

# Alternative Technical Concepts: Program Case Study



## Summary of Federal Owner Agencies Interviews: State of the Practice

### INTRODUCTION

**Alternative Technical Concepts (ATCs) are an effective tool which can help agencies reduce the time and/or cost of construction projects. Many State departments of transportation (DOTs) successfully use ATCs in their design-build (D-B) projects, and Federal Lands Highway Division (FLHD) has expressed interest in learning to adapt the process to use on Federal projects.**

In an effort to determine the state-of-the-practice for the use of Alternative Technical Concepts (ATCs) at the Federal level, four Federal construction agencies were interviewed:

- General Services Administration (GSA) – Fort Worth Division.
- US Coast Guard – Director of Facilities and Procurement.
- US Army Corps of Engineers (USACE) – Director of Plans and Programs.
- Washington Metro Area Transit Agency (WMATA) – Director of Capital Program Delivery.

These agencies were chosen based on an informal survey of Dr. Gransberg's federal contacts. The compiled results of the interviews are below. The full interviews can be viewed in the appendices.

### RESULTS

The results of the interviews were somewhat disappointing in that only the WMATA seemed to use ATCs in the manner that State DOTs use them in D-B projects. However, WMATA is a unique Federal agency with its own procurement requirements based on the Federal Acquisition Regulations (FAR). WMATA asked for "innovative alternative concepts" (IACs) on a design-build-finance-operate-own project to build a rail test track. It allowed proposers to propose alternate concepts that applied track operational systems, project financing, revenue generation, and contractual terms. None of the IACs were related to the types of features of work a typical Federal Lands Highway Division organization would expect to procure. So, in summary, it appears that none of the four agencies that were interviewed actually implements ATCs in a form that would qualify for that designation under the Every Day Counts 2 (EDC2) program.

Two-step sealed bidding under FAR subpart 14.5 is a somewhat different matter. FAR subpart 14.501 defines the process as follows: "Two-step sealed bidding is a combination of competitive procedures designed to obtain the benefits of sealed bidding when adequate specifications are not available." The GSA and WMATA both use this method to procure unique features of work. In GSA's case, these features are usually related to high-tech security and surveillance systems. WMATA uses this method for similar reasons and reserves its use to procuring train

control and sequencing systems, as well as other technologies, such as electronic ticketing.

The bottom line is painfully obvious. ATCs as defined in EDC2 are not used in Federal agencies in a manner that would be recognizable to a DOT.

The FAR-based version of construction manager/general contractor (CM/GC) is called “early contractor involvement” (ECI) and presents the closest analog to the DOT-accepted ATC process. ECI projects are characterized by a focus on cost control and constructability, with the construction contractor providing a constructability review and estimating (CRE) team during the design process to assist the owner and the designer in developing a high-quality set of construction documents that have been designed within the target budget. This approach was pioneered by the USACE and was used extensively and with great success during the Hurricane Katrina reconstruction program.

USACE defines ECI as an integrated project delivery method that develops a holistic team consisting of the owner, designer, and contractor at the initiation of the project. Unlike CM/GC, which is priced using a negotiated Guaranteed Maximum Price (GMP), an ECI contract is priced using the FAR subpart 16.403-2 process called “Incentive Price Revision (Successive Targets).” This process is a best-value award process where contractors’ qualifications and past performance are first evaluated on a Go/No Go basis against a set of evaluation criteria. Those that are found to be qualified form a short list. The qualification

criteria are generally kept to a minimum, and a given contractor either meets or fails to meet a given criterion, eliminating the subjectivity found in qualifications-based award systems. For example, typical qualifications criteria for a bridge project might be as follows:

- The contractor will have successfully completed a minimum of four construction projects for the agency in the past 5 years.
- The contractor will have successfully completed at least one seismic retrofit of a major bridge (contract value exceeds \$X.X million) in the past 5 years.
- The contractor will have no unsatisfactory ratings in the USACE performance-based contractor evaluation database (CCAS) in the past 3 years.

Figure 1 shows the contractual structure of an ECI project. It is virtually the same as the structure used in a typical DOT CM/GC project. The major difference is the limiting of the preconstruction services contract to providing estimating and constructability review services. As was found in the National Cooperative Highway Research Program (NCHRP) Synthesis 455 on ATCs, the topic of alternative concepts is found during the ECI contractor selection process. In the Federal arena, it is difficult if not functionally impossible to include confidentiality during any phase of project development except during procurement.

