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POLICIES AND PROCEDURES FOR SUCCESSFULLY IMPLEMENTING ALTERNATIVE TECHNICAL CONCEPTS

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POLICIES AND PROCEDURES FOR SUCCESSFULLY IMPLEMENTING ALTERNATIVE TECHNICAL CONCEPTS

ABSTRACT

Transportation agencies are increasingly allowing design-builders and construction contractors to incorporate alternative technical concepts (ATCs) in their proposals for highway projects. The ATC approach allows proposers to suggest modifications to a contract requirement that would result in the project being equal to or better than the design portrayed in the solicitation. This paper focuses at investigating ATCs' procurement policies and pre-submittal procedures currently followed by state transportation agencies to implement ATCs for transportation projects. The paper reports the results of a survey of state departments of transportation (DOTs) which generated responses from 42 US DOTs. These are compared with the content analysis of DOT solicitation documents of 65 different ATC projects in 24 DOTs. Results of the study show that while ATC usage is most common in design-build projects, ATCs have been successful implemented in nearly types of PDMs. It was seen how incorporating ATCs in the procurement process creates a mechanism to gain clarification of solicitation documents in a confidential manner. The highest factors in terms of success of ATC procurement process is the ability to safeguard ATCs containing proprietary content and guarantee ATC confidentiality. During the proposal pre-submittal stage, the agency will need to determine the procedural issues involved in confidential meetings and the confidentiality of pre-proposal communications.

INTRODUCTION

“There is an emerging view in the construction industry that better performance or better value for money can be achieved by integrating teamwork for planning, design, and construction of projects” (1, italics added). The term “integration” has become fashionable as of late in the design and construction industries (2, 3, 4, 5). However, the definition of integration process remains fluid. Integration is defined by the Oxford Dictionary (6) as “Bring into equal participation in; give equal consideration to.” ‘To give equal consideration’ to the parties in a construction contract requires the construction procurement process to be altered and shifted to one where the construction contractor is not permitted to make input to the design process to one where it has equal opportunity to provide recommendations to the proposed design based on its means and methods to make the project more constructable (7).

Currently the highway industry uses design-build (DB) and construction manager/general contractor (CMGC) project delivery to integrate design and construction. Whereas, traditional low bid, design-bid-build (DBB) contracts are considered as not integrated “by definition.” The Missouri Department of Transportation (MoDOT) changed that description when it chose to include alternative technical concepts (ATCs) on its DBB projects. In doing so, MoDOT proved that involving the contractor before award to achieve integrated project delivery is possible on traditional low-bid highway projects too. The shift allowed the agency to accrue verifiable time and cost savings, while enjoying the support of its local design and construction industry partners. As one Missouri contractor put it: “we elected to pursue ATCs because we felt we could derive a solution that would be more economical for us to build than the baseline design.” (8).

The Federal Highway Administration’s (FHWA) defines an 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 DBB) or request for proposal (RFP for DB) document.” (9). ATCs provide a means to evaluate contractor design input prior to the award of a DBB, CMGC, and DB contract. “In the case of ATCs, the state allows a contractor to submit ideas for innovative concepts on projects out for bid” (7), and in the process gives the contractor equal consideration.

FHWA Every Day Counts (EDC) program seeks to identify and deploy innovation aimed at *“shortening project delivery, enhancing the safety of our roadways, and protecting the environment... it’s imperative we pursue better, faster, and smarter ways of doing business”* (10 emphasis added). Thus, “appropriate procurement strategies are needed to help achieve optimal solutions in terms of cost, time and quality.” (11). Soliciting ATCs during the pre-award process is one way “to yield innovative solutions for thorny design and construction problems on a wide range of projects.” (8, 12, 13, 14). ATCs are a *smarter way of doing business* by assembling the collective experience and innovation of all project stakeholders to bear for a specific project. Regardless of the project type, selecting an alternative delivery method that permits the contractor to make input to the design process, such as ATCs, provides the owner with a number of benefits (15).

ATCs have been a part of DOT DB projects since 2001 (12). However, the momentum created by the EDC program (10) has raised interest in gaining more knowledge about ATCs and their employment. Also, “MAP-21,” the Moving Ahead for Progress in the 21st Century Act (P.L. 112-141) Section 1304, which reduced the state match for federal-aid funded projects if ATCs are used, generated additional interest among DOTs that have been resistant to

implementing non-traditional PDMs (16). Previous research (8, 12, 13, 14) shows that ATCs have the potential for accruing respectable cost savings, increased constructability, and schedule compression.

