

Alternative Technical Concepts (ATCs) Program Techbrief



Managing “Equal to/Better Than” Criteria in ATCs vs. Standards

INTRODUCTION

The Federal Highway Administration (FHWA) defines an alternative technical concept (ATC) as, “a request by a proposer to modify a contract requirement, specifically for that proposer’s use in gaining competitive benefit during the bidding or proposal process... [and] must provide a solution that is equal to or better than the owner’s base design requirements in the invitation for bid (IFB for D-B-B) or request for proposal (RFP for D-B) document.” (FHWA 2012; italics added). In theory, the concept of equal to or better than would seem to be straightforward, but in practice, there are a number of important issues that must be resolved before a public transportation agency can finalize its own definition for how ATCs will be evaluated within the context formed by local statutes, regulations, and policies.

The purpose of this TechBrief is twofold. First, it will summarize the salient issues found through the research conducted for National Cooperative Highway Research Program (NCHRP) Synthesis 455, Alternative Technical Concepts for Contract Delivery Method (Gransberg et al. 2014). Second, it will furnish examples from several State departments of transportation (DOTs) that have successfully implemented ATCs in both design-bid-build (D-B-B) and design-build (D-B) projects and discuss the rationale behind each agency’s equal to or better than definition.

A report produced by the Washington State DOT (WSDOT) stated that, “the ATC process is founded on the concept that an ATC must

be equal to or better than the original or base project concept. This ensures the ‘level playing field’ that is essential for competitive bidding without the need for a second, unaltered base proposal. The ATC process also allows a certain level of control by the agency over potential risks contemplated by proposers” (Carpenter 2012). Thus, the two controlling philosophies pertaining to the equal to or better than concept are colloquially termed as follows:

- “Apples to apples” comparison.
- “Level playing field” competition.

APPLES TO APPLES

The first use of ATCs was in conjunction with D-B projects that were delivered under the FHWA Special Experimental Program 14 (SEP-14) (FHWA 2006). At the time, Federal statute 23CFRS 636.209(b) required agencies to “allow proposers to submit alternative technical concepts in their proposals as long as these alternative concepts do not conflict with criteria agreed upon in the environmental decision making process. Alternative technical concept proposals may supplement, but not substitute for base proposals that respond to the RFP requirements.” Thus, to ensure the “apples to apples” comparison, D-B ATCs were to be measured against a baseline design scope of work, and to be compliant with the statute, proposers will submit a proposal for the baseline design as well as the design as modified by approved ATCs. The additional expense for preparing a baseline design that ultimately may not be used chilled the willingness