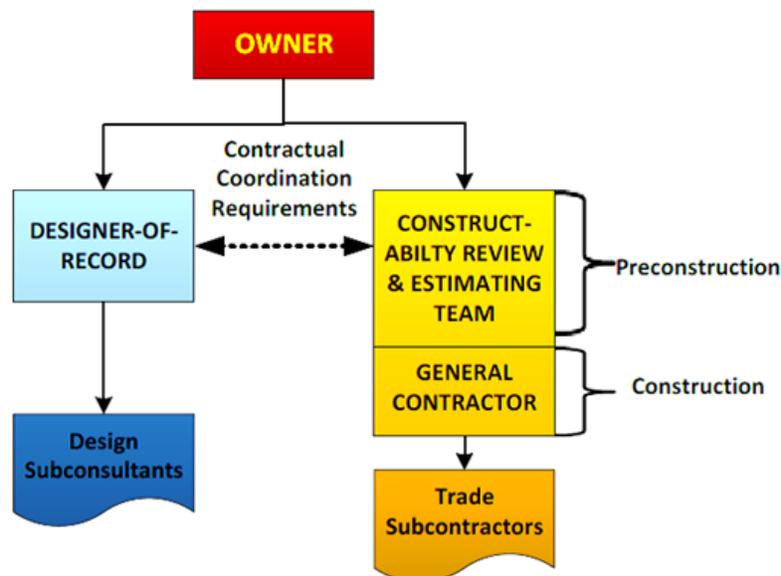


Figure 1. USACE early contractor involvement structure.



The Federal D-B process provides for stipends in exchange for unrestricted use of the unsuccessful offerors' innovative concepts included in the technical proposal. However, this does not appear to be the case in ECI, which will guarantee confidentiality only until the contract is awarded. After that point, the unsuccessful offerors have a right to request a debriefing. The FAR prohibits disclosing the contents of other competitors' proposals during the debriefing, but everything surrounding the procurement is subject to the Freedom of Information Act (FOIA). Thus, while the "innovative" concept disclosed during the ECI selection process is not immediately available, it can be had, and thus confidentiality is fleeting in ECI.

The following pages are the specific answers to the questionnaire used in the interviews. The answers are highlighted. Please note that no effort was made to record answers that would have been speculative. The overarching conclusion is twofold:

- None of the Federal agencies utilize an ATC process that is similar to the ones used by State DOTs.
- The FAR subpart 14.501 two-step sealed bidding process is not generally used for construction projects, although two agencies use it as the mechanism to procure unique, high technology systems such as security and surveillance systems that are components to a Federal building or facility.

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

R. David Unkefer, P.E.  
Construction & Project Management Engineer  
FHWA Resource Center  
david.unkefer@dot.gov

# APPENDIX A: INTERVIEW RESULTS FOR USCG

## QUESTIONNAIRE TO FEDERAL OWNER AGENCIES

### State of the Practice for Alternative Technical Concepts (ATC)

Name: *Admiral Tom Ostebo*

Agency: *USCG*

Date: *September 23, 2014*

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 Design-Bid-Build) or request for proposal (RFP for Design-Build) document.” (FHWA 2012).*

### PART 1—GENERAL ATC INFORMATION

- Does your agency use alternative technical concepts?  
 Yes                       No
- If the above answer is yes, what FAR Part/Clause do you use for authority to implement ATCs?  
*Use of ship building sealed bid fixed price incentive contract.*
- Describe your agency’s experience with ATCs below.  
Number of projects allowing ATCs: *3-4 a year*  
Average number of ATCs per project:  
Average number of ATCs per proposer:  
Percent of ATCs approved:
- For which project delivery methods do you allow ATCs?  
**Project Delivery Methods:**  
 Design-Bid-Build     Design-Build  
 Construction Manager/General Contractor (CM-at-Risk; Early Contractor Involvement)  
**Procurement Methods:**  
 Best Value                       Low bid
- How does your agency use ATCs in low-bid design-bid-build projects?
- How does your agency use ATCs in design-build projects?
- How does your agency decide on which projects to use ATCs?

8. Does your agency have a manual or document that specifically describes the ATC procedures?

- Yes       No       Don't know

If yes, please add the URL where it can be accessed or email Doug Gransberg at [dgransberg@gransberg.com](mailto:dgransberg@gransberg.com) below:

9. Which types of projects have the highest potential of accruing benefit from ATCs?

- Vertical projects (buildings, etc.)       Horizontal projects (roads, utilities, etc.)  
 Other projects (describe below):

10. Describe the flow of information from contractor to agency in your ATC process.

11. What changes did you make to your agency's contracting procedures to implement ATCs? (e.g. stipends, ATC scope, selection panel, permissible standards, restricting number of ATCs)

