with the environmental commitments required by the RFP, contract documents, environmental laws, governmental entities, governmental approvals, permits, Final EIS/ROD, environmental permits, issues, and commitment (EPIC) sheets, and all applicable federal and state laws and regulations. The contractor is required to develop, operate, and maintain a CEPP as the overarching program to ensure environmental compliance with all applicable Environmental Laws and Commitments, to avoid and minimize impacts on the environment from the design, construction, maintenance, operation, and rehabilitation activities and to meet all environmental commitments documented in the Environmental Management System (EMS). The CEPP includes requirements to specify organizational details, personnel, subcontractors, develop the Environmental Compliance and Mitigation Plan (ECMP), perform quality control and quality acceptance, audit procedures, and document management.

The ECMP is required to establish and/or document schedules, protocols, and methodologies to be used in accomplishing tasks with an emphasis on monitoring, reporting, corrective actions and

adaptive management. A component in the ECMP includes a Compliance Action Plan with a decision-making matrix which will define the triggers for initiating or re-initiating environmental compliance actions for construction and maintenance activities, this includes construction noise mitigation measures and the triggers for initiating mitigation measures.

The ECMP has the following components: EPIC sheets; Clean Water Act—Sections 402: Texas Pollutant Discharge Elimination System; State Listed Species and Unregulated Habitat; Endangered Species Act and Fish and Wildlife Coordination Act; Marine Mammal Protection Act; Coastal Management Program; Traffic Noise; Well Impacts and Requirements; Cultural Resource Studies; Public Involvement; and standard operating procedures.

The contractor is required to designate an ECM who leads an environmental team, to prevent, minimize, and/or correct any violation of or noncompliance with environmental approvals. The RFP specifies that the environmental team must include key team members, including the environmental training staff, environmental compliance inspectors, archeologist, architectural historian, historian, historical architect, natural resource biologist, water quality specialist, and hazardous materials manager.

In addition to the ECMP, the contractor was responsible for preparing a sustainability plan to support TxDOT's aim of achieving a platinum rating for the project development module (using the urban extended scorecard) and a silver rating for the operations and maintenance module. This plan was required to include the contractor's plan for energy and energy efficiency, community and environmental justice, green building, waste reduction and recycling, green project administration, materials and resources, construction practices, education and demonstration of energy efficiency, and sustainability level. The contractor was also responsible for designating a Sustainability Manager responsible for leading the contractor's efforts in obtaining sustainability certification.

Replicable Successful Practices

Establish interagency communication protocol for implementation of alternative delivery projects

The Harbor Bridge Project will be completed under a four-party agreement between TxDOT, the Port of Corpus Christi Authority of Nueces County, Texas (Port), the City of Corpus Christi, Texas, and the Corpus Christi Housing Authority dated November 25, 2014. The agreement is to ensure affected minority population do not bear disproportionately high and adverse human health or environmental effects from the Project.

Develop database tools to track environmental commitments

Although not a database tool, to track environmental commitments, TxDOT uses environmental permits, issues, & commitments (EPIC) sheets.⁵ EPIC sheets were used on the Harbor Bridge Project. TxDOT defines EPICs as “any permit, issue, coordination commitment, or mitigation obligation necessary to address, offset, or compensate for social, economic, or environmental impacts of a project, including sole source aquifer coordination, wetland permits, stormwater permits, traffic noise abatement, threatened or endangered species coordination, or archeological permits, and any mitigation or other commitment associated with the project.”⁶ These data tracking sheets are intended to provide documentation from project scoping and advance planning, and they may be updated during construction to show environmental issues that may arise due to field changes.

EPIC plan sheets are based on a standard template with eight primary sections, including:

1. Clean Water Act, Section 402, Texas Pollutant Discharge Elimination System
2. Clean Water Act, Section 401 and 404 Compliance
3. Cultural Resources
4. Vegetation Resources
5. Federal Listed, Proposed Threatened, Endangered Species, Critical Habitat, State Listed Species, Candidate Species, and Migratory Bird Treaty Act (MBTA)
6. Hazardous Materials or Contamination Issues
7. Other Environmental Issues
8. Notes and Definitions

The template includes important standards that should be referenced as guidance for certain types of commitments. EPICs are updated during the NEPA process. If action is required for a resource, the actions are then listed for the contractor to follow compliance. The EPIC plans are stamped by a TxDOT registered Professional Engineer and provided to the contractor. The data collected on these sheets have the potential to be incorporated into a database tool for higher tier management of the data.