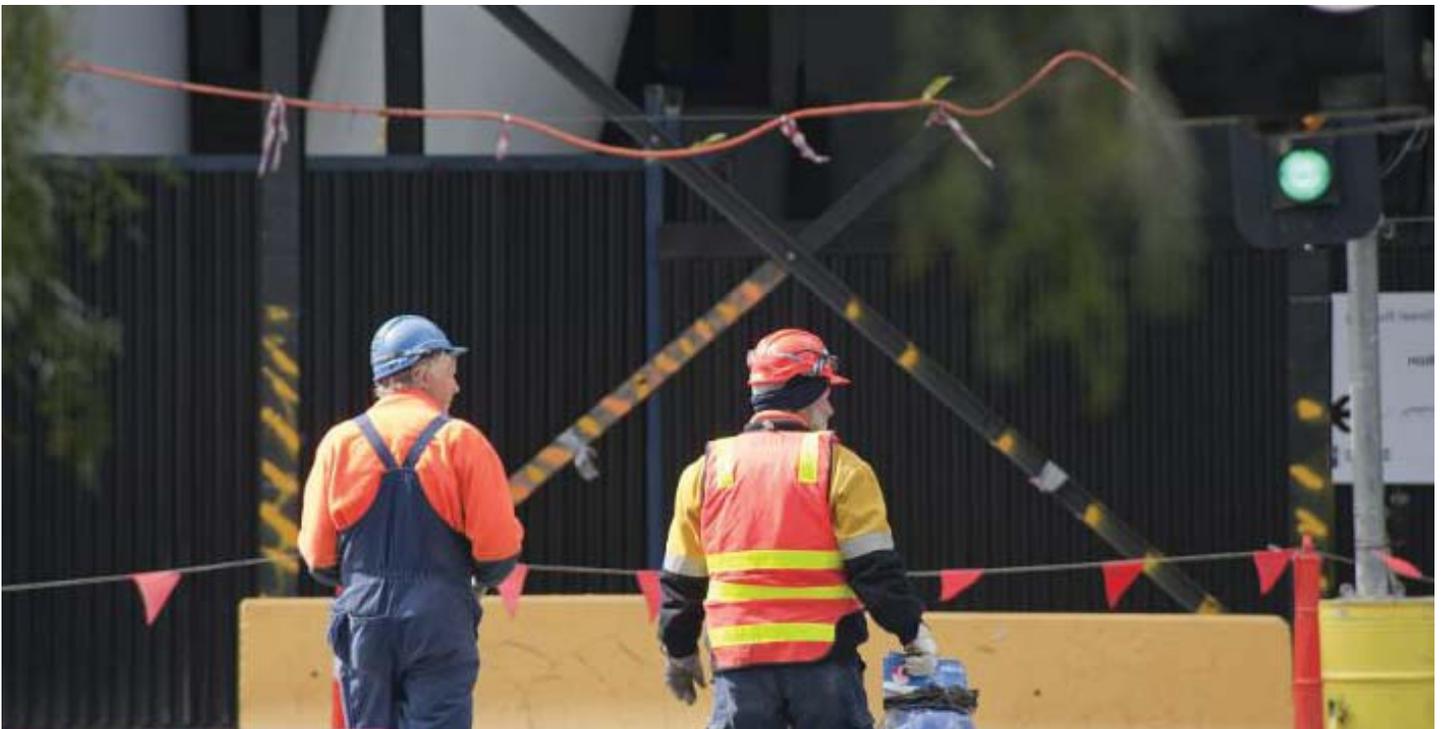
of industry to put forth ATCs. The result was that a number of DOTs sought programmatic waivers of the baseline design rule to “avoid unnecessary costs and diversion of resources required for proposers to advance a base design that will ultimately not be used” (Carpenter 2012). As these became commonplace, FHWA recognized the rules impact on the D-B process and revised the rule in 2014 to permit agencies to allow proposals to be based solely on a design that was modified by approved ATCs (Federal Register 2014). Thus, it was possible for competing design-builders to be providing price proposals on different designs. When an agency approves an ATC, it is functionally changing the RFP requirements for the exclusive benefit of a given competitor. The issue brings into question whether an “apples to apples” comparison was conducted. The issue typically has been resolved by setting equal to or better than standards for all ATCs. One common approach is “a requirement that ATCs must be the original requirements of the contract documents included in the procurement package, and that an ATC cannot produce cost savings by merely reducing quantities” (Papernik and Farkas 2009). The WSDOT put it like this:

An ATC must be deemed, in WSDOT’s sole discretion, to provide a project that is “equal or better” on an overall basis than the project would be without the proposed ATC. Concepts that simply delete scope, lower performance requirements, lower standards,

or reduce contract requirements are not acceptable as ATC’s. Any question that may arise regarding conducting an “apples to apples” comparison of Proposals is resolved by requiring the ATC to meet the “equal or better” standard. (WSDOT 2010)

LEVEL PLAYING FIELD

Given the resolution of the comparison issue, making sure that there is a level playing field for all interested competitors becomes the next issue. The hallmark of ATC usage is the principle of confidential exchange of information between the agency and a specific contractor. However, the traditional approach to guaranteeing a level playing field has been to make all communications between the owner and competing contractors public. The result of this approach is a situation where a competitor may be reluctant to ask a question or seek a clarification lest it loses its competitive edge due to making its competitors aware of the topic in question. In this case, the request for information is not likely to be submitted, which forces the contractor to either assume the most conservative interpretation for bidding purposes or include a contingency to cover the possibility that a less conservative interpretation will turn out to be in error (Ward and Chapman 2003). Confidential one-on-one ATC review meetings provide a setting for obtaining clarifications from the owner without revealing an attractive



solution to the competition. Such meetings also allow the owner to gauge the way contract risks are being viewed by the industry.

Thus, to maintain a level playing field throughout the procurement, the agency must determine the source of the ATC proposal and determine whether information brought to the agency's attention warrants an amendment to the solicitation. This involves deciding whether the ATC's origin is an error, omission, or ambiguity in the solicitation. The Florida DOT confirms this assertion in its D-B manual when it states, "The Department reserves the right to *disclose* to all Design/Build Firms *any issues raised during the ATC meetings, except* to the extent that FDOT determines, in its sole discretion, such disclosure would reveal *confidential or proprietary information* of the ATC" (FDOT 2011; italics added). Therefore, the rule of thumb might be that if a proposed change to the technical scope is the result of a design error, or omission then the solicitation must be amended and all offerors must be given the chance to repair their proposals in accordance with the correction to the solicitation. In doing so, the agency has met its statutory responsibility to maintain a level playing field.

