**Virtual Peer Exchange – Alternative Delivery (March 8, 2022)**

On Tuesday, March 8, 2022, AASHTO hosted the Alternative Delivery and NEPA Process Virtual Peer Review Exchange (VPE). The VPE brought together three state Departments of Transportation (DOTs) that shared their views and experience using alternative project delivery (AD) and the NEPA clearance processes associated with AD. The session began with opening remarks from Melissa Savage, Director of Environment Programs at AASHTO and James Gavin, FHWA Program and Policy Development Team Leader. The three state DOTs and representatives included:

* Pennsylvania DOT (PennDOT)
  + Mark Lombard – Section Chief, Environmental Staff
  + Gary Kleist – Project Manager/Section Chief
* Minnesota DOT (MnDOT)
  + Peter Davich – Design Build Program Manager
* Utah DOT (UDOT)
  + Phil Ellsworth – UDOT Consultant Services Division
  + Brandon Weston – UDOT Director of Environmental Services

**FHWA - James Gavin**

FHWA is a supporter of AD but notes not every project is suited to use AD methods. AASHTO and FHWA are working together on what goes into AD; most notably, what AD methods are available for states to use, what can FHWA do to ensure equity is considered, and how to embrace AD in a way that ensures environmental stewardship and proper environmental review of projects.

AD is appropriate for certain projects with unique challenges and can address certain aspects of funding otherwise not available from traditional delivery models. FHWA has information available about AD on the FHWA website.

FHWA has embraced AD in recent years. Until funding mechanisms other than the Highway Trust Fund are found, AD may be a means to deliver projects that could not otherwise be done. With state DOT partners, these AD techniques could go a long way to fulfill FHWA’s mission.

**PennDOT – Gary Kleist and Mark Lombard**

PennDOT uses Design-Build (DB) and Public-Private Partnership (P3) AD methods. PennDOT highlighted the Rapid Bridge Replacement (RBR) project that used a Design-Build-Finance-Maintain (DBFM) P3 procurement to replace 558 bridges in poor condition throughout Pennsylvania. This project was the first multi-asset, multi-location transportation project of its kind to be procured through a P3 in the United States.

PennDOT noted that the primary benefit of using P3 procurement for the RBR project was being able to replace all 558 bridges quicker than under a traditional procurement contract, minimizing impacts to the traveling public and its traditional highway and bridge delivery program. The RBR project provided value to taxpayers, as the private Developer chosen by PennDOT was responsible for the design, construction, and financing of all 558 bridges, which allowed for the use of standardized designs. For this project, five core designs were developed and then tweaked accordingly for each bridge by the Developer. Additionally, the Developer assumed maintenance operations for a term of 25 years, incentivizing greater construction quality. The RBR project gave PennDOT a new opportunity to make a public commitment for long term operations and maintenance by ensuring, through its maintenance agreement with the Developer, that the new bridges are kept it in good condition.

During and after the project, PennDOT worked with the Developer to prepare lessons learned, which included the following:

* Whether to use AD should be based on the circumstances of a specific project, as AD is not a one size fits all approach;
* Set the rules of engagement early to ensure both parties, the public owner and private entity, know their responsibilities for the entirety of the project, which allows for better collaboration throughout the project lifecycle; and
* Do not rush the procurement. Public owners should take time in resolving upfront work such as environmental remediation and utility relocation.

PennDOT realized significant time savings utilizing the P3 delivery method due to their ability to bundle all 558 bridges into one procurement and obtain upfront private financing from the Developer to accelerate the project schedule. The upfront financing by the Developer was repaid through an availability payment structure where PennDOT would pay the Developer after each successful replacement bridge was constructed. PennDOT also noted that some of the 558 bridges were not part of their Transportation Improvement Program in the coming 10 years, but by using the P3 method, was able to accelerate their replacement.

PennDOT has experienced time savings using DB over Design-Bid-Build (DBB) due to the overlap of design and construction on DB projects. However, PennDOT cautions that this is dependent on the amount of Right of Way (ROW) acquisition and utility relocation involved for a project, and that complex projects with significant ROW and utility needs can experience extended durations and create problems for DB projects. In comparing the amount of change orders between delivery methods, PennDOT noted for the RBR project that they issued owner-directed change orders adjusting the project scope, but generally experienced fewer contractor-initiated claims compared to a typical DBB project.

PennDOT has experienced a reduction in cost overruns and change orders using DB compared to DBB. However, PennDOT receives about the same number of claims on both types of delivery methods, although the nature of the claims in DB is different than DBB. The most substantial DB claims have involved delays in ROW acquisition and utility relocations.

Environmental Experience

On DB projects, PennDOT noted that they typically complete the NEPA process with the completion of conceptual plans, and thus have not experienced any noticeable difference in environmental clearance times between DB and DBB projects.