Require environmental training for all onsite workers and visitors

According to the RFP, the contractor is required to develop and implement an environmental protection training program. The program is required to educate every worker to: recognize the overall importance of environmental issues including: constructing, operating and maintaining a successful project; knowing the limits of regulated jurisdictional areas within and adjacent to

⁵ TxDOT. 2011. Environmental Management System Guidance Document Environmental Permits, Issues, & Commitments (EPIC) Sheet. December 5, 2011. Available at: ftp://ftp.dot.state.tx.us/pub/txdot-info/dal/specinfo/STATE_EPIC.PDF

⁶ TxDOT. 2011.

construction areas; and understanding the various environmental sensitivities of the project. TxDOT assesses liquidated damages for violations.

Assign the cost of reevaluation to contractors

The technical provisions of the RFP require the developer to be responsible for conducting environmental studies and reevaluations caused by actions not identified in the environmental approvals, actions not covered specifically by existing resource agency coordination, or incorporation of additional properties into the project. Developer shall be responsible for all coordination of environmental studies with appropriate governmental entities.

Develop incentives specific to environmental commitments

Harbor Bridge integrated FHWA's Invest program into the bidding process part of the scoring criteria for developer selection. Although the RFP stated that TxDOT would seek a Silver rating on operations and maintenance, the winning proposal by Flatiron/Dragados LLC proposed an approach that would enable the project to receive a Platinum rating, which resulted in a higher score under TxDOT's best value approach.⁷

Allocation of Responsibility and Risk

Reevaluations under NEPA and modifications to permits are also the responsibility of the contractor. The technical provisions clearly place the responsibility of environmental commitment tracking, compliance, and mitigation with the contractor. The contractor's environmental team, led by the ECM, is required to verify all environmental compliance and oversight for the project. TxDOT manages risk associated with environmental compliance through the assessment of noncompliance charges (i.e., liquidated damages) in accordance with the contract documents. These liquidated damages are intended to compensate TxDOT for damages it will incur by reason of contractor's failure to comply with the availability and performance standards.

⁷ See <https://ftp.dot.state.tx.us/pub/txdot-info/spd/cda/us181-harbor/rfp/developer-summaries/flatiron-dragados-summary.pdf>.

3.8 ALASKAN WAY VIADUCT—SR 99 BORED TUNNEL D-B PROJECT

Overview

The Alaskan Way Viaduct is an elevated section of State Route 99 (SR 99) in Seattle, Washington. The project was originally built in the 1950s. Following a 6.8 magnitude earthquake in downtown Seattle, the viaduct sunk several inches. The project was needed because of the viaduct’s age and vulnerability to earthquakes. The project includes a 2-mile-long tunnel beneath downtown Seattle, a 1-mile-long stretch of new highway connecting to the south entrance of the tunnel, a new overpass at the south end of the tunnel to allow traffic over train traffic, demolition of the viaduct’s downtown waterfront section, and a new Alaskan Way surface street to connect SR 99 to downtown Seattle.

Altogether, 32 projects are necessary to fully replace the Alaskan Way Viaduct, all located in King County and the City of Seattle. The SR 99 tunnel will be completed under a D-B contract to Seattle Tunnel Partners, a joint venture of Dragados USA and Tutor Perini Corp. Future projects, including access projects, connections, viaduct removal, and adjoining tunnel removal, will be completed under design-bid-build construction contracts.


Environmental Considerations

NEPA

FHWA, Washington State Department of Transportation (WSDOT), and the City of Seattle released a Draft EIS in 2004, a supplemental Draft EIS in 2006, and another supplemental Draft EIS and draft Section 4(f) in 2010. The Final EIS was released in 2011, and the ROD was issued in 2011.

