
Navigating Environmental Compliance for Public-Private Partnership Projects

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Eleven years ago, the U.S. Department of Transportation announced that the primary source of funding for the nation's surface transportation, the Highway Trust Fund, had run out of money. Congress temporarily staunched the flow of red ink through annual appropriations since then. Nevertheless, the dramatic announcement highlighted the crisis in transportation funding that had been growing for decades. Revenues from federal motor vehicle fuel taxes are woefully inadequate to meet the nation's transportation infrastructure needs. These needs are expected to accelerate as climate change and associated sea level rise create new infrastructure challenges.

The explanation of the funding shortfall is undisputed: Congress last increased the gas tax—by five cents—in 1993. Although some states have backfilled the shortfall in the Highway Trust Fund, the federal gas tax remains the single biggest source of funding for highway and transit construction and maintenance. The Trust Fund simply is not adequate to meet the growing mobility needs of the nation. Since 1993, neither political party has exhibited the political will required to increase the federal gas tax or to adopt new revenue alternatives to address the funding shortfall.

Much of the Interstate Highway System and urban transit system is more than 50 years old and in urgent need of repair and replacement. As cars and trucks become more fuel efficient, each mile traveled has the same wear and tear on the nation's highways but generates less revenue. The important transition to electric vehicles (which pay no gas taxes) to address climate change will further accelerate the negative revenue trend. The funding gap for needed surface transportation improvements through 2040 exceeds four trillion dollars. Amer. Soc. of Civ. Engrs., *Failure to Act: Closing the Infrastructure Investment Gap*, 5 (2016).

The Role of P3 Projects in Bridging the Funding Gap

The enormous deficit in public transportation funding, and related capital market demands, have increasingly triggered the use of public-private partnerships (P3s) by public transportation authorities to build, operate, and maintain the largest and most expensive transportation projects. The term P3 describes a diverse array of agreements between a public and private entity. A P3 procurement is commonly defined as “procurement of a long-term contract for multiple elements that may include development (design and construction), operation and/or maintenance of a facility that involves a

component of private financing.” U.S. Dept. of Transp., *Public Private Partnership (P3): A Guide for Public Owners*, 2 (2019). Some P3 definitions include design-build procurement methods that don't include a financing component.

P3 delivery is not a panacea for the nation's infrastructure funding challenge. P3 projects are best suited for large projects in circumstances where a private sector developer is willing to assume project design, construction, operation, and revenue risk. P3 delivery methods are essential where project financing is dependent on contractual commitments to a guaranteed price and completion date. A common objective of P3 procurements is to shift design, construction, and operational risk from the public agency owner to the private project developer. To do so more effectively requires greater integrated and earlier design and construction contractor involvement in project design in the environmental compliance process than normally occurs in a traditional design-bid-build (DBB) project. This is the case because project developers are only willing to assume the additional risks if they have sufficient control over the management of these risks and confidence that risk mitigation measures will be effective. For example, project developers may be unwilling to assume the risks associated with complying with project environmental elements if the contractor is not able to manage the cost of delivering the environmental elements.

Project developer involvement in the early design and environmental review of project alternatives raises several environmental compliance issues, including assuring that developer involvement does not prejudice the federal lead agency's objective and independent project environmental evaluation. The law is evolving to reconcile the demonstrated need for P3 project delivery with federal environmental law requirements of a robust and objective evaluation of project impacts, alternatives, and mitigation measures.

Project Cost and Completion Uncertainty: The Origin of the P3 Delivery Model

Virtually all the Interstate Highway System and most other large transportation projects built in the twentieth century were designed and built using the traditional DBB procurement method. Under this method, the agency asks for bids based on a final design developed by the agency (or a design consultant) and a standard form contract. In most states, the construction contract is awarded to the lowest bid that is responsive to the bid documents. The construction contractor has no liability, and may demand additional compensation, for design changes, differing site conditions, and other circumstances outside of the construction contractor's control. As a result, DBB procurement commonly results in costly construction claim disputes among

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the agency, the design engineer, and the construction contractor—with each blaming other parties for project delays and cost increases. The history of DBB procurement is littered with examples of enormous construction cost increases and delays in project completion. One study analyzed the delivery of 258 highway and rail mega-projects in 20 countries using traditional project delivery methods. Nearly all the projects experienced cost overruns, with the average rail project costing 45 percent more than projected and the average highway project costing 20 percent more than projected. Bent Flyvbjerg, *Megaprojects and Risk: An Anatomy of Ambition* (2003).