EXAMPLES OF ATC POLICY AND PROGRAMS

NCHRP Synthesis 455 included a content analysis of ATC clauses contained in project procurement documents from 62 ATC projects from 22 State DOTs and 2 Federal agencies. The researchers found that Georgia, Michigan, Minnesota, Missouri, New York, Utah, and Washington DOTs require that a proposed ATC submittal must include information that demonstrates that it is *equal to or better* than the expected performance of the changed feature of work, and also that the proposed change must not comply with the criteria contained in the RFP scope of work. In other words, if the proposed change could have been included in the proposed design and found to be in compliance with the published performance criteria, then it is not an ATC.

Maryland permits proposed ATCs to be submitted in advance of formal submission to determine if the technical concepts are consistent with the requirements of the RFP. Missouri has a similar approach with D-B-B ATCs and solicits "conceptual" ATCs, which are given an expedited review to determine whether the concept is functionally approvable before the contractor invests the time and money necessary to develop a formal ATC submittal.

Utah explicitly states that no scope reductions resulting in cost savings are allowed to be submitted as ATCs. The Michigan DOT allows ATCs on almost any item on D-B projects (typically anything related to the pavement design cannot be an ATC) and defines "better value in terms of cost, time, traffic impacts, aesthetics, etc." Minnesota allows more latitude than most by also permitting the contractor to propose ATCs that impact project permits and deviate from solicitation design requirements.

The solicitation document content analysis found that the most common factor was that "ATCs must be 'equal to or better than' the original requirements of the contract documents included in the procurement package" (Papernik and Farkas 2009). The second ATC-related factor was the issue of deviations from cited design criteria and other documents. There were two variations found in the synthesis research. Some agencies merely specify that any deviations from published criteria were not authorized and considered nonresponsive. Other agencies provide for an approval process for obtaining a deviation from project design criteria. A typical example is one contained in Missouri DOT documents for D-B-B ATCs:

ATC's requiring new Design Exceptions must receive both MoDOT and FHWA approval. Any new design exceptions must be offset by elimination or reduction of existing design exceptions elsewhere in the project. Any combination of existing and new design exceptions must be equal to or better than the existing design as determined by MoDOT. (MoDOT 2010)

The Maryland State Highway Administration expanded its definition to allow ATCs that not only deviated from design criteria but also project requirements using the following language:

The Administration did not approve any ATC that entailed a deviation from the requirements of the RFP, unless the Administration determined, in its sole discretion, that the proposed end product based on the deviation was equal to or better than the end product absent the deviation. (Peters 2011; italics added)

More commonly, agencies described those elements of the baseline design that could not be changed. The following example of a typical clause comes from the Missouri DOT's Mississippi River Bridge (MRB) I-70 Interchange project in St. Louis:

The following geometric design components are off-limits to change due to an ATC:

- a. The grade and alignment of the tie-in of the eastbound/westbound ramps (parkways) at Cass Avenue shall not change from as shown on contract documents.
- b. The grade and alignment of the tie-in of the eastbound and westbound ramps at the Missouri Approach to the MRB shall not change as shown on the contract documents.
- c. Unless it is a weekend closure due to a bridge demolition, at least two lanes of traffic in each direction on Interstate 70, 55 and 44 throughout the project area shall be maintained at all times.
- d. Any change shall be compatible with the Phase II full-build interchange. (MoDOT 2010)

EXAMPLE DOT ATC PROGRAM INFORMATION

The Washington and Missouri DOTs were selected to provide examples of the *equal to or better than* requirements. Washington provides an example for D-B project delivery, and Missouri furnishes an example of how this principle is maintained in a D-B-B project.

WSDOT

The following paragraphs are excerpts of the WSDOT D-B Manual (2012) and describe the agency's approach to satisfying *equal to or better than* requirements.

Incomplete ATC submittal packages may be returned to the Proposer without review or comment. WSDOT may, in its sole discretion, request additional information regarding a proposed ATC. WSDOT may, in its sole discretion, deny any ATC. ATCs that do not meet the "equal or better" standard shall be rejected. ATC's that would require excessive time or cost for WSDOT to review, evaluate, or investigate will not be considered. WSDOT will not consider contract cost savings in the "equal or better" determination. To the extent permitted by law, all discussions with Proposers regarding ATC's and information contained in an ATC submittal will remain confidential. Due to the confidential nature of ATC's and the need to respond in a timely manner, the WSDOT Project Manager shall minimize the number of staff involved in the ATC review process. When technical issues

and questions arise that are outside the Project team's expertise, HQ Construction should be consulted. All staff that are to be involved in the review shall sign a confidentiality agreement before beginning the review.