Interested and cooperating agencies include:

- Confederated Tribes and Bands of the Yakama Nation
- Federal Transit Administration (cooperating)
- Historic Preservation
- King County (cooperating)



ALASKAN WAY VIADUCT

Type: D-B

Location: Seattle, WA

Project Type: Tunnel, elevated viaduct demolition

Project Cost: \$3.3 B

Completed: 2023 (expected)

Resources Impacted:

Air Quality

Noise

Cultural Resources (Archaeological and Historic Resources)

Energy and Greenhouse Gas Emissions

Land Use

Trails, Parks, and Recreation

Section 4(f) Resources

Wildlife

Protected Species

Visual Resources

Water Resources, including Wetlands and Floodplains

Water Quality, including Stormwater and Erosion Control

Hazardous Materials

Socioeconomics

- Muckleshoot Indian Tribe
- National Marine Fisheries Service (NMFS)
- Port of Seattle (cooperating)
- Puget Sound Clean Air Agency
- Puget Sound Regional Council
- Snoqualmie Indian Tribe
- Suquamish Tribe
- The Tulalip Tribes
- USACE (cooperating)
- USFWS
- U.S. Environmental Protection Agency
- Washington Department of Fish and Wildlife
- Washington State Department of Archaeology
- Washington State Department of Ecology
- Washington State Department of Natural Resources

NEPA/State Environmental Policy Act (SEPA) documentation, Section 106 (National Historic Preservation Act), and Section 7 (Endangered Species Act) consultations, and environmental permits for the project were not completed prior to award of the contract. WSDOT used a two-phased notice to proceed to ensure that no commitments were made to any alternative evaluated in the NEPA process.

The D-B contract was awarded following the Supplemental Draft EIS issued in 2010, and it was also understood at the time of the Final EIS writing that the tunnel would be a tolled facility. The work authorized under the first notice to proceed focused on design, investigations, and analysis to support the Final EIS, Section 106 process, Section 4(f) process, Endangered Species Act consultation, and environmental permitting. The Final EIS and ROD were completed following the selection of the D-B contractor and receipt of preliminary design for the project in order to identify whether additional environmental review was necessary.

WSDOT is primarily responsible for obtaining permits (see Table 5), with the exception of three: the Shorelines & Growth Management Act—Critical Areas; Noise Variance/Exemption; and 402 Construction Stormwater General Permit NPDES. The RFP specifies that, in these cases, the D-B contractor would be the permit owner/applicant.

Permits identified at the time of the ROD include the following:

Federal

- NMFS and U.S. Fish and Wildlife Service—Section 7 Endangered Species Act Consultation and Marine Mammal Protection Act Consultation
- NMFS—Magnuson-Stevens Fishery Conservation and Management Act Consultation

- FHWA, in consultation with the Washington Department of Archaeology and Historic Preservation—National Historic Preservation Act, Section 106 Consultation
- U.S. DOT—Section 4(f) Evaluation

State

- Washington State Department of Ecology—Model Toxics Control Act, Removal of Underground Storage Tanks
- Washington State Department of Ecology—National Pollutant Discharge Elimination System (NPDES), Construction Stormwater General Permit
- Washington State Department of Ecology—Coastal Zone Management Act (CZMA), Consistency Certification
- Washington State Department of Ecology—Underground Injection Control Registration
- Washington State Department of Ecology—Notice of Intent for Installing, Modifying, or Removing Piezometers
- Washington State Department of Ecology—Notice of Intent for Installing, Modifying, or Removing Wells
- Washington State Department of Ecology—Chemical Treatment Letter of Approval

Local

- King County—Industrial Waste Program Wastewater Discharge Permit, if required
- Seattle City Light—Clearance Permits
- Seattle Department of Planning and Development—Master Use Permit
- Seattle Department of Planning and Development—Shoreline Substantial Development Permit
- Seattle Department of Planning and Development—Grading Permit I
- Seattle Department of Planning and Development—Building Permit
- Seattle Department of Planning and Development—Demolition Permit
- Seattle Department of Planning and Development—Side Sewer Permit
- Seattle Department of Transportation—Street Use Permit
- Seattle Department of Neighborhoods and Pioneer Square Preservation Board—Pioneer Square Historic District Certificate of Approval
- Seattle Department of Neighborhoods and Pike Place Market Historic District Commission—Pike Place Market Historic District Certificate of Approval
- Seattle Department of Planning and Development—Major Public Project Construction Variance/Temporary Noise Variance
- Seattle Department of Planning and Development—Removal or Abandonment of Underground Storage Tanks

Other Seattle Permits/Approvals

- Mechanical Permit

- Electrical Permit
- Sign Permit
- Elevator Permit

Fire Alarm Permit Other Permits/Approvals

- Puget Sound Clean Air Agency—Clean Air Act, Air Quality Conformity Review
- Puget Sound Clean Air Agency—Notice of Intent for Demolition Activities and Notice of Construction for Constructing a Concrete Batch Plant