However, the construction and consulting industry have expressed concerns about protecting proprietary information and sensitive business practices when employing ATCs. To address this issue, agencies have developed guidelines and procedures upon which ATCs can be implemented to ensure fairness and privacy. *Accordingly, this paper focuses on providing a comprehensive investigation of the procurement policies and pre-submittal procedures currently followed by state transportation agencies (STAs) to implement ATCs for transportation projects.* Such information can be further used to identify effective practices for delivering ATC projects.

METHODOLOGY

The study relied on three independent sources of information: literature review, survey, and content analysis. The literature review sought to not only find the most current information but also historical information so that the change, if any, over time in ATC practices could be mapped and related to the current state-of-the-practice. The second line of information was generated from a web-based survey questionnaire. Surveys were chosen to identify STAs ATCs policies and pre-submittal procedures. The survey questionnaire design was developed using the principles prescribed by Oppenheim (17) and was based on the output of the literature review. The survey covered policies, pre-submittal, submittal, and evaluation procedures. However, this paper will focus on the policies and the pre-submittal procedures only.

The population for this study was the state DOTs. The sample for the study consisted of DOT employees working during the year 2013 who are involved in the procurement/innovative contract delivery process. The survey mode followed three waves in which non-respondents were sent two reminder emails during the first two weeks and were finally reminded by phone to participate after the third week. Surveys were emailed to 50 DOTs, American Samoa, and D.C. Of these 52, 42 DOT responded and all three Federal Lands Highway Divisions, corresponding to an 84% response rate.

The third line of information was the content analysis of DB solicitation documents. The literature reviews uncovered 28 DOT policy documents and reviewed 65 solicitation documents from 24 states. A formal content analysis was performed on both categories of documents using a protocol proposed by Neuendorf (18). Content analysis is used to develop “valid inferences from a message, written or visual, using a set of procedures” (17). This is achieved by first developing a set of standard categories into which words that appear in the DB procurement or policy document can be placed, then the method utilizes the frequency of their appearance as a means to infer the content of the document (18).

RESULTS & DISCUSSION

Based on the literature review, the survey, and content analysis results, this section reports the (1) STAs procurement policies and (2) pre-submittal procedural issues currently followed by STAs to implement ATCs.

ATC State Policies

FIGURE 1 shows the use of ATC as a map in different states based on the survey response and the ATC document content analysis. As for the frequency of ATC projects in different DOTs, the survey asked the respondents that used ATCs to indicate how many ATC projects their agency

had each year. Fifteen DOTs (out of 21) deliver from one to five projects with ATCs each year, Colorado, North Carolina, and Missouri deliver five to 10 ATC projects while Utah, Texas, and Florida deliver more than 10 ATC projects. Georgia reported no ATC projects at the time even though they are authorized to use ATCs. The survey also sought to find out how many ATC projects had been let in the past 12-month period. Thirteen respondents reported a range of one to five ATC projects, three respondents let between five to 10 projects and five DOTs let more than 10 projects in the past year. Of these projects, only MoDOT let a DBB project with ATCs. Most of the others were DB projects with Michigan, Utah, and Colorado having used ATCs in CMGC projects.

