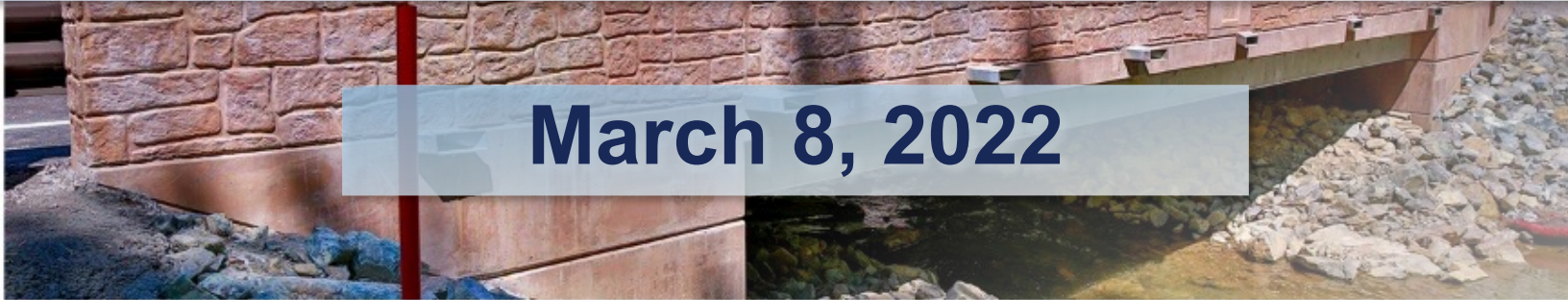


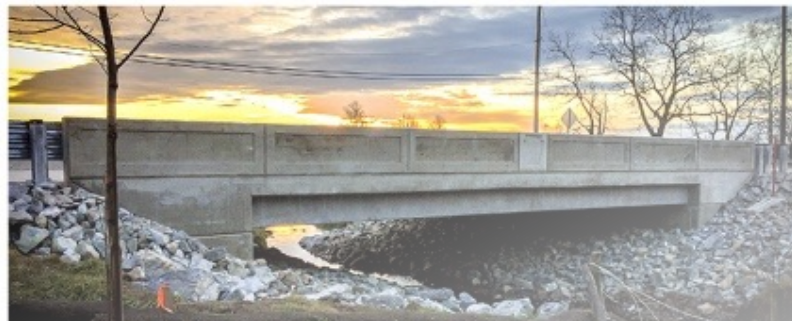


AASHTO Peer Exchange: Alternative Delivery Experience

Pennsylvania Department of Transportation Case Study



March 8, 2022





Rapid Bridge Replacement (RBR) Project

Project Purpose

- ✓ Accelerate replacement of 558 poor condition bridges throughout Pennsylvania
- ✓ Minimize impact to traveling public
- ✓ Showcase P3 as a viable delivery method
- ✓ Allocate risks to party best able to manage them



Project Successes

- ✓ 558 poor condition bridges were replaced
- ✓ Utilization of SEP-15 allowed the DE to develop the NEPA documents in a streamlined, efficient manner
- ✓ Implemented processes to ensure all design submissions were automated and set up tracking processes that can be utilized on future projects
- ✓ Construction innovations



Primary Lessons Learned Themes

- ✓ PennDOT Procurement & Asset Selection
- ✓ PennDOT and Development Entity Shared Requirements
- ✓ Development Entity Performance
- ✓ PennDOT Requirements for Project Management



P3 RBR and DB Project Benefits: Time Savings

P3 RBR – Significant time savings due to P3 delivery method:

- ✓ 558 bridge replacements bundled into single procurement
- ✓ Single entity acting as designer & contractor
- ✓ Ability for DE to finance construction
- ✓ Project completed earlier than DBB method
- ✓ Avoided impact on funding for PennDOT's normal letting program

DB – Time savings due to the overlap of design and construction on DB projects.

**Source: WSP Case Study*



P3 RBR and DB Project Benefits: Change Orders & Claims

P3 RBR – PennDOT issued owner-directed change orders adjusting to the project scope, but generally experienced fewer contractor-initiated claims compared to a typical DBB project.