This checkered history led to the development of alternatives to DBB—particularly for large and complex projects. Design-build (DB) delivery for transportation projects emerged in the 1990s with the Orange County California toll road system and Utah's I-15 reconstruction project. DB delivery integrates final design and construction under a single contract, with the contractor assuming greater design, construction cost increase, and project completion risk.

DB is similar to DBB in that both involve a relatively short-term relationship between the public and private sectors. In the DBB model, the agency retains a significant degree of control over the construction process, while the DB model involves transfer of certain risks and significant control to the design-build contractor. In some DB contracts, the DB contractor contributes equity to support the project financing. In contrast to DBB, the typical DB contract is procured based on preliminary design plans, with the DB contractor preparing final design plans that comply with the agency specifications and environmental requirements. A study comparing project delivery using DBB and DB methods documented that DB projects had lower unit costs, less cost growth, and fewer construction delays than DBB projects. Mark Konchar & Victor Sanvido, *Comparison of U.S. Project Delivery Systems*, 124 J. Const. Engineering & Mgmt. 435, 435–44 (1998).

DB and P3 procurement methods allow the agency owner to lock in the project cost and completion date much earlier (with 15 to 30 percent design) than could occur under the DBB method. DB and P3 methods provide the agency owner and project investors with much greater confidence that project revenues will be sufficient to complete the project and avoid returning to the capital markets and agency funds for additional money to complete the project. The agency owner can carry forward smaller contingency accounts.

Overview of the P3 Project Delivery

P3s can be used to procure new-build facilities, including developing new transportation assets, or the upgrading or expanding of an existing facility. P3s may be structured as a DB contract funded by municipal bonds secured by tolls and other user fees, design-build-finance-maintain (DBFM), design-build-finance-operate-maintain (DBFOM), or any other delivery method that combines design, construction, operations, or maintenance functions with a private finance component. The P3 model shifts project completion and operational risks to the private sector. Project risks are allocated to the entity best suited to manage and mitigate the particular risk. In some P3 methods, in return for the project developer assuming project completion and performance risk, the private project developer is given greater flexibility to determine its approach to the design and construction of the project,

including design and construction of project environmental elements. The project developer is required to implement conditions of environmental permits with the contract allocating risk for increased costs related to changes to environmental standards identified in the contract.

For many mega-projects, P3 is the only feasible project delivery method. This is particularly true where project debt is secured largely by future project revenues such as tolls. In this circumstance, the capital markets require use of P3 delivery tools to minimize delays in project completion and the risk of design, construction, and operational cost increases. There are many and diverse examples of delivery of mega-projects using the P3 methods, including the Port of Miami Tunnel, the Golden Gate Bridge Presidio Parkway in San Francisco, the Ohio River Bridges between Indiana and Kentucky, the North Tarrant Expressway in Texas, the LAX Automated People Mover and Consolidated Rental Car Facility, and the I-495 HOT Lanes Project in Virginia.

NEPA Compliance and P3 Project Delivery

The federal National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 *et seq.*, requires that federal agencies independently and objectively evaluate project environmental impacts, develop a range of project alternatives, and identify mitigation measures. Congress enacted NEPA to ensure a fully formed and well-considered agency decision. *Vermont Yankee Nuclear Power Corp. v. Natural Res. Def. Council, Inc.*, 435 U.S. 519, 558 (1978). NEPA requires that proposed federal actions be evaluated in light of their impact upon the environment, not to serve as a basis for *post hoc* evaluation of an action already underway or completed. *California v. Norton*, 311 F.3d 1162, 1175 (9th Cir. 2002).