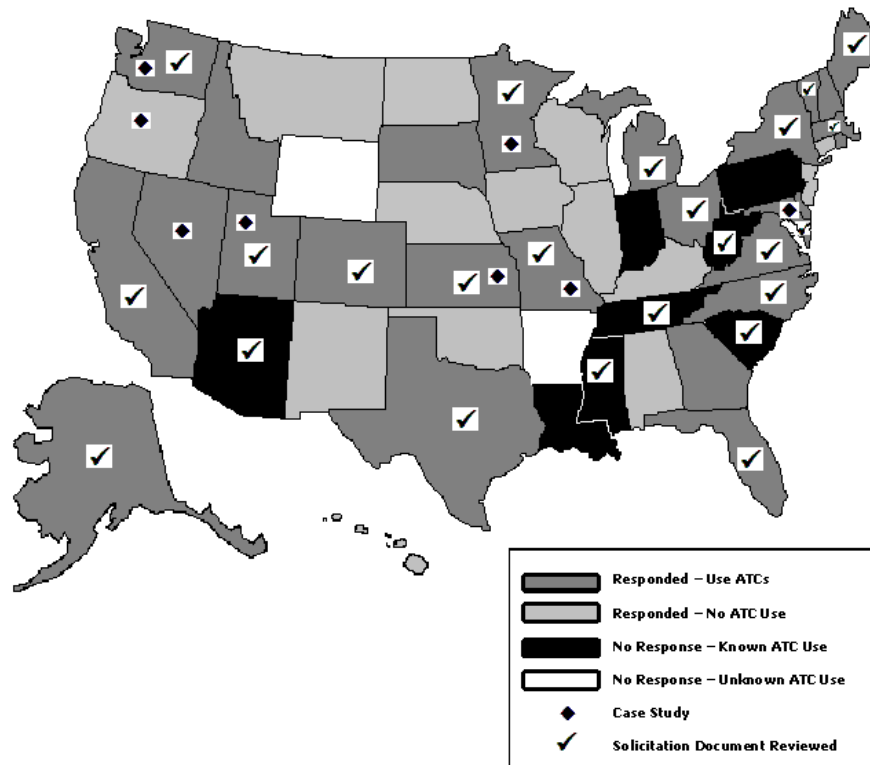


FIGURE 1 Survey Response and ATC Document Content Analysis Map.

Project Delivery Methods

The results of both the survey and the DOT policy document content analysis is shown in Table 1. A glance at the table may lead one to infer that including some form of ATC submittal process is an effective practice for DB projects. It also shows that with the exception of the MoDOT who uses DBB ATCs, ATC policy is largely confined to DB project delivery. The analysis also found that at least two DOTs (Connecticut and Montana) do not permit ATCs on their DB projects. Missouri does not provide a baseline design in its DB projects. Hence, the entire DB proposal evaluation process is essentially open to all alternative concepts. As a result, MoDOT does not provide policy for DB ATCs.

The survey specifically asked respondents to explain their agency's policy with regard to the use of ATCs in conjunction with DBB project delivery. Six of 16 respondents indicated that they could use ATCs on low bid projects, if they chose to do so. Seven DOTs reported that their laws were silent on the subject, but that they were reluctant to attempt their use without either a

supporting legal opinion or extensive coordination with the construction industry to ensure the change would not create issues during procurement. The survey also gathered information on the use of ATCs with various PDMs confirming the preference regarding ATC use on DB projects and extending the concept to a preference for ATC usage on best value award projects rather than low bid projects. The survey also found ATCs used on Design-Build-Finance and Public Private Partnership (P3) projects. The Michigan DOT mentioned they are piloting the use of ATCs on a DBB project in 2013.

TABLE 1 Policy Document Content Analysis Output

# Observations in documents	DBB	DB	CMGC	Remarks
Project delivery method	1	27	0	
Answer	Yes	No	Unknown	Remarks
ATCs allowed	25	3	0	
One-on-One meetings authorized	19	4	5	
Confidentiality guaranteed	20	1	7	Most included the verbiage: “to the greatest extent of existing laws” as a caveat to the confidentiality clause.
Approved ATCs required to be included in proposal	0	14	14	
Stipend Offered	25	3	0	Amounts cited ranged from 0.05% to 0.3%
Stipend Acceptance = DOT ownership of ATCs from unsuccessful offerors	25	3	0	
Right to amend solicitation document to correct errors reserved	14	0	14	
ATC approval = Amended solicitation	1	20	7	Statutory “apples to apples” requirement
Weeks	1	2	Unknown	Remarks
Required Response Time to ATC Submittals	2	7	19	Many indicated that a “timely” response was called for.

Figure 2 is adapted from an unpublished presentation made as part of the FHWA *EDC* program (19), and the ATC submittal period has been added to show the differences in each PDM. The striking difference in the figure is how early the agency gets ATC input when using CMGC project delivery. This is because the competing contractors can be evaluated on potential for adding innovative alternatives to a given project without the need for the agency to review and approve each ATC prior to making the selection of the winning contractor. In DBB, the baseline design is complete and must be altered to achieve benefits from an ATC. In DB, the baseline design has been established through the preliminary design done to define the DB project’s scope of work in the RFP. In this case, deviations from the baseline design and its associated criteria must be reviewed and approved before the DB contract can be awarded.