WSDOT shall refrain at all times during the ATC submittal review process, including one-on-one meetings, from indicating in any manner to a Proposer that a particular ATC would favorably or unfavorably affect the Proposers technical score. To do so can not only short circuit the Proposal evaluation process, but it can also interject the owner's bias into the Proposal process. When measured in terms of the competitive process, this could provide advantages to a single Proposer to the detriment of the remaining Proposers. The Proposer should be advised that if approved, the ATC will be evaluated in accordance with the ITP. Design deviations, as defined in the WSDOT Design Manual Section 330.03, are not categorically prohibited from consideration in an ATC. Any ATC must be, in total, "equal to or better" than what was originally required. In addition, design deviations that are approved for inclusion into an ATC, to the extent provided by law, shall not be disclosed to other Proposers until such time as the contract is executed and WSDOT takes full ownership and control of the unsuccessful Proposal which includes the design deviation. Any question that may arise regarding conducting an "apples to apples" comparison of Proposals is resolved by requiring the ATC to meet the "equal or better" standard.

Matters that are specifically not eligible for approval as an ATC include the following:

1. *Concepts that are not deemed, in WSDOT's sole discretion, to meet the "equal or better" criteria. When making this determination, consider the Project as a whole. Ask the following question: "Is the Project with this ATC 'equal or better' than the Project without the ATC?"*
2. *Any change that would require excessive time or cost for WSDOT review, evaluation, or investigation. WSDOT reserves the right in its sole discretion to reject any ATC. (WSDOT 2010)*

It should be noted that WSDOT also considers future ownership costs in the "equal or better" evaluation. For example, an ATC that proposes a concrete structure that would not require future painting efforts would be included in the



“equal or better” evaluation. Thus, it is possible for an that ATC does not save money or time but have other, secondary benefits, such as future maintenance, lower community impact, better usability, etc., to be found to be approved. The WSDOT ATC clause also specifically prohibits ATCs that seek to take advantage of errors or ambiguities in the RFP.

MODOT

The following paragraphs are excerpts of the Missouri DOT D-B-B Manual (2012) and describe the agency’s approach to satisfying *equal to or better* than requirements.

The ATC is equal to or better than the original design proposal. The ATC shall not cause a decrease in engineering standards for any safety related items, including but not limited to: reduction in shoulder widths, reduction in lane widths, decrease in design speed, decrease in clear zone, or reduced traffic control performance, etc. To be considered for approval, all safety related elements of the ATC must meet or exceed the MoDOT furnished base design. Evaluation of ATC proposals may, at MoDOT’s discretion, take into account the overall project design including increases and decreases in safety related items throughout the project. For example a decrease in engineering standard may be allowed in one area if, in MoDOT’s and FHWA’s sole discretion,

it is determined that the overall safety of the project, as compared to the original MoDOT furnished base design, is increased by increasing the engineering standard of other parts of the project. ATCs will be evaluated on a pass/fail basis. ATCs that meet the minimum requirements will pass and be considered for bid. ATCs that do not meet the minimum requirements will fail and not be considered for bid. ATCs will be evaluated using the following criteria. If any of the following criteria are not met, the ATC request fails.

- (a) The ATC meets or exceeds the minimum requirements and engineering standards of the general conditions.*
- (b) The ATC does not adversely affect the overall completion date.*
- (c) The ATC does not adversely affect the long term maintenance of the project.*
- (d) The ATC re-design costs to the Commission; do not adversely affect the cost of the overall project. The Commission will determine the re-design cost.*
- (e) The ATC is consistent with the overall project goals, which include but are not limited to the following: Deliver the project on budget, Deliver the project on time. Minimize public impact by keeping regional and local traffic flowing efficiently*



and safely through the impacted area. Incorporate innovative design including faster/better construction techniques and inspection. Coordinate with all partners and the local community resulting in a project that is viewed as successful. Demonstrate quality construction, encourage green techniques and provide a long lasting facility that complies to ADA requirements.