12. How do you assign the design liability associated with the ATCs?

<b>Design Liability</b>	<b>D-B-B</b>	<b>D-B</b>	<b>CM/GC</b>	<b>Don't Know</b>
Owner retains liability				
Liability is shifted to contractor				
Liability is shifted to contractor's design consultant				
Other: please specify				

13. What steps do you take to ensure confidentiality and fairness in the ATC process?

14. How do you handle proprietary or trade secrets of proposed products associated with an ATC?

15. Have you had a protest of an award a contract related to the ATC process?

- Yes       No

If yes, what was the basis of the protest and the outcome? Please describe:

16. What do you see as the biggest challenges with the ATC process?

## PART 2—TWO-STEP BIDDING

**Definition:** Two-step sealed bidding is a combination of competitive procedures designed to obtain the benefits of sealed bidding when adequate specifications are not available. It is conducted in two steps:

(a) Step one consists of the request for, submission, evaluation, and (if necessary) discussion of a technical proposal. No pricing is involved. The objective is to determine the acceptability of the supplies or services offered.

(b) Step two involves the submission of sealed priced bids by those who submitted acceptable technical proposals in step one. Bids submitted in step two are evaluated and the awards made in accordance with Subparts 14.3 and 14.4. ([http://www.acquisition.gov/far/html/Subpart%2014\\_5.html](http://www.acquisition.gov/far/html/Subpart%2014_5.html))

17. Have you used 2-step sealed bidding (FAR Subpart 14.5)?
- Yes       No       Don't know
18. What are the characteristics of a construction project with which you would procure using two-step sealed bidding?
- New construction       Replacement       Maintenance
- Rehabilitation       Upgrade       Other       All
20. If yes, will you allow the contractor to propose a technical concept that appears to meet published performance criteria but was not contemplated by the project team?
- Yes       No       Don't know
21. If you use two-step sealed bidding, how do you evaluate proposals and make an award?
- Meets technical criteria and award to the lowest bidder;
- Best-value based on technical scoring and adjusted price.
- Other (describe below)
22. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals meet the technical criteria published in the request for technical proposals?
- Yes       No       Don't know
23. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals are reasonably priced?
- Yes       No       Don't know
24. Do you track the cost savings associated with the implementation of two-step sealed bidding? If yes, please provide the summary information.
- Yes       No       Don't know
25. What do you see as the important factors for the success of the two-step sealed bidding during the procurement process?

# APPENDIX B: INTERVIEW RESULTS FOR GSA

## QUESTIONNAIRE TO FEDERAL OWNER AGENCIES

### State of the Practice for Alternative Technical Concepts (ATC)

Name: *Charlie Hart*

Agency: *GSA*

Date: *September 22, 2014*

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 Design-Bid-Build) or request for proposal (RFP for Design-Build) document.” (FHWA 2012).*

### PART 1—GENERAL ATC INFORMATION

1. Does your agency use alternative technical concepts?  
 Yes                       No
2. If the above answer is yes, what FAR Part/Clause do you use for authority to implement ATCs?
3. Describe your agency’s experience with ATCs below.  
Number of projects allowing ATCs:  
Average number of ATCs per project:  
Average number of ATCs per proposer:  
Percent of ATCs approved:
4. For which project delivery methods do you allow ATCs?  
**Project Delivery Methods:**  
 Design-Bid-Build     Design-Build  
 Construction Manager/General Contractor (CM-at-Risk; Early Contractor Involvement)  
**Procurement Methods:**  
 Best Value               Low bid
5. How does your agency use ATCs in low-bid design-bid-build projects?
6. How does your agency use ATCs in design-build projects?
7. How does your agency decide on which projects to use ATCs?

8. Does your agency have a manual or document that specifically describes the ATC procedures?

- Yes       No       Don't know

If yes, please add the URL where it can be accessed or email Doug Gransberg at [dgransberg@gransberg.com](mailto:dgransberg@gransberg.com) below:

9. Which types of projects have the highest potential of accruing benefit from ATCs?

- Vertical projects (buildings, etc.)       Horizontal projects (roads, utilities, etc.)  
 Other projects (describe below):

10. Describe the flow of information from contractor to agency in your ATC process.

11. What changes did you make to your agency's contracting procedures to implement ATCs? (e.g. stipends, ATC scope, selection panel, permissible standards, restricting number of ATCs)

12. How do you assign the design liability associated with the ATCs?

<b>Design Liability</b>	<b>D-B-B</b>	<b>D-B</b>	<b>CM/GC</b>	<b>Don't Know</b>
Owner retains liability				
Liability is shifted to contractor				
Liability is shifted to contractor's design consultant				
Other: please specify				