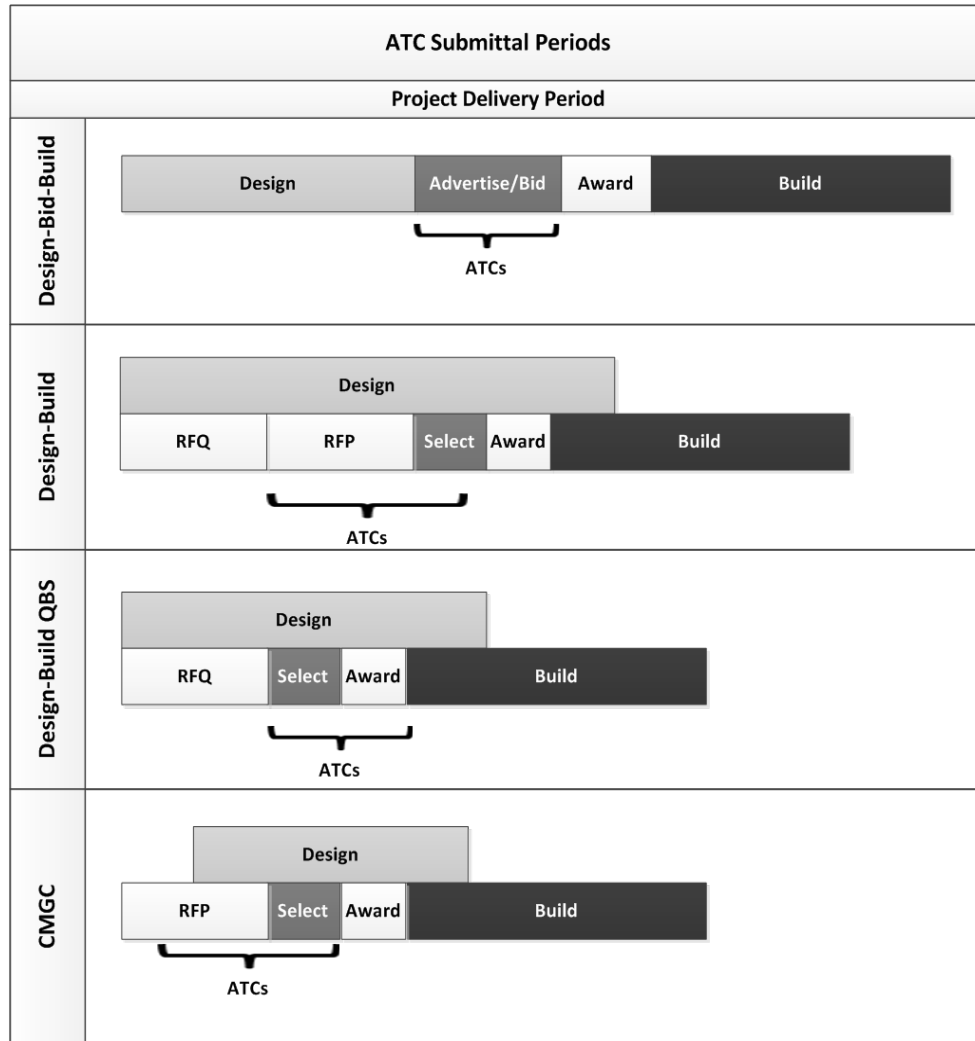


FIGURE 2 ATC Submittal Period in each PDM (adapted from 19).

Because CMGC and DB-QBS uses a two-step or two-part contract (i.e. preconstruction services followed by the actual construction contract), there is no need to conduct technical reviews of possible ATCs submitted during the CMGC selection process because there literally is no baseline design. As discussed in Gransberg (20), the CMGC contractor can work with the designer-of-record after preconstruction services award to fully develop its innovative technical concepts. The design progresses virtually without the need to lose expended baseline design effort if design criteria are changed to achieve ATC benefits. This leads to the conclusion that implementing ATCs on CMGC projects seems to be more cost effective than DBB or DB because the ATCs can be incorporated directly into the final design without the loss of resources expended on the baseline design.