Under the DBB project delivery model, construction contract procurement is not initiated until after NEPA clearance, and after final design plans are completed. This linear “heel—toe” approach explains in part why it can take decades to complete the project planning, conceptual and preliminary design, environmental permitting, final design, and construction of large transportation projects. Optimal use of P3 delivery models includes greater involvement by the project developer than occurs in traditional DBB project delivery where the public agency retains control of all project design and completion risk. Early involvement by a P3 developer—prior to the final NEPA approval—encourages private sector innovation in the project design and delivery process. The P3 developer's expertise in design, constructability, and operations can be incorporated into project design to ensure a more optimal outcome and greater construction and maintenance cost certainty than is possible under DBB and DB methods.

Some agencies are engaging more than one P3 developer early in the NEPA process to prepare competing project design alternatives for evaluation in the environmental impact statement (EIS). Competition between the design teams encourages design creativity to address project cost, environmental compliance, and community issues in a manner that is not possible when all conceptual and preliminary design alternatives are prepared by the same design consultant.

One objection to early involvement of the P3 developer is that it could bias the NEPA process by allowing the developer to prepare technical reports and preliminary engineering plans that define the project for evaluation in the EIS. NEPA

includes various mechanisms to achieve the goal of an adequate and objective environmental evaluation, including protection against conflicts of interest, evaluation of a reasonable range of alternatives, triggers for additional environmental review, and limitations on agency commitments prior to NEPA clearance.

Conflict of Interest Issues. There is a potential for a conflict in NEPA's goals of an impartial evaluation of a project's potential impacts and a range of project alternatives with the involvement of the project developer in project development. In recognition of this potential conflict, the NEPA regulations include provisions to remove conflicts of interest from the environmental review process.

The U.S. Council on Environmental Quality (CEQ) regulations authorize the preparation of impact statements by consultants selected by the responsible federal agency. 40 C.F.R. § 1506.5(c). The regulations state that conflicts of interest should be avoided, and they require a disclosure statement by the consultant indicating that it has no financial or other interest in the outcome of the project. A consultant who has an enforceable promise or guarantee of future work has a conflict of interest, but not a consultant who has merely an expectation of future work. *Associations Working for Aurora's Residential Env't v. Colo. Dept. of Transp.*, 153 F.3d 1122 (10th Cir. 1998) (finding no conflict of interest where EIS consultant had an expectation of contract to prepare final design for highway project). One firm may not contemporaneously hold a contract as a NEPA consultant and construction engineer/operator for the same project. *Guidance Regarding NEPA Regulations*, 48 Fed. Reg. 34,263, 34,266 (July 22, 1983). Firms involved in the preparation of the EIS may, however, later bid in competition with others for future work on the project if the proposed action is approved. *Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations*, 46 Fed. Reg. 18,026, 18,031 (Question 17b) (Mar. 23, 1986). The NEPA lead agency is required to furnish guidance and participate in the preparation of the impact statement, to evaluate it independently, and take responsibility for its scope and contents. 40 C.F.R. § 1506.5. Courts have allowed federal agencies to delegate the preparation of impact statements to consultants if the federal agency retains sufficient control of, and independently reviews, the work product.

While a private party with a stake in the outcome of the NEPA process may not prepare an EIS, the developer may prepare studies that inform the NEPA process. A federal lead agency preparing an EIS may do so based on information provided by a private applicant with a financial interest in the outcome of the project, so long as that interest is fully disclosed and the federal lead agency independently reviews and participates in the preparation of the EIS. *Life of Land v. Bringer*, 485 F.2d 460, 467 (9th Cir. 1973).

In the early 1990s the Federal Highway Administration's (FHWA) interpretations of NEPA effectively precluded any early P3 developer involvement prior to NEPA clearance. FHWA took the position that agencies could not enter into a DB contract, or even initiate the procurement process, prior to NEPA clearance. Congress stepped in and directed FHWA to adopt a rule allowing execution of DB contract and preliminary design work prior to NEPA clearance. FHWA's resulting Design-Build Rule authorizes an agency to award a design-build or P3 contract prior to the conclusion of the NEPA process, as long as no commitment is made to any alternative prior to NEPA clearance and final design and construction commences after completion of NEPA review. 23 C.F.R. § 636.109(a)(3)–(6).