For the RBR P3 project, using the USDOT Special Experimental Project (SEP)-15 program, PennDOT executed an early development agreement in 2014 that, under PennDOT’s supervision, transferred the responsibility to obtain environmental clearances and waterway permits to the Developer. 23 CFR 636 generally prohibits a private contractor from preparing NEPA clearance for a project, so the premise of this experiment is that there would be efficiencies gained in the time required and cost to obtain NEPA clearance. Further, the goal was to employ these efficiencies and experimental changes to the NEPA process without compromising the quality or integrity of the process or documentation. Using a series of similar projects for which NEPA was completed by PennDOT under the traditional NEPA process as a baseline for comparison, PennDOT determined that the experimental process resulted in cost savings of approximately $1.2 million for the 558 bridges and the overall project was completed 2.5 months quicker.

PennDOT explained some of the key lessons learned both through project management and a NEPA lens. Examples included:

* Ensure the Developer fully understands the importance of public outreach and coordination with public/governmental stakeholders;
* A template/report format to streamline the process of preparing individual Section 4(f) documents can help save time and money so long as all requirements of NEPA are considered for the specific project and all project-specific factors are considered for each evaluation; and
* Establish a specific review period time to maintain coordination with outside agencies and prevent prolonged back and forth review periods.

PennDOT concluded by providing key project selection factors for DB. Key factors include:

* A complex scope of work;
* Where expedited completion benefits the project;
* Where there is a need for ATCs and innovative solutions; and
* ROW requirements and utility coordination are minimal or not extensive.

Key selection factors to use the P3 delivery method include:

* The need for private financing upfront;
* The ability to address serious problems sooner;
* Using an availability payment structure to pay for the work; and
* Shifting certain operations and maintenance responsibilities to a private partner.

**MnDOT Peter Davich**

MnDOT has a 25-year history with AD, first using DB in 1996 and Construction-Manager/General Contractor (CM/GC) in 2013. The department has procured 55 AD projects thus far, averaging 4-5 per year. The DB staff at MnDOT fill multiple functions from program development to project selection. They are assisted by a programmatic GEC consultant, which supports RFP writing, preliminary design, and project management support, among other duties.

For DB projects, MnDOT uses either low-bid or best-value evaluation. In low-bid procurement, MnDOT only considers a bidder’s cost. MnDOT finds that low bid is most appropriate for projects with low complexity and risk. Best-value DB, usually reserved for more complex projects, looks at other evaluation factors such as completion speed, maintainability, and environmental impacts. The technical score in best value comprises 20-40% of the proposal score. MnDOT uses a form of best value procurement for approximately 70% of procurements and low bid for the remainder. MnDOT believes that best value is the highest use of DB, but that low bid is appropriate for some low-complexity projects.

MnDOT provided key lessons of the NEPA process under AD. Examples include:

* Keep the NEPA process similar to DBB without involving the DB contractor;
* Try to “clear” corridors early to allow DB teams to use all ROW;
  + If not possible, use maps (not words) to communicate which areas are off limits
  + Keep local NEPA/FHWA staff informed; and
* Noise commitments can be restrictive for profile changes.

MnDOT finds DB can be powerful for solving environmental issues, including by having a contractor put together a robust communications plan to work with local governments on schedule coordination.

MnDOT discussed the Crookston Slope project to highlight the department’s successful use of DB to obtain diverse, innovative solutions to a complex problem. Years of investigation data showed a worsening, deep-seated slope failure off U.S. Route 2 in Crookston with active slope “creep” closer to the road. The area experienced historic slides in 1934 and 2008. While the site was well-bounded with few third-party issues, the ideal solution remained unknown, offering significant opportunity to gather innovative concepts from design-builders. MnDOT used DB to procure a contractor to stabilize the slope. Using DB allowed the agency to receive competing designs and multiple concepts from the industry to solve the problem. Four design-build teams submitted proposals, each offering their own innovative solution to stabilize the slope. The team that proposed installing shear walls was chosen and offered a proposal price 13% lower than MnDOT’s engineer’s estimate. MnDOT considers the Crookston slope project to be a prime example of how DB can benefit DOT highway projects.

**UDOT Phil Ellsworth and Brandon Weston**

Phil Ellsworth first spoke on behalf of UDOT. He has been an integrated consultant team member of UDOT’s Alternative Delivery group for the last 14 years.

UDOT has used DB since 1997. So far, they have procured 58 DB projects at a total value of $7.2 billion. The department started using CM/GC in 2006 and have since procured 41 CM/GC projects that total $1.4 billion. UDOT started using Progressive Design-Build (PDB) in 2019, with two projects procured so far totaling $750 million.

UDOT finds having a variety of AD methods provides the flexibility to manage projects based on unique challenges. Each AD method has contributed to UDOT’s knowledge in a variety of engineering and construction solutions with its own set of tools to help UDOT manage project and program risk.