DB – Reductions in overruns and change orders as compared to DBB related to:

- ✓ Number of claims similar to DBB but nature of claims differs
- ✓ DB claims more tied to ROW acquisition and utility relocations

**Source: WSP Case Study*



P3 RBR and DB Project Benefits: Innovation & Scope Additions

- ✓ Similar innovation experience between P3 RBR, DB and DBB
- ✓ Less scope creep on P3 RBR and DB as compared to DBB

**Source: WSP Case Study*



A photograph of a concrete bridge spanning a rocky stream in a lush green forest. The bridge is a simple concrete slab with a low parapet. The stream is filled with brown, turbulent water, and the banks are covered in green vegetation and trees. The scene is captured from a low angle, looking up at the bridge.

Environmental Experience



Environmental Experience for DB Projects

No noticeable difference between DB
and DBB

**Source: WSP Case Study*



Environmental Experience for P3 RBR Project

SEP-15 Agreement

- ✓ Utilized FHWA's Special Experimental Project (SEP) program
- ✓ For this project, FHWA referred to this as SEP-15

**Source: WSP Case Study*



P3 RBR Project SEP-15 Process

- ✓ Experimental process for FHWA to identify for trial evaluation new P3 approaches to project delivery
- ✓ Allows for efficient delivery of transportation projects without impairing FHWA's responsibilities to protect both the environment and taxpayers
- ✓ Allowed PennDOT to transfer responsibility to obtain environmental clearances and waterway permits under NEPA to the DE

**Source: WSP Case Study*



P3 RBR Project SEP-15 Process

The SEP-15 or “experimental” aspect of this project allowed the P3 RBR project DE to:

- ✓ Prepare NEPA documentation for the project
- ✓ Select the consultants who prepare the NEPA document
- ✓ Retain exclusive control over the consultants who prepare the NEPA document