NEPA requires a level of design that provides enough information to evaluate adequately the project's impacts and identify mitigation. It also requires sufficient design of project alternatives to allow an apples-to-apples comparison of the comparative environmental impact of the alternatives. Under the Design-Build Rule, the developer may undertake preliminary engineering activities to help define project alternatives but cannot undertake a level of design that would foreclose potential reasonable alternatives.

Limitations on the level of project design prior to NEPA clearance cuts both ways for P3 developers and the public. On the one hand, the level of design that allows for more precise identification of impacts may result in a level of design that reduces some of the flexibility that the developer may desire. On the other hand, limiting design to a conceptual level necessitates completion of substantial project design following the NEPA process, and increases the risk of substantial post-NEPA project design schedule delays and cost increases.

In P3 procurements, it is in the interest of the agency and the developer to maximize project design of certain project elements in order to minimize the risk of construction cost increases from unknown conditions (e.g., geotechnical risks). Agencies can minimize some of these risks by authorizing more advanced preliminary engineering investigations to identify potential environmental impacts (e.g., extent of remedial grading; bridge structure location and design). There is no bright-line delineation between advanced preliminary engineering (authorized by the Design-Build Rule) and "final" engineering (not allowed prior to NEPA clearance).

Screening of Alternatives and the Pre-Decisional Issue. A key area of conflict between the NEPA review process and P3 project delivery is in the evaluation and screening of alternatives. NEPA requires agencies to rigorously explore and objectively evaluate all reasonable alternatives and identify the agency's preferred alternative. The "rule of reason" guides the scope of alternatives that must be considered in the EIS. An agency is not required to consider an infinite range of alternatives, only those that are reasonable or feasible. *Vermont Yankee Nuclear Power Corp.*, 435 U.S. at 551–52; 40 C.F.R. § 1502.14(a)-(c). However, the existence of a viable but unexamined alternative renders an EIS inadequate. *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992).

While an EIS must consider all reasonable alternatives, the range of alternatives that must be considered is dictated by the nature and scope of the proposed action. *HonoluluTraffic.com v. Fed. Transit Admin.*, 742 F.3d 1222, 1231 (9th Cir. 2014). Thus, an agency is under no obligation to consider every possible alternative to a proposed action, nor must it consider alternatives that are unlikely to be implemented or those inconsistent with its basic policy objectives. *Seattle Audubon Soc'y v. Mosely*, 80 F.3d 1401, 1404 (9th Cir. 1996). Agencies may consider feasibility (including the agency's ability to finance the project) in screening alternatives in the NEPA process.

Early involvement of the P3 developer optimizes the ability of the agency to define and refine project alternatives, and to evaluate the feasibility of different alternatives. In an era of limited revenues, agencies are increasingly sensitive to the life-cycle economic cost of a project (e.g., maintenance costs) and not simply the cost of design and construction. Some P3 methods such as DBFM and DBFOM provide agencies with the ability to determine the life-cycle economic and environmental cost of project alternatives during the NEPA process.

The developer's involvement in the alternatives development process can provide better assurances about the financial and environmental feasibility of alternatives carried forward for further study. It can enhance the ability of the agency and the public to understand how the alternatives address practical concerns regarding design and constructability.

Modifications to the NEPA-Approved Project. The approved project alternative as described in the final EIS and Record of Decision (ROD) necessarily limits the ability of agencies to change the project design after NEPA clearance. Major changes to a project after the ROD risk triggering additional NEPA review, project delay, and increased design and construction costs. The P3 model works best where the project developer either retains a degree of design flexibility to take advantages of private sector innovation or is able to contribute to the design of the project prior to NEPA clearance.

NEPA generally requires a supplemental EIS where a change to a proposed project would result in significant new environmental impacts (i.e., significant impacts not evaluated in the EIS) or where there is new information or circumstances relevant to environmental concerns and bearing on the proposed action or its impacts. Thus, post-NEPA project modifications necessitate that agencies reevaluate the modification to determine whether it is within the scope of contemplated environmental impacts, or if a supplemental EIS is necessary. Any reevaluation can lead to project delays and increased costs, especially where they result in a supplemental EIS.