(f) The ATC is equal to or better than the original design proposal. No decrease in engineering standard from the original design for any safety related item will be allowed, including but not limited to: narrower shoulders, narrower lane width, decreased sight distance, sharper horizontal curves, decreased design speed, decreased clear zone, reduction in clear distance to piers and/or abutments, vertical clearance, or reduced traffic control performance, etc. To be considered for approval, all safety related elements of the ATC must meet or exceed the MoDOT design. New design exceptions will be considered if they meet the requirements of Section 3.1.2.

(g) Direct or secondary cost and/or delay related to utility conflicts.

(h) Each contractor will only be allowed to submit three (3) ATCs per job.

(MoDOT 2011)

SUMMARY

While there are numerous ways to make an equal to or better than decision, all approaches share the same two notions. First, all competitors must be given the chance to propose ATCs in a confidential manner and must be confident that their ideas will not be disclosed to the competition. Second, equal to or better than is not merely concepts to purely reduce cost. An ATC can generate benefits that are difficult to quantify such as reduced environmental impact or decreased future maintenance requirements. To truly be *equal to or better than*, a proposed ATC must be a substantive change to the project scope of work that enhances a given feature of work in a manner that results in net benefits to the project that are determined to be at least as good as those found in the base design contained in the solicitation.

REFERENCES

- Carpenter, J. "Annual Report on Alternate Technical Concept Programmatic Waiver, SEP-14 Progress Report," WSDOT, Olympia, WA, January 31, 2012, 6pp.
- Federal Highway Administration (FHWA). "Design-Build Effectiveness Study," Final Report to Congress as Required by TEA-21, 2006, [Online] Available: <http://www.fhwa.dot.gov/reports/designbuild/designbuild0.htm> (August 30, 2014).
- Federal Highway Administration (FHWA), "Alternative Technical Concepts," Unpublished Presentation, Every Day Counts 2, US Department of Transportation, 2012, On-line, Available: <http://www.fhwa.dot.gov/accelerating/presentations/atc/> [April 21, 2013].
- Federal Register Rules and Regulations, Vol. 79, No. 29, February 12, 2014 p. 8263
- Florida Department of Transportation (FDOT). Alternative Technical Concepts Reviews, Design-Build RFP Documents, FDOT, Tallahassee, Florida, 2011 pp. 1-3. <http://www.dot.state.fl.us/construction/designbuild/DBDocuments/RFPDocs/AlternativeTechnicalConcepts.pdf>
- Gransberg D.D., M.C. Loulakis, and G.M. Gad, Alternative Technical Concepts for Contract Delivery Methods, NCHRP Synthesis 455, Transportation Research Board, National Academies, Washington, D.C. 2014, ISBN 978-0-309-27118-9, 119pp. Available at: <http://www.trb.org/main/blurbs/170465.aspx>.
- Missouri DOT (MoDOT). Alternate Technical Concept (ATC) Process for the MRB Missouri I-70 Interchange Project J6U1086," August 27, 2010. On-line: Available at: <http://www.newriverbridge.org/documents/MRBMolInterchangeATCConcept9-27-10.pdf>
- Missouri Department of Transportation. (MoDOT). The Bridge Improvement Project Request for Proposals, Instructions to Proposers: Design Build Contract Draft - October 29, 2008 32pp.
- Missouri DOT (MoDOT). "Hurricane Deck Bridge Replacement Project, ATC Meeting" February 10, 2011. On-line: Available at: http://www.modot.org/central/major_projects/camden.htm
- Papernik, B.G. and Farkas, D.J., "Using Alternative Technical Concepts to Improve Design-Build and PPP Procurements," Nossamaan E-Alerts, <http://www.nossaman.com/using-alternative-technical-concepts-improve-designbuild-ppp> 2009, 4pp.
- Peters, M.B., "Intercounty Connector (ICC) Design-Build Program: Alternative Technical Concepts," SEP-14 Summary Report, Maryland State Highway Administration, December 4, 2008, p.1-8.
- Washington State Department of Transportation (WSDOT), Design-Build Project Delivery Guidance Statement: Alternative Technical Concepts, Office of the State Construction Engineer, WSDOT, Olympia, Washington, April 10, 2010, 15pp.
- Ward, S., and Chapman, C. "Transforming project risk management into project uncertainty management." International Journal of Project Management 21.2, 2003, 97-105.

Support and Available Tools

FHWA's ATCs website, including links to State DOT ATC websites: <http://www.fhwa.dot.gov/construction/cqit/atc.cfm>. Contact your FHWA Division Office: <http://www.fhwa.dot.gov/about/field.cfm>.

For additional information
on the national use of
ATCs, contact:

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