**Source: SEP-15 Final Report*



P3 RBR SEP-15 Results: Cost & Time Savings

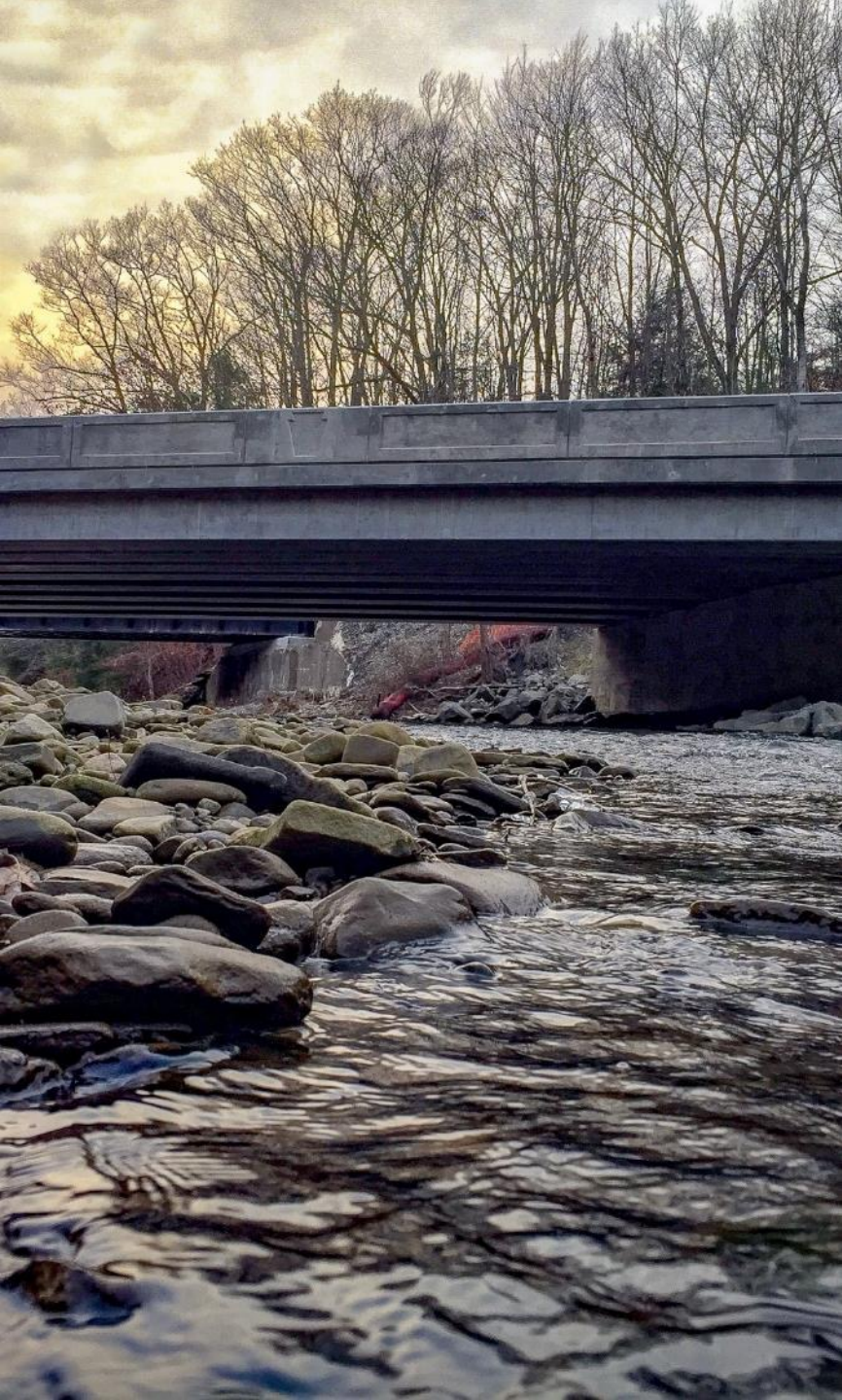
Cost Savings

- ✓ Estimated at \$1.2 million in the NEPA process vs. traditional DBB projects

Time Savings

- ✓ Estimated average savings of 2.5 months for NEPA approvals vs. traditional DBB projects

**Source: SEP-15 Final Report*



Environmental Experience on P3 RBR Project – Key Lessons Learned

Project Management and Administration

- ✓ Ensure NEPA/environmental consultant is familiar with DOT environmental manuals, policies and systems
- ✓ Ensure subject leads or key personnel, as outlined in Technical Provisions have appropriate education, background and experience
- ✓ Ensure design and environmental is a collaborative process to minimize redesign and re-evaluations



Environmental Experience on P3 RBR Project – Key Lessons Learned

NEPA Performance

- ✓ Ensure DE fully understands importance of role in public outreach and coordination with public/governmental stakeholders
- ✓ Ensure projects involving more complex NEPA documentation are considered early in project
- ✓ Ensure conditions stipulated in Section 4.1.C of EDA are included in future projects
- ✓ Ensure DOT and FHWA maintain review and approval authority of NEPA documentation

**Source: SEP-15 Final Report*



Environmental Experience on P3 RBR Project – Key Lessons Learned

NEPA Performance (cont.)

- ✓ Establish review, revision and approval timelines for both PennDOT and DE
- ✓ Maintain early and constant coordination with outside agencies
- ✓ Ensure DE's NEPA/environmental consultant is involved throughout design, permitting and construction phases
- ✓ More actively involve DOT in environmental mitigation discussions with the regulatory agencies
- ✓ Conduct early performance monitoring of NEPA documents and Section 106 process



Environmental Experience on P3 RBR Project – Key Lessons Learned

Innovation

- ✓ Developed a streamlined Aquatic Resources Report by implementing a brief form with attachments rather than written reports
- ✓ Developed a streamlined Section 106 Determination of Effect reporting process via memo format with attached Effect Criteria tables and figures
- ✓ In conjunction with FHWA and PennDOT, developed template/report format to streamline Individual Section 4(f) documents

**Source: SEP-15 Final Report*

Key Project Selection Factors: Design-Build

- ✓ Complex scope of work
- ✓ Expedited completion would benefit the project
- ✓ Need and potential for innovative solutions through ATCs and unique approaches to design and construction
- ✓ ROW requirements are either not extensive or can be completed without significant delay
- ✓ Utility coordination and railroad impacts are either minimal or can be completed without significant delay

**Source: WSP Case Study*



Key Project Selection Factors: P3

- ✓ Availability of and need for private funding
- ✓ Addressing a serious infrastructure problem sooner
- ✓ Using availability payments to pay for the work
- ✓ Shifting certain operations and maintenance obligations to a private partner

**Source: WSP Case Study*



Alternative Delivery: Primary Overall Lessons Learned

- ✓ Proper risk allocation between owner and contractor is necessary
- ✓ Implementing a time management system early in the project avoids later issues
- ✓ Engaging in early discussion concerning expectations and responsibilities between parties establishes a better working relationship
- ✓ Centralized office locations or co-location requirements facilitate collaboration