Environmental Compliance

The D-B contractor was responsible for preparing and implementing an environmental compliance plan (ECP). The ECP includes roles and responsibilities for key personnel, procedures to identify and correct non-compliance events, and procedures for emergency response. The plan requires two parts: (1) environmental personnel, communications, and training; and (2) environmental plans and strategies. Key elements, as specified in the RFP, include:

- Temporary Erosion and Sediment Control Plan
- Spill Prevention, Control, and Countermeasures Plan
- Fugitive Dust Control Plan
- Unanticipated Discovery Plan for Cultural Resources
- Roadside Work Plan
- Environmental Communication Protocol
- Collection, Containment, and Disposal Plan
- Soil and Groundwater Management Plan
- Worker Health and Safety Plan
- Supplemental Noise Management and Mitigation Plan (if required)
- Archaeological Construction Methodologies Plan

The ECP is required to be compliant with the quality management plan. It must also be accessible to WSDOT and regulatory agencies. Throughout the project, the ECP must be maintained by the environmental manager at the construction office and on-site at the project.

The RFP required the D-B contractor to provide training and system support to all WSDOT employees and WSDOT representatives that require access to the collaborative website document control system, including licenses.

The contractor was also particularly required to ensure that water quality was monitored in accordance with the WSDOT Highway Runoff Manual protocols, project-specific permit conditions, performance standards, and environmental commitments.

For this project, the contractor was required to maintain a commitments database to enable the D-B contractor to track commitments and verify that commitments have been fulfilled. Although

the contractor was required to develop a relational and centralized database for data storage using Microsoft SQL for some elements of construction, such as inspections and maintenance for tunnel electrical and mechanical systems, this was not specified for environmental commitments. Sections 490, 590, and 630 of WSDOT's environmental manual provide instructions to the DOT on developing environmental commitments during design, incorporating environmental commitments into contracts, and close out of environmental commitments.⁸

In the RFP technical requirements, WSDOT indicates that innovation during the early stages of a project may alter the number of permits, permit modifications, approvals, effects, and mitigation measures required to construct the project. The commitments identified in the RFP represent early commitments that must be followed, but still allow the contractor some flexibility in innovation.

The contractor was required to mitigate all permanent impacts, including: transportation, views, historic resources, neighborhoods and community resources, minorities and low-income populations, energy and greenhouse gas emissions, fish aquatic and wildlife species and habitat, soils and groundwater, and hazardous materials.

Replicable Successful Practices

Develop a standardized environmental commitments element for D-B and P3 RFP template

WSDOT uses standardized templates for environmental elements of the RFP. The environmental requirements, as captured in the RFP, include the following:

- General
- Mandatory Standards
- Performance Requirements
- Design and Construction Requirements
- Environmental Commitments
- Submittals

In addition to these major topic areas, WSDOT also specifies minimum qualifications for an environmental manager. The RFP template has since been updated to expand on several additional sections, including: environmental personnel, communications, and training; environmental plans and strategies; and construction requirements.

Develop database tools to track environmental commitments

WSDOT specified in the RFP that the environmental manager (described more below) would be required to develop an inventory of commitments that are entered into an electronic commitment tracking system (CTS). The CTS database tool allows the environmental manager to assign staff

⁸ WSDOT. 2018. Environmental Manual, M 31-11. August 27, 2018. Available at: <https://www.wsdot.wa.gov/Publications/Manuals/M31-11.htm>.

to commitments. It also allows the contractor staff to identify and store existing guidance documents that help them successfully comply with the commitment.

The CTS also facilitates developing the contract, allows the contractor to manage the status of its commitments, and includes compliance recording and reporting features that are consistent with existing program policy and permit requirements. Updating and tracking commitment status from project design to construction and closeout is coordinated via team meetings between the contractor and WSDOT. Commitment leads make regular updates to the CTS to generate current commitment status reporting, reviewed during meetings by project and program management.

Require environmental training for all onsite workers and visitors

WSDOT requires environmental training with all staff on the project site before staff are allowed onsite.

