



CENTER FOR INNOVATIVE FINANCE SUPPORT

QUICK FACTS

Design–build (DB) projects are set up as fixed-price contracts between a private entity and a public agency to jointly manage the design and construction of a new roadway facility.

With design–build–finance (DBF) projects, the private partner provides the necessary up-front capital and is generally repaid by a State or local government in a series of installments funded by taxes, fees, or tolls.

With design–build–finance–operate–maintain (DBFOM) projects, the private partner additionally agrees to perform operations and carry out maintenance on the highway for a specific period.

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PUBLIC-PRIVATE PARTNERSHIPS (P3s)

Types of Public–Private Partnerships (P3s)

The use of Public–Private Partnerships (P3s) marks a shift away from traditional ways of procuring and financing highway projects. Under traditional procurement processes, private contractors construct projects based on a public design by using public funding. The projects are then operated and maintained by public agencies. With the P3 model, a private partner may participate in some combination of design, construction, financing, operations, and maintenance, including the collection of toll revenues (see table).

Three main types of P3s have been used for highway projects in the United States:

1. Design–build (DB).
2. Design–build–finance (DBF).
3. Design–build–finance–operate–maintain (DBFOM).

These types of P3s are discussed in this fact sheet. Although the term *public–private partnerships* may be applied to a range of contract types—as well as to the lease of existing assets—the focus of the Federal Highway Administration’s (FHWA’s) Center for Innovative Finance Support is on DBFOM projects, that is, P3s that involve private partners that design, build, finance, operate, and maintain new highway capacity over a long term.



Interstate 595 Raising Ramp.

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Key Differences Between Conventional and P3 Procurement Approaches.

Conventional Projects (design–bid–build)	P3 Projects (design–build, design–build–finance, and design–build–finance–operate–maintain)
Public sector burdened with all risks.	Risks shared between public and private partners.
Succession of separate (and multiple) contracts.	Integration of two or more project phases.
Public financing.	Private financing (except design–build).
Lowest bidder.	Best-suited bidder.

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DESIGN-BUILD PROJECTS

DB projects are the most common type of P3. They are set up as fixed-price contracts between a private entity and a public agency to jointly manage the design and construction of a new roadway facility. Under such an arrangement, the private party accepts most or all of the risk of any increase in costs associated with the project's design, eliminating a common source of "change orders" that add to the cost of traditional design-bid-build projects. Having the same party design and construct the project allows the DB contractor to propose innovations in design that may result in construction savings or better value. Financing is provided by the public partner and comes from tax revenues or direct user charges, such as tolls. The public partner retains ownership of the highway and control of its financing, operations, and maintenance. According to Public Works Financing (PWF), a monthly newsletter that has reported on P3s for roughly 25 years, 79 DB transportation projects valued at \$50 million or more were undertaken in the United States between July 1989 and September 2012, including three that also involved operations.



Port of Miami Tunnel Entry.

DESIGN-BUILD-FINANCE PROJECTS

The same type of contract that is used for a DB effort can be used in a DBF arrangement, except that in this case, the private partner provides the necessary up-front capital and is generally repaid by a State or local government in a series of installments funded by taxes, fees, or tolls. PWF indicates that between July 1989 and September 2012, eight DBF (or build-finance) projects valued at \$50 million or more were undertaken in the United States. DBF projects are typically short-term financing arrangements, ending 5–7 years after construction. They spread out payments for a large project in order to make them more affordable.

DESIGN-BUILD-FINANCE-OPERATE-MAINTAIN PROJECTS

The broadest private role encompasses the elements of the DBF structure but also includes operations and maintenance performed by private firms. These types of partnerships use the same kind of contract as that used for DBF projects, except that in this case, the private partner agrees to perform operations (e.g., the removal of snow and debris and the collection of tolls) and carry out maintenance on the highway for a specific period. Long-term operation by the same party can provide incentives for better life-cycle cost management. Under traditional procurement, the construction contractor is not required to consider ongoing maintenance costs or difficulty. With a long-term DBFOM, the concessionaire has incentives to spend more up front on construction if there will be a payback in reduced maintenance costs over the life of the project.

The contract spells out how the private partner is to be repaid for up-front and ongoing expenses. Repayments are often made through future tolls or other fees imposed on users of the road. Alternatively, availability payments or shadow tolls funded by State or local governments may be used to repay the private partner. The payments may be funded by receipts from toll collections and/or taxes that are not linked directly to the use of the road. Availability payments are periodic payments from the public partner to the private partner based on the availability of a facility at the specified performance level. Shadow tolls are set payments for each vehicle that uses the facility, which may be adjusted based on safety, congestion, or pre-established floors and ceilings.

DBFOM projects are sometimes called build-own-operate-transfer (BOOT) partnerships if the private partner owns the road during the term of the agreement but then transfers ownership to the public partner at the end of the term. PWF indicates that between July 1989 and September 2012, P3s undertook 13 DBFOM projects in the United States valued at \$50 million or more.



OFFICE OF INNOVATIVE PROGRAM DELIVERY

PROGRAM AREAS OF THE CENTER FOR INNOVATIVE FINANCE SUPPORT

The Center for Innovative Finance Support provides a one-stop source for expertise, guidance, research, decision tools, and publications on program delivery innovations. Our Web page, workshops, and other resources help transportation professionals deliver innovation.

PUBLIC-PRIVATE PARTNERSHIPS

The Center for Innovative Finance Support's P3 program focuses on the potential of design-build-operate-finance-maintain (DBFOM) concessions funded through tolls or availability payments to reduce project cost, improve quality outcomes, and provide additional financing options.

ALTERNATIVE PROJECT DELIVERY

The Center for Innovative Finance Support's Alternative Project Delivery Program provides information on contractual arrangements that allow for greater private participation in infrastructure development by transferring risk and responsibility from public project sponsors to private sector engineers, contractors, and investors.

PROJECT FINANCE

The Center for Innovative Finance Support's project finance program focuses on alternative financing, including state infrastructure banks (SIBs), grant anticipation revenue vehicles (GARVEEs), and Build America Bonds (BABs).

TOLLING AND PRICING

The Center for Innovative Finance Support's Federal tolling and pricing program focuses on the use of tolling and other road user charges as a revenue source to fund highway improvements and the use of variably priced tolls as a tool to manage congestion.

VALUE CAPTURE

The Center for Innovative Finance Support's Value Capture Strategies explores strategies for tapping into the added value the transportation improvements bring to nearby properties as a means to provide new funding for surface transportation improvements.



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