Thus, the decision about when to involve the P3 developer in the project in relation to the NEPA process can have profound impacts on a project's costs and schedule. Following completion of the environmental review, the P3 developer is subject to constraints established by the final EIS, ROD, and environmental permits. Any modifications to the project may result in a costly or lengthy reevaluation or, if the circumstances warrant, a supplemental EIS, and may require amendment of permits that are approved based on the final EIS project description.

In contrast, early involvement by the P3 developer provides for greater flexibility in project design. For example, because NEPA project descriptions tend to be broad, the P3 developer has some flexibility in the final project design, and could proactively address necessary modifications or mitigation by incorporating those features into the project's design prior to the final NEPA decision, thereby reducing the risk of post-NEPA modifications that are subject to additional analyses and re-evaluation.

Mitigation Commitments. NEPA requires that an EIS discuss mitigation measures for significant environmental impacts. While NEPA requires a reasonably complete discussion of possible mitigation measures, it does not require a final mitigation plan. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332 (1989). A "mere listing" of mitigation measures is insufficient. *League of Wilderness Defenders/Blue Mountain BioDiversity Project v. Forsgren*, 309 F.3d 1181, 1192 (9th Cir. 2002). A discussion of mitigation measures cannot be conclusory or perfunctory. *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372 (9th Cir. 1998).

As a practical matter, however, it is often necessary for agencies to commit to very detailed mitigation measures in order to obtain the approval or non-opposition of permitting agencies, and to minimize public opposition. Federal laws such as the Clean Water Act, the Clean Air Act, the National Historic Preservation Act, and the Endangered Species Act often require the lead NEPA agency to prepare detailed mitigation

plans and measures prior to NEPA clearance. Environmental permit conditions commonly include features that require continuing maintenance efforts for several years after the project approval to achieve performance standards such as wetland and habitat restoration and water quality conditions.

Early involvement of the P3 developer in decisions regarding mitigation measures allows the party assuming the risk of complying with the measures to incorporate proactively the cost and feasibility of the mitigation into the project design. The developer's willingness to do so may depend on the financial feasibility of such measures. This poses a potential conflict because a private developer may be more willing to incorporate novel mitigation to resolve potential disputes and avoid delay costs, whereas agencies may be wary of adopting such mitigation and establishing a precedent for future agency projects. The private developer may be less averse to setting precedents for future projects if it will reduce construction and maintenance costs.

One Federal Decision and the Need for More Advanced Design in the EIS. The One Federal Decision Executive Order, E.O. 13,807, creates additional pressure on agencies to complete more advanced project design during the NEPA process. Published in the *Federal Register* on August 24, 2017, it aims to streamline the environmental review process by requiring federal agencies to process environmental reviews for "major infrastructure projects" as one federal decision. 82 Fed. Reg. 40,463 (Presidential Order on Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure). One Federal Decision establishes a goal for transportation agencies to complete the NEPA review process—Notice of Intent through ROD—in two years, with all federal authorization decisions for the construction of the major infrastructure project completed within 90 days of the issuance of the ROD.

Meeting the two-year target established by One Federal Decision will necessitate an unprecedented level of coordination among transportation and permitting agencies during the NEPA process. Completing project permitting within 90 days of the ROD will require a more detailed level of project design than typically occurs during the NEPA process. As a result, early developer involvement will become increasingly important to ensure that the project design is buildable and will satisfy permitting requirements such as avoidance of wetlands and other sensitive areas. Failure to involve the P3 developer early in the process would result in a loss of the flexibility and creativity envisioned by the P3 procurement process.

The Promise and Challenge of P3 Project Delivery

The enormous shortfall in traditional sources of transportation funding necessitates the use of P3 project delivery models for large and expensive transportation projects. The need will become more acute as agencies grapple with the impact of climate change, and the associated sea level rise, on infrastructure. To take full advantage of P3 project delivery, transportation agencies should structure the environmental evaluation and permitting process to preserve project developer innovation and flexibility. Federal environmental law is evolving to accommodate P3 project delivery methods while complying with NEPA requirements for an objective and robust environmental evaluation of project impacts, alternatives, and mitigation measures. 🌳