The RFP specified that the D-B contractor was responsible for developing and implementing an environmental protection training program for contractor staff, quality assurance personnel, subcontractors, and vendors. The requirements for the training include ensuring that personnel were oriented with regard to the following:

- Permit conditions, performance standards, environmental commitments, and environmental regulations related to the project
- Overall importance of environmental issues
- Specific environmental sensitivities of the project
- Erosion and sediment control procedures and certification
- ECAP triggers for non-compliance monitoring to WSDOT
- Environmental compliance monitoring and reporting procedures
- Management of known or suspected contamination
- Unanticipated historic or archaeological discoveries
- Emergency response procedures

Develop incentives specific to environmental commitments

WSDOT uses incentives specific to environmental commitments in the form of technical credits assigned to contractors during the RFP phase to ensure that environmental compliance is prioritized during construction. For example, if the contractor assigns dedicated staff that address erosion control issues and correct deficient issues that require attention within 24 hours, those elements will receive technical credits that are then subtracted from the bid amount. These technical credits do not involve the exchange of money, rather they are credited against the contractor's final bid to make it appear as though costs were reduced.

Under the best value determination, technical credits were assigned to the two firms for this project. The contractor that was ultimately selected, Seattle Tunnel Partners, proposed a higher price than the competing contractor, but succeeded through technical credits. Table 4 shows the apparent best value score for each firm, after technical credits were deducted.

Table 4. Apparent Best Value Score for Alaskan Way Viaduct Bidders

| Proposer Name | Apparent Best Value Score | Assigned Technical Credits | Proposal Price |
|-------------------------|---------------------------|----------------------------|----------------|
| Seattle Tunneling Group | 1,050,150,002 | 38,152,000 | 1,088,302,002 |
| Seattle Tunnel Partners | 1,018,123,002 | 71,577,000 | 1,089,700,002 |

For the Alaskan Way Viaduct, contractors could be disqualified for receiving a ‘fail’ for any evaluation factor that is scored as ‘pass/fail.’ Environmental technical credits were awarded for approaches to management of the project section, which included plans for management of environmental compliance, approaches for excavation and support of bored tunnel, and management of ground deformation impacts.

Assign bottom-line responsibility for environmental compliance monitoring

The RFP requires the D-B contractor to appoint an environmental manager to organize and implement weekly meetings with WSDOT throughout the life of the project to ensure that the project meets the environmental commitments and identify the construction elements that present the greatest risk to the environment. The environmental manager is also responsible for reviewing best management practices at the meetings. Permitting agency representatives are invited to the weekly meetings as deemed necessary.

The environmental manager is also responsible for using the commitments database and construction schedules to identify environmental commitments that pertain to upcoming work activities.

In addition to the environmental manager, all projects in WSDOT are assigned a commitment lead by WSDOT who reviews project commitment documents, including interagency agreements, requests for proposals, environmental documents, permits, and agency directives and concurrence letters. From these documents, the commitment lead develops an inventory of commitments that are entered into the electronic CTS.

WSDOT elects to have environmental staff to stay on the project through design and construction to verify that the D-B contractor is performing according to expectations and will routinely perform audits to confirm compliance. WSDOT also retains responsibility for communicating issues to regulatory agencies.

Allocation of Responsibility and Risk

As mentioned before, WSDOT is primarily responsible for obtaining permits. In some cases, the D-B contractor would be responsible for developing technical content to support decision-making or lead programmatic consultation requirements. Only in three cases—Shorelines &

Growth Management Act—Critical Areas; Shorelines & Growth Management Act—Critical Areas, Noise Variance/Exemption; and 402 Construction Stormwater General Permit NPDES—may the D-B contractor be the permit owner/applicant. Table 5 includes the approval matrix delineating responsibilities between WSDOT and the D-B contractor during design/construction.

Table 5. Delegation of Environmental Permits and Approvals for WSDOT D-B Projects—Design/Construct (Including Pre-Design Field Investigations)

| Environmental Approval/ Permit | Regulating Agency | What WSDOT Must Own | What D-B Contractor Can Own |
|---|-------------------|---|---|
| Government to Government Tribal Consultation | Tribes | WSDOT owns/leads all government to government meetings and decision making. | D-B assists WSDOT with project technical content to support WSDOT decision making. |
| Section 106 | Tribes & DAHP | <p>Under 36 CFR 800.14, FHWA has delegated authority to WSDOT to own/lead consultations with Tribes and DAHP and retains signatory/approval authority, through our Statewide PA with Washington SHPO and the Advisory Council on Historic Preservation:</p> <ul style="list-style-type: none"> • WSDOT meets with Tribes to decide on scope • Defines how to deal with monitoring during construction, if required. • Establishes qualifications for D-B staff working to support Section 106 approval • FHWA, WSDOT, and the SHPO will sign and execute any MOA if WSDOT determines an undertaking may have an adverse effect on historic properties. FHWA will notify the Advisory Council on Historic Preservation in accordance with 36 CFR 800.6(a). | D-B assists WSDOT with project technical content to support WSDOT decision making. The PA requires that WSDOT cultural resources specialist either conduct cultural resource studies in-house or review all such studies done by consultants on behalf of FHWA, for approval. |
| Endangered Species Act/ Migratory Bird Treaty Act | NMFS/ USFWS | <p>WSDOT owns/leads consultations with federal services and retains signatory/approval authority for informal consultations.</p> <ul style="list-style-type: none"> • Provides Programmatic Biological Assessment requirements for D-B to implement • Establishes qualifications for D-B staff | D-B implements programmatic consultation requirements. WSDOT reinitiates Endangered Species Act consultation if necessary. |