ATC Submittal Policies

Regarding the DOT policies setting the process for receiving ATCs, there are two basic questions that agencies need to ask when reviewing or setting ATC submittal policies:

1. What proposed changes to a given solicitation constitute an ATC?

2. Do local statutes require the agency to amend its solicitation upon approving an ATC to permit all competitors the opportunity to bid the alternative or can confidentiality be promised?

The so-called “equal or better standard” was cited in virtually all ATC policy documents and by most DOTs responding to the survey. Again, the following WSDOT definition is typical:

“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... 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...” (21).

The requirement to specifically identify deviations from cited agency design standards contained in the previous quote was also common. In fact, a number of the documents indicated that a proposed ATC that completely conformed to prescribed criteria was not an ATC, as it could be responsively proposed without altering the solicitation. The results of the survey regarding individual definitions of changes that qualify as ATCs also showed that the most frequently stated factors were that the concept must generate a cost, time, or life cycle benefit to the agency and it does not comply with the existing criteria, specifications, etc. Georgia, Michigan, Minnesota, New York, Utah, Washington, and Maryland DOTs reported that the ATC must demonstrate that it is “equal to or better” in performance of the item's function in the project that is not already allowed by the scope of work. Maryland reported that ATCs may also be submitted to determine if technical concepts are consistent with the requirements of the RFP. Utah clarified that no scope reductions, resulting in cost savings are allowed to be submitted as ATCs.

Michigan DOT allows ATCs on almost any item on DB projects (typically anything related to the pavement design cannot be an ATC) and Michigan 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. Finally, a majority of the survey respondents indicated that they also permitted the use of ATCs to make changes to contract general and/or special provisions. Michigan DOT’s first DBB ATC project is an example of this policy, as it will limit ATCs to only maintenance of traffic (MOT) alternatives. Other possible examples would be a change to specified working hours or the waiver of a specific contract clause.

Taking the information found on this topic in the content analyses with the survey outcome regarding ATC definitions leads one to conclude that the fundamental definition of an ATC requires the agency to alter the baseline design and/or the baseline design criteria. This is because if no deviation is required, the concept can be found responsive if it were proposed as merely the given competitor’s preferred design approach.

ATC Pre-Submittal Procedures: Confidential Meetings

One of the most commonly implemented pre-submittal procedures in ATCs, as shown in Table 1 as well as in survey results are confidential one-on-one meetings, where competing contractors are allowed to present ideas for potential alternatives. This is also seen in the survey results where as the most mentioned policy/procedure changes reported in projects employing ATCs is the confidential one-on-one meetings. In the documents where the one-on-one meeting was not authorized, the competitors were generally required to submit a written ATC proposal for review and approval. In most cases, there was a deadline established for submission and nine

agencies prescribed either a one or two-week period for the owner's review and decision to be returned to the competitors. Most DOT policy documents provided for confidentiality of the outcome of the ATC review/approval process. The one that did not was Florida that contained a requirement to amend the solicitation to provide an "apples to apples" comparison as follows:

"After the ATC meetings, the Contracting Unit, along with the Project Manager, will update the RFP criteria or issue an Addendum, if the ATC deviates from the RFP and is approved by the Department (FHWA must approve such change as applicable). Approved Design Exceptions or Design Variances will require an update to the RFP" (22).

It is assumed that the above requirement is a state-level statute since many of the policy documents specifically addressed the "apples to apples" issue using verbiage like that found in the WSDOT guidance:

"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" (21).

Since 2012, FDOT has revised its policy regarding confidentiality of ATCs. The new policy directs the preparer of an RFP to include a list of those RFP requirements that cannot be changed via the ATC process as well as a second list of those that are fair game for ATC-based revision. The addition of the two lists creates the foundation for arguing that any ATC approved that relates to features of work on the second list is not a "Design Exception or Design Variations" because the RFP explicitly expressed an interest in evaluating design alternatives for those requirements. Additionally, when FDOT lists those requirements that are not eligible to be varied using the ATC process, it saves the industry time and resources by clearly communicating its desires regarding exactly where it is willing to accept innovative approaches. FDOT carries these areas, termed "sacred cows" in their vernacular into the technical criteria as well. A good example is as follows:

