

DeL DOT CULVERT REPLACEMENT BRIDGE BUNDLING PROGRAM

In the early 2000s, DeL DOT discovered that it had a serious problem with deterioration of large pipe culverts. Due to a decision made in the 1980s to remove them from the bridge inventory, hundreds of large culverts in poor condition had escaped inspection for decades. DeL DOT assessed the problem and began a bundling program to replace the culverts quickly.

The first attempt to speed up project delivery and achieve cost savings via economies of scale was to create small bundles of culvert replacements. Plans were prepared, and projects were awarded based on LB. This worked, but improvements to the process were still required. Some of the small bundles were delayed because of issues at a single location (i.e., right-of-way, utilities, etc.).

In addition, DeL DOT looked for ways to accelerate the time necessary to develop plans and procure a contract. This led to the second contracting method, which was the development of an IDIQ contract. In this contract, DeL DOT developed detailed plans for five locations that were shovel ready. Additional quantities were included for locations to be determined at a later date. In all, 17 additional locations were added successfully. The contractor that won the bid was involved in the design of the additional locations, which helped to determine utility relocations, stream diversion plans, right-of-way needs, and schedules. The IDIQ methodology helped expedite delivery with this bridge bundle, as DeL DOT did not need to undergo the procurement process for each additional location. The procurement method used for this project was LB.



DeL DOT Pipe Culvert Bundle.

In an effort to move even more quickly, DeL DOT created a D-B contract that included the replacement of 28 culverts under one contract. The successful D-B team was responsible for all aspects of the project, including plan preparation, utility coordination, permit acquisition, and right-of-way negotiations. The procurement method used for this project was BV, which took into consideration both price and the qualifications of the team.

In total, for over 10 years, DeL DOT has spent between \$1 million and \$3 million per year on its culvert replacement bridge bundles. Even with the very simple nature of the work, the contracting methods that gave the contractor input during the design stage were beneficial for the Department. Costs per location were comparable across all three contracting methods.

Name of Agency: Delaware Department of Transportation (DeL DOT)

Location: Statewide

Project Delivery Method: Design-Bid-Build (D-B-B), Indefinite Delivery/Indefinite Quantity (IDIQ), Design-Build (D-B)

Procurement Method: Low Bid (LB), Best Value (BV)

Total Project Cost:

\$1.0 million per contract (D-B-B small bundles: D-B-B/LB)

\$5.5 million over 3 years (Open-End Contract: IDIQ/LB)

\$11.0 million over 3 years (D-B Contract: D-B/BV)

Funding has ranged from \$1 million to \$3 million per year.

Funding Source:

Small D-B-B Bundles: 100% State-Funded and Federal- and State-Funded (80%/20%)

Open-End Contract: 100% State-Funded

D-B Contract: Federal- and State-Funded (80%/20%)

Construction Schedule: The culvert replacement bundle program had varying durations. Each location was assigned a construction schedule based on the work required to complete the job.

Project Website: None

SUMMARY

Program Goals	Goal for culvert bundling contracts is to reduce the number of culverts in poor condition as quickly as possible.
Bridge Selection Criteria	Pipe culverts with over 20 ft ² of opening in poor condition that can be replaced in kind with pipes.
Delivery and Procurement Method	Small D-B-B Bundles: D-B-B, LB Open-End Contract: IDIQ, LB D-B Contract: D-B, BV
Funding Sources, Financing Strategy	Small D-B-B Bundles: 100% State-Funded and Federal- and State-Funded (80%/20%) Open-End Contract: 100% State-Funded D-B Contract: Federal- and State-Funded (80%/20%)
Environmental, Right-of-Way, and Utility Considerations	Small D-B-B Bundles: Completed by DeIDOT before advertisement. Open-End Contract: For added locations, completed by DeIDOT after procurement with input from the contractor. D-B Contract: Third-party coordination is the responsibility of the contractor.
Risks	Small D-B-B Bundles: Typical D-B-B contract. Risk is on the owner. Open-End Contract: IDIQ contracts have inherently higher risk in providing a bid price because locations and exact work type are unknown. Providing known locations and types of work lowered the risk. D-B Contract: Risk is primarily on the contractor. Culvert replacements are primarily low risk.
Owner Management/Quality Assurance	Small D-B-B Bundles: Typical D-B-B contract. Open-End Contract: Contractor involved in design review. Inspection performed by DeIDOT. D-B Contract: Quality assurance, quality control, and construction inspection are the responsibility of the D-B team.
Stakeholder Communication	Communication is the same as any other project. For the D-B contract, the D-B team is responsible for communication with the affected community.



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