13. What steps do you take to ensure confidentiality and fairness in the ATC process?

14. How do you handle proprietary or trade secrets of proposed products associated with an ATC?

15. Have you had a protest of an award a contract related to the ATC process?

- Yes       No

If yes, what was the basis of the protest and the outcome? Please describe:

16. What do you see as the biggest challenges with the ATC process?

*Had ATCs proposed during the Phase 1 RFQ process during interviews.*

## PART 2—TWO-STEP BIDDING

**Definition:** Two-step sealed bidding is a combination of competitive procedures designed to obtain the benefits of sealed bidding when adequate specifications are not available. It is conducted in two steps:

(a) Step one consists of the request for, submission, evaluation, and (if necessary) discussion of a technical proposal. No pricing is involved. The objective is to determine the acceptability of the supplies or services offered.

(b) Step two involves the submission of sealed priced bids by those who submitted acceptable technical proposals in step one. Bids submitted in step two are evaluated and the awards made in accordance with Subparts 14.3 and 14.4. ([http://www.acquisition.gov/far/html/Subpart%2014\\_5.html](http://www.acquisition.gov/far/html/Subpart%2014_5.html))

17. Have you used 2-step sealed bidding (FAR Subpart 14.5)?

Yes       No       Don't know

18. What are the characteristics of a construction project with which you would procure using two-step sealed bidding?

*Unique technical features ...*

19. On what types of projects do you procure with two-step sealed bidding?

New construction       Replacement       Maintenance  
 Rehabilitation       Upgrade       Other       All

20. If yes, will you allow the contractor to propose a technical concept that appears to meet published performance criteria but was not contemplated by the project team?

Yes       No       Don't know

21. If you use two-step sealed bidding, how do you evaluate proposals and make an award?

Meets technical criteria and award to the lowest bidder;  
 Best-value based on technical scoring and adjusted price.  
 Other (describe below)

22. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals meet the technical criteria published in the request for technical proposals?

Yes       No       Don't know

23. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals are reasonably priced?

Yes       No       Don't know

24. Do you track the cost savings associated with the implementation of two-step sealed bidding? If yes, please provide the summary information.

Yes       No       Don't know

25. What do you see as the important factors for the success of the two-step sealed bidding during the procurement process?

*Past performance. Specific experience like specialized equipment, NEPA permitting, past local area construction projects, past federal contracts, etc.*

# APPENDIX C: INTERVIEW RESULTS FOR USCG

## QUESTIONNAIRE TO FEDERAL OWNER AGENCIES

### State of the Practice for Alternative Technical Concepts (ATC)

Name: James Dalton, PE

Agency: USACE

Date: September 23, 2014

The Federal Highway Administration (FHWA) defines an Alternative Technical Concept (ATC) as:

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### PART 1—GENERAL ATC INFORMATION

- Does your agency use alternative technical concepts?  
 Yes                       No
- If the above answer is yes, what FAR Part/Clause do you use for authority to implement ATCs?
- Describe your agency’s experience with ATCs below.  
Number of projects allowing ATCs: 3-4 a year  
Average number of ATCs per project:  
Average number of ATCs per proposer:  
Percent of ATCs approved:
- For which project delivery methods do you allow ATCs?  
**Project Delivery Methods:**  
 Design-Bid-Build     Design-Build  
 Construction Manager/General Contractor (CM-at-Risk; Early Contractor Involvement)  
**Procurement Methods:**  
 Best Value               Low bid
- How does your agency use ATCs in low-bid design-bid-build projects?
- How does your agency use ATCs in design-build projects?
- How does your agency decide on which projects to use ATCs?

8. Does your agency have a manual or document that specifically describes the ATC procedures?

- Yes       No       Don't know

If yes, please add the URL where it can be accessed or email Doug Gransberg at [dgransberg@gransberg.com](mailto:dgransberg@gransberg.com) below:

9. Which types of projects have the highest potential of accruing benefit from ATCs?

- Vertical projects (buildings, etc.)       Horizontal projects (roads, utilities, etc.)  
 Other projects (describe below):

10. Describe the flow of information from contractor to agency in your ATC process.

11. What changes did you make to your agency's contracting procedures to implement ATCs? (e.g. stipends, ATC scope, selection panel, permissible standards, restricting number of ATCs)

12. How do you assign the design liability associated with the ATCs?

<b>Design Liability</b>	<b>D-B-B</b>	<b>D-B</b>	<b>CM/GC</b>	<b>Don't Know</b>
Owner retains liability				
Liability is shifted to contractor				
Liability is shifted to contractor's design consultant				
Other: please specify				