"Note to developer of the RFP: As part of the RFP for all Design-Build Projects, Districts shall include the typical section criteria and the minimum pavement design. The typical section design will identify the minimum lane widths, shoulder widths, median widths, cross slope and front slope requirements. The minimum typical section criteria developed by the Department *shall only be modified by the Design-Build firm through the ATC process*. Any requests to modify the typical section criteria by a Design-Build Firm will need to be approved by the Department and FHWA (as applicable) at the pre-bid meeting or prior to the information cut-off date." (23 *italics added*)

Survey results also show an increased importance of the confidentiality factors on the success of the ATC projects. The two highest factors reported by DOTs in terms of importance to success of ATC procurement process, is the ability to safeguard ATCs containing proprietary content and guaranteeing ATC confidentiality. Also, important to success were confidential one-on-one meetings, and confidentiality of pre-proposal communications between agency and contractors on matters other than ATCs. Table 2 is a synthesis of all the survey results regarding confidential one-on-one meetings. All the DOTs that reported using ATCs also reported using confidential one-on-one meetings to evaluate their potential proposals.

TABLE 2 Survey Output for Confidential One-On-One Meeting Procedures

Feature that describe the process used for confidential one-on-one meetings that involve ATCs.	Yes	No	Don't know
Contractor may choose to include or not include any of its approved ATCs in its proposal	19	1	0
ATCs can be used to propose changes to the sequence of work/phasing plan	18	1	1
ATCs can be used to propose changes to special provisions to the contract	17	3	0
One or more one-on-one meetings are optional for all competing contractors	16	3	1
Each contractor can ask for a one-on-one meeting if it wants one	16	3	1
Agency members at the meeting are from the evaluation panel	16	4	0
If required, the agency can refer an ATC to a third party for technical review	16	2	2
ATCs must be submitted with an estimate of schedule impact	14	6	0
The evaluation/approval of all ATCs is done by member of the evaluation panel	13	7	0
ATCs must be submitted with an estimate of costs	13	7	0
ATCs can be used to propose changes to general provisions to the contract	12	7	1
The features of work where changes from ATCs may be proposed is specified	11	6	3
If the ATC is a design change, the contractor must prove that it has been reviewed by an engineer licensed in the agency's state	6	12	2
The number of ATCs that can be proposed is limited	5	15	0
ATCs must require a deviation from the design criteria to be considered	4	15	1
One or more one-on-one meetings are required for all competing contractors	3	15	1
The ATC must save a specific amount of money to be considered	2	16	2
Cost estimates from ATCs are reviewed by an independent cost estimator	2	16	2
ATCs must not require a deviation from the published design criteria to be considered	2	17	1
Only changes to the technical design of the ATC project can be proposed	1	18	1
If an ATC is approved, it must be included in the proposal	1	19	0

An agency that desires to implement ATCs in their procurement process will need to determine the procedural issues involved in confidential meetings through answering the following six procedural issues in the instructions to proposers:

1. Initiating Confidential Meetings

The solicitation document content analysis found that confidential meetings were initiated in three different ways. The most common method provided a date in the instructions to proposers by which competing contractors notify the agency of their intention to submit an ATC. Additionally, 80% of the survey respondents indicated that contractors could initiate the one-on-one process by requesting a meeting. The benefit of this approach is that the initiation of the ATC meeting is purely voluntary on the part of the competing contractors. To do this effectively, the agency will want to insure that there will be sufficient time to evaluate and rule on every

ATC before the final proposals are due. The MoDOT overcomes this hurdle by making their DBB 60% plans available for review up to six months prior to the scheduled letting and entertains confidential meetings with interested contractors throughout that pre-letting period (8). The second approach is merely a slight variation of the first and it involves specifying a date by which all contractors notify the agency whether or not they intend to submit an ATC. The third and final approach is to schedule one-on-one meetings with all competitors and ascertain at that time if they are contemplating submitting an ATC. The survey supported that this final approach is not very common as only three out of 19 DOTs reported they required one-on-one meetings with all contracting parties.

There was no indication in the literature as to which of the three approaches was preferred, but a summary analysis of the advantages and disadvantages of each approach seems to indicate that the first approach was found in the most solicitation documents because it doesn't presuppose that ATCs will be proposed. With the fact that 41 of the 65 solicitation documents and 80% of survey respondents used the first approach combined with the literature, an inference can be drawn that leaving the initiation of ATC confidential meetings up to the competitors with no constraint other than specifying a reasonable deadline for notice of intent seems to be most successful.