| Environmental Approval/ Permit | Regulating Agency | What WSDOT Must Own | What D-B Contractor Can Own |
|--------------------------------|-------------------|--|--|
| | | working to support fish handling and Migratory Bird Treaty Act work • FHWA signs the Biological Assessment prepared for formal consultations and sends it to the federal services. | |
| NEPA | WSDOT/ FHWA | WSDOT owns NEPA decision/signatory and may define level of effort in specific subject matter areas needed. 23 CFR 636.109 allows WSDOT to award the contract prior to NEPA completion. If this occurs, WSDOT must receive prior FHWA concurrence before issuing the RFP, awarding a D-B contract and proceeding with preliminary design work under the D-B contract. | If WSDOT awards a D-B contract prior to the conclusion of the NEPA process, then: The D-B must not prepare the NEPA document or have any decision-making responsibility with respect to the NEPA process. Any consultants who prepare the NEPA document must be selected by and subject to the exclusive direction and control of the contracting agency per 23 CFR 636.109. |
| SEPA | WSDOT | WSDOT owns SEPA decision/signatory and may define level of effort is specific subject matter areas needed. WSDOT documents SEPA compliance using the Environmental Classification Summary. | D-B implements any SEPA-related commitments. |
| Section 404/10 | USACE | WSDOT is owner/applicant. WSDOT reviews/signs permit application. | D-B may prepare permit application for WSDOT approval/signature. (Discussing further delegation opportunities with USACE, but not currently approved - 1/31/2017) |
| Section 401 | Ecology | WSDOT is owner/applicant. WSDOT reviews/signs permit application. | D-B may prepare permit application for WSDOT approval/signature. (Discussing further delegation opportunities with Ecology, but not currently approved - 1/31/2017) |

| Environmental Approval/ Permit | Regulating Agency | What WSDOT Must Own | What D-B Contractor Can Own |
|---|-------------------|---|--|
| Hydraulic Project Approval ¹ | WDFW | WSDOT is owner/applicant and may appoint D-B as the authorized agent. Reviews/signs permit application. WSDOT cannot transfer the Hydraulic Project Approval per WAC 220-660-050(18). | D-B may prepare permit application for WSDOT approval/signature. (Discussing further delegation opportunities with WDFW, but not currently approved - 1/31/2017) |
| Section 9/Bridge Permit or Authorization | Coast Guard | WSDOT collaborates early with the Coast Guard to determine if a bridge permit is required. Even if the project is exempt from having to obtain a bridge permit, WSDOT may still be required to obtain other approvals such as a bridge work plan approval and maritime stakeholder notification (local notice to mariners). WSDOT is owner/applicant. WSDOT reviews/signs permit application. | D-B may prepare permit application for WSDOT approval/signature. (Discussing further delegation opportunities with Coast Guard, but not currently approved - 1/31/2017). |
| Shorelines & Growth Management Act—Critical Areas | City or County | WSDOT typically obtains the necessary shoreline approvals and critical areas permits prior to RFP issuance to avoid a schedule delays. | D-B may be designated by WSDOT as either contact or authorized agent. D-B prepares permit application for WSDOT approval/signature. |
| Noise Variance/Exemption | City or County | WSDOT decides if D-B will obtain and own this permit. Recommend that D-B own this. | D-B may be permit owner/applicant, if the permit requirement is triggered. |
| 402-Construction Stormwater General Permit, NPDES | Ecology | WSDOT decides if D-B will obtain and own this permit. Recommend that D-B own this. | D-B may be permit owner/applicant, if the permit requirement is triggered. |