In deciding which AD method to use, UDOT considers the risk profile of the project, and how a specific AD method can benefit management of the project. UDOT finds the following project attributes favorable to using DB, and a reason they chose DB for the I-15 Tech Corridor project, one of UDOT’s major recent DB projects:

* Complexity – DB can attract numerous experts to provide diverse solutions to solve a complex problem with resources a DOT might not otherwise have;
* Innovation – DB can address unique challenges through ATCs proposed during the procurement stage that could offer both time savings and lower costs that a DOT could not achieve on its own. UDOT noted that many ATCs are often smaller in size but greater in volume instead of major changes to a project; and
* Schedule – UDOT considers time savings a secondary factor but can contribute to the decision to choose DB when combined with other factors.

UDOT then shared key lessons learned in using DB:

* Learning curve for DOT staff – Staff should be trained in how the relationship between a DOT and the Design-Builder differs in terms of control and decision making compared to a DBB procurement;
* Flexible approach to risk allocation – DOTs should be strategic to allocate risk as each project is unique. DOTs should only allocate risk where appropriate and not place itself in a position to pay for allocating too much risk to the Design-Builder;
* Stipends to unsuccessful proposers should be considered as an investment leading to innovation and other ideas necessary for the project to succeed; and
* Use performance-based requirements instead of prescriptive requirements where possible to give the Design-Builder flexibility to innovate.

Environmental Experience

UDOT noted CFR regulations allow DOTs to select the Design-Builder prior to completing the environmental clearance process. However, UDOT notes that DOTs may consider not advertising the RFP until all environmental permitting and processes are completed, which would ensure the Design-Builder would only be responsible for environmental re-evaluations if necessary.

Utah is classified as a NEPA Assignment State, which means Utah has been delegated responsibility for environmental clearance on transportation projects from FHWA. Even with this status, Utah has not experienced a significant difference in terms of NEPA compliance and other requirements between DB and DBB. Since DB is usually used for larger, more complex projects, DB projects tend to follow a more robust NEPA analysis with mitigation commitments incorporated into the RFP.

UDOT lastly noted that the Design-Builder is responsible for the work to obtain additional NEPA compliance and permitting for any accepted ATC. However, UDOT retains the authority over NEPA clearance for UDOT projects and will review and, if acceptable, approve any additional NEPA compliance actions, including NEPA re-evaluations.

**Q&A**

* For Gary PA: Can you quantify change orders on DB projects?
  + Answer: 2-3% on DB price, which is normal.
* For Gary: Was the Section 106 determination kept with DOT?
  + Answer: Yes, it was.
* For Gary: For wetland permitting, were you allowed to group permits for all the bridges? Or were they for each individual bridge?
  + Answer: Each bridge needed its own permits.
* For Gary: Where we can find the Section 4(f) template and Section 106 docs? Where are they?
  + Answer: Gary to provide.
* For Gary: Did PennDOT utilize a Dispute Resolution Panel to resolve to resolve disputes for the RBR project?
  + Answer: Yes – only a few disputes went to the panel. The key to success is having a determined person to work through all disputes. I recommend keeping the panel abreast of project progress.
* For Gary: What type of payment package was the RBR project?
  + Answer: Availability payments were used.
* For Mark: Do you know if FHWA is considering changes to 23 CFR 636.109 based on PennDOT's experience with the SEP-15 process?
  + Answer: Mark said PennDOT sent their recommendation to FHWA.
* The new guidance for use of the NEVI funding requires all NEPA review and other environmental work be done prior to obligation of funds AND the project must be delivered within 6 months. Can any of the presenters speak to how your agency is preparing for that?
  + MnDOT: As far as NEVI funding goes, we have almost always completed NEPA documentation before advertisement and almost all of our projects are delivered (if not closed out) within 6 months of that advertisement, so I have hopes that we will not need to change anything major.
  + UDOT: Still trying to understand their own options on this. Not much to offer here.
* How do you manage contamination encountered during construction and does FHWA participate in cleanup costs?
  + MnDOT: Regarding contamination, we do our Phase 1-2 investigations 'as usual'. We then tell the contractor that they are responsible to dispose of contamination found in areas where we expected it (Known) and MnDOT (usually not the FHWA) will grant a change order for contamination found in areas where it wasn't expected (Unknown). We find it's important to include a map of Known vs Unknown areas to clarify the risk allocation.
* For Peter: Does MnDOT retain RCRA liability for any hazardous waste?
  + Answer: I'm not fully expert on RCRA, but yes, we try to remove hazardous wastes before the project whenever possible. If not, we usually have an independent consultant who disposes of the wastes once uncovered by the contractor. I believe there are some specific wastes we would let the contractor dispose of themselves, but I'm not expert enough to clarify further.
* MnDOT General Point: There was an earlier question about dispute resolution boards. I believe everyone uses those in some fashion: the key is setting them up on a project before there is a problem and then using personnel (on both sides) that truly aren't involved with the project so that the conversation isn't "polluted" with opinions before it starts.
* UDOT uses a DRB but it does not come into play very often because the DRB is only implemented at the end of a 5 stage escalation ladder. The goal with the ladder is to resolve disputes at the lowest level possible. UDOT used to use a DRB established at the beginning of a DB project, but the escalation ladder approach has been a much more successful model.
  + MnDOT: I agree, there should be processes in place to resolve issues before the DRB, certainly.