2. Initial Amount of Technical Information and Limitations on Meetings

The solicitation document content analyses found that eight of 65 documents provided for a "preliminary" or "conceptual" ATC review to furnish the contractor with a determination as to whether its idea was approvable. If the answer was yes, then a "formal" or "final" ATC proposal was then submitted for detailed review and final disposition. An example was seen in the North Carolina DOT RFP (24). Thirty other solicitations only provided for a formal ATC submittal and 27 did not clearly indicate whether the contractor could get an indication of potential before investing the effort to fully develop the ATC submittal. This is seen in the New York City DOT document that did not provide the requisite clarity to know whether a concept could be presented short of a formal ATC submittal.

3. Number of ATCs that each competing contractor can submit

The other related issue is the maximum number of ATCs a given proposer will be permitted to submit for DOT review. Obviously, there is a point of diminishing returns where an agency could find itself overwhelmed with ATC review and lose the benefits it hopes to accrue to an unmanageable administrative nightmare or a potential delay in award. In the words of one RFP, the agency chose to allow ATC submittal "to avoid delays and potential conflicts in the design associated with deferring of technical concept reviews to the post-award period" (25). Therefore, the Massachusetts DOT (MassDOT) RFP goes on to limit the one-on-one meetings to a maximum of two each of two hours duration. MassDOT also limits the number ATCs to three in total. From the content analysis, this was the most restrictive set of conditions. Three other DOT RFPs limited the total number of ATCs. South Carolina joined Massachusetts with a maximum of three, Mississippi allowed 10, and Minnesota permitted 20. South Carolina and Massachusetts also made provision for preliminary concepts to be proffered. Thus, while it is impossible to tell from reading the RFPs, perhaps these two cases actually entertained a greater number of potential ATCs that were not formally submitted. MassDOT also specified that no financial information was to be discussed in the one-on-one meetings. The survey tracked almost exactly

with the content analysis, finding that only seven of 28 respondents limited the number of ATCs that could be submitted.

The issue with limiting the number of ATCs is unintentionally eliminating innovative concepts that would have been submitted if there had not been a ceiling on ATC submittals. The survey found that the majority of agencies that use ATCs receive more than three ATCs from each proposer. Collectively, the survey shows most procurements attract more than three ATCs per competitor. The content analysis found only four agencies had set limits. Thus, the conclusion that limiting the total number of ATCs will limit the industry's ability to innovate and add-value to the project is reached. If a limitation is required, then it will want to consider selecting a high number like Minnesota's limitation of 20.

4. Meeting Attendees and Control of Communications

The Minnesota DOT's (MnDOT) policy regarding ATC meetings states: "The review of ATCs needs to be kept to a small group of key individuals for confidentiality reasons (26)." MnDOT requires that all participants in the review/communication of the ATC process sign confidentiality agreements. MnDOT's policy manual also provides guidance regarding the control of communications pointing out that the project manager should not "coach" the teams, but *only indicate if items are acceptable or not acceptable* (26). WSDOT concurs with Minnesota's conservative approach by mandating that "WSDOT employees or consultants that participate in pre-Proposal one-on-one meetings with Proposers shall not evaluate Proposals" (21). On the other hand, a MassDOT DB RFP (25) requires that meetings be attended by "the Selection Committee, MassDOT Office of the General Counsel, Federal Highway, as well as any appropriate MassDOT technical experts... [to] ensure that all parties abide by the ATC process and adhere to the confidentiality agreements." The survey found that seven of 28 respondents also use a different group to evaluate ATCs than the group that evaluates the overall proposal. Such findings may lead one to infer that using different evaluation teams is successful in avoiding the appearance of impropriety.

5. Clarifications

The confidential one-on-one meetings associated with ATCs furnish a venue for seeking clarifications from the owner without fear of revealing a potentially attractive idea to one's competition. It also gives the owner a reading on how contract risks are being seen by the industry. The MoDOT's policy is to "hold confidential meetings with each Proposer where clarifications or comments related to the Contract wording will be discussed" (27). One DOT policy document states: "The ATC process ... allows a certain level of control by the agency over potential risks contemplated by proposers" (12). The Maryland SHA also permits DB proposers to ask for confidential meetings to secure clarifications (13). Finally, 13 of 65 RFPs permitted clarifications to be sought during ATC one-on-one meetings. The fact that the literature, survey, and content analysis permitted clarifications to be sought during one-on-one meetings leads to the conclusion that the practice of publishing all RFIs may not be beneficial to the construction project process and a recommendation that agencies consider creating a mechanism to gain clarification of solicitation documents in a confidential manner.