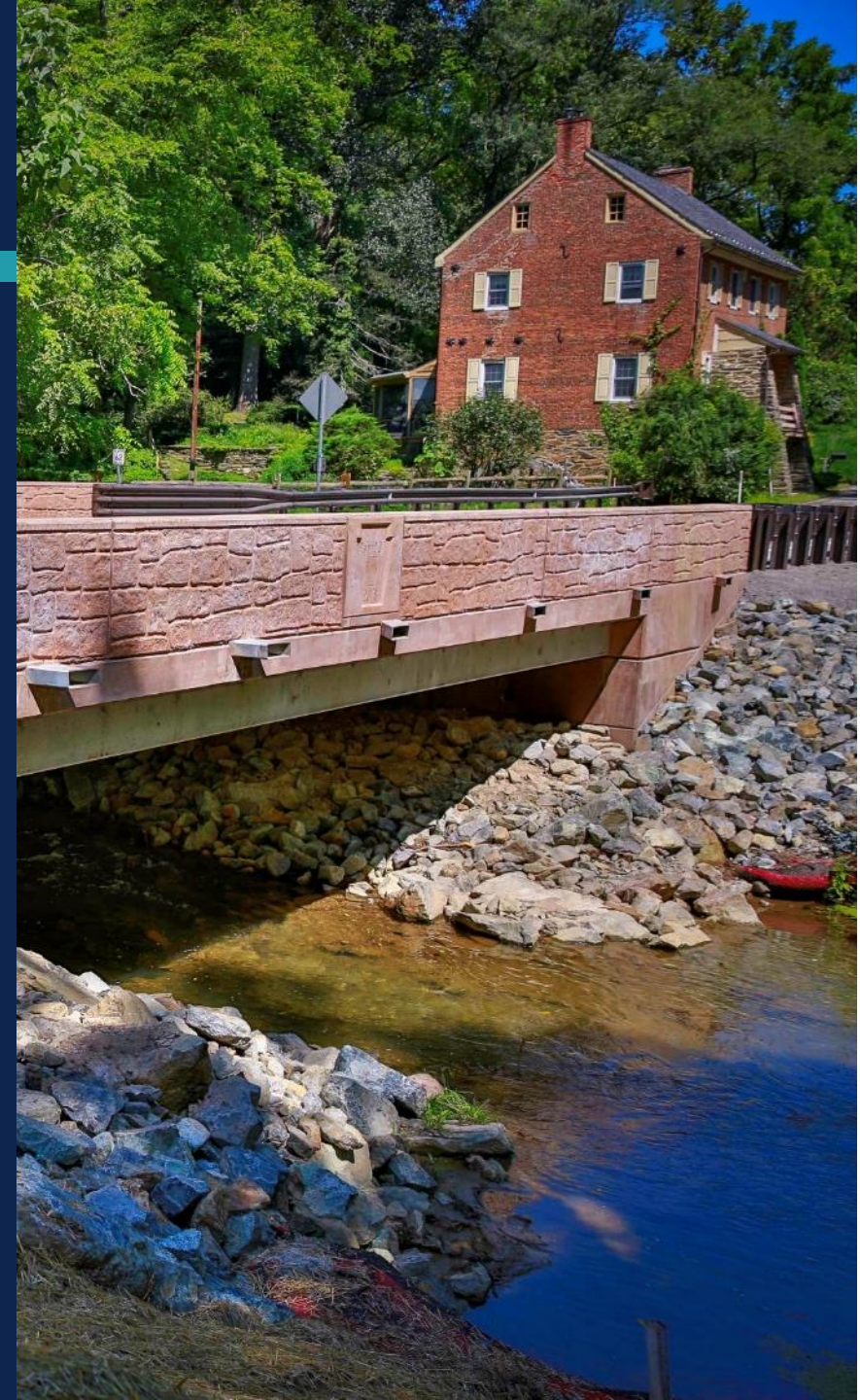
**Source: WSP Case Study*



Alternative Delivery: Primary Overall Lessons Learned

- ✓ Creating a comprehensive operational plan that includes a document control system, streamlined review process and a dispute resolution process can help a project run efficiently
- ✓ Eliminating preferential design comments from the agency can reduce issues
- ✓ Coordinating activities between stakeholders as early as possible improves relationships during the project

**Source: WSP Case Study*



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Questions

For more information on
Public-Private Partnerships:

www.p3.pa.gov