6. Control of communications both during and after the ATC meetings

Survey results show that most DOTs (14 out of 23) reported that approved ATC remains confidential through award of final contract. Thirteen reported approved ATCs of winning

contractor are revealed upon award while nine reported that approved ATCs from losing contractors are revealed upon award. Six states reported that ATCs from losing contractors remain confidential. Only two (Florida and Idaho) reported that approved ATCs trigger an addendum to the solicitation to all competitors and Florida has since changed its policy. Washington reported that if an ATC requires a design deviation then it might trigger an addendum, which is aligned with the new FDOT policy on addendum triggers.

Idaho, Georgia, and New York DOTs stated that approved ATCs from losing contractors are only revealed/available if they accept a stipend. The Georgia DOT also clarified that ATCs from losing contractors that met the solicitation definition of “Department Property” may be incorporated into preferred bidder's contract by a negotiated supplemental agreement. Proprietary items may be retained as confidential, if satisfying certain criteria. Michigan reported that ATCs remain confidential up to award; after award they can be disclosed through a Freedom of Information Act request. North Carolina DOT reported that if more than one ATC is submitted on the same concept, as determined by the Department, the Department reserves the right to revise the RFP to permit the concept presented in the ATC.

Stipends are typically paid to unsuccessful but responsive proposers. A typical example of the ATC stipend policy is found in the South Carolina DOT's (SCDOT) DB manual where SCDOT reserves the right to adopt and use any ATC, approved or disapproved, by the successful proposer on this contract or other contracts administered by SCDOT (28). In the survey, SCDOT reported that one of the major issues in employing ATCs is paying stipends due to the difficulty of obtaining its approval. The survey also revealed stipends in DB projects as the most reported policy/procedural change (together with one-on-one meetings) applied to employ ATCs. The MoDOT considered whether a stipend was appropriate on its DBB ATC projects (8) and decided that it would not require extensive design effort to be expended by the contractors that wished to propose an ATC. This eliminated the need for including a stipend in DBB ATC projects. In doing so, MoDOT accepted the responsibility for advancing contractor-inspired ATC designs to the point where bid quantities could be generated and used in the construction contract award process.

CONCLUSIONS

This study aimed at investigating the ATCs' procurement policies and pre-submittal procedures currently followed by STAs to implement ATCs for transportation projects. Literature review, online survey of state DOTs, and content analysis of RFP and policy documents were conducted to collect information on the ATC practices employed at transportation agencies. The analyses discussed in this paper resulted in the following major conclusions:

1. While ATC usage is most common in DB projects, ATCs have been successful implemented in nearly types of PDMs. ATC use does not appear to be constrained by an agency's project delivery selection decision. Therefore, agencies can implement ATCs without being constrained by technical or procurement issues.
2. Implementing ATCs on CMGC and DB-QBS projects seems to be more cost effective than DBB or DB because the ATCs can be incorporated directly into the final design without the loss of resources expended on the baseline design.
3. The fundamental definition of an ATC requires the agency to alter the baseline design and/or the baseline design criteria because if no deviation is required, the concept can be found responsive if it were proposed as merely the given competitor's preferred design approach.

4. The practice of publicizing all RFIs may stifle competitors' needs for clarification and interpretation of the baseline design. Incorporating ATCs in the procurement process creates a mechanism to gain clarification of solicitation documents in a confidential manner.

5. The two highest factors in terms of success of ATC procurement process is the ability to safeguard ATCs containing proprietary content and guaranteeing ATC confidentiality. Also, important to ATC success were confidential one-on-one meetings, and confidentiality of pre-proposal communications.

6. Limiting the total number of ATCs that can be submitted limits the industry's ability to innovate. If a limitation is required, then it may consider selecting as high a number as deemed practical.

Future research is needed to develop guidance on how to change an agency's procurement/technical culture when it adds ATCs to the project delivery process. The research would investigate the issue from concept through construction completion and provide effective practices for implementation throughout the ATC project's life cycle.

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