13. What steps do you take to ensure confidentiality and fairness in the ATC process?

14. How do you handle proprietary or trade secrets of proposed products associated with an ATC?

15. Have you had a protest of an award a contract related to the ATC process?

- Yes       No

If yes, what was the basis of the protest and the outcome? Please describe:

16. What do you see as the biggest challenges with the ATC process?

## PART 2—TWO-STEP BIDDING

**Definition:** Two-step sealed bidding is a combination of competitive procedures designed to obtain the benefits of sealed bidding when adequate specifications are not available. It is conducted in two steps:

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17. Have you used 2-step sealed bidding (FAR Subpart 14.5)?
- Yes       No       Don't know      *But not for construction projects*
18. What are the characteristics of a construction project with which you would procure using two-step sealed bidding?
- New construction       Replacement       Maintenance
- Rehabilitation       Upgrade       Other       All
20. If yes, will you allow the contractor to propose a technical concept that appears to meet published performance criteria but was not contemplated by the project team?
- Yes       No       Don't know
21. If you use two-step sealed bidding, how do you evaluate proposals and make an award?
- Meets technical criteria and award to the lowest bidder;
- Best-value based on technical scoring and adjusted price.
- Other (describe below)
22. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals meet the technical criteria published in the request for technical proposals?
- Yes       No       Don't know
23. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals are reasonably priced?
- Yes       No       Don't know
24. Do you track the cost savings associated with the implementation of two-step sealed bidding? If yes, please provide the summary information.
- Yes       No       Don't know
25. What do you see as the important factors for the success of the two-step sealed bidding during the procurement process?

# APPENDIX D: INTERVIEW RESULTS FOR WMATA

## QUESTIONNAIRE TO FEDERAL OWNER AGENCIES

### State of the Practice for Alternative Technical Concepts (ATC)

Name: *Idlefonso Burgos*

Agency: *WMATA*

Date: *February 6, 2015*

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 Design-Bid-Build) or request for proposal (RFP for Design-Build) document.” (FHWA 2012).*

### PART 1—GENERAL ATC INFORMATION

- Does your agency use alternative technical concepts?  
 Yes *Called innovative concepts*       No
- If the above answer is yes, what FAR Part/Clause do you use for authority to implement ATCs?  
*Use on Transit Supply and Service Contracts. Tried on a DBFOM for Greenway Test Track. WMATA is invited proposers to submit innovative alternative concepts in systems, project financing, revenue generation and contractual terms.*
- Describe your agency’s experience with ATCs below. *Did it once*  
Number of projects allowing ATCs: *3 to 4 a year*  
Average number of ATCs per project:  
Average number of ATCs per proposer:  
Percent of ATCs approved:
- For which project delivery methods do you allow ATCs?  
**Project Delivery Methods:**  
 Design-Bid-Build     Design-Build *plus finance, operate, maintain*  
 Construction Manager/General Contractor (CM-at-Risk; Early Contractor Involvement)  
**Procurement Methods:**  
 Best Value       Low bid
- How does your agency use ATCs in low-bid design-bid-build projects?
- How does your agency use ATCs in design-build projects?
- How does your agency decide on which projects to use ATCs?

8. Does your agency have a manual or document that specifically describes the ATC procedures?

- Yes       No       Don't know

If yes, please add the URL where it can be accessed or email Doug Gransberg at [dgransberg@gransberg.com](mailto:dgransberg@gransberg.com) below:

9. Which types of projects have the highest potential of accruing benefit from ATCs?

- Vertical projects (buildings, etc.)       Horizontal projects (roads, utilities, etc.)  
 Other projects (describe below):

10. Describe the flow of information from contractor to agency in your ATC process.

11. What changes did you make to your agency's contracting procedures to implement ATCs? (e.g. stipends, ATC scope, selection panel, permissible standards, restricting number of ATCs)

12. How do you assign the design liability associated with the ATCs?

Design Liability	D-B-B	D-B	CM/GC	Don't Know
Owner retains liability				
Liability is shifted to contractor				
Liability is shifted to contractor's design consultant				
Other: please specify				

13. What steps do you take to ensure confidentiality and fairness in the ATC process?

14. How do you handle proprietary or trade secrets of proposed products associated with an ATC?

15. Have you had a protest of an award a contract related to the ATC process?

- Yes       No

If yes, what was the basis of the protest and the outcome? Please describe:

16. What do you see as the biggest challenges with the ATC process?

*Had ATCs proposed during the Phase 1 RFQ process during interviews.*

## PART 2—TWO-STEP BIDDING

**Definition:** Two-step sealed bidding is a combination of competitive procedures designed to obtain the benefits of sealed bidding when adequate specifications are not available. It is conducted in two steps:

(a) Step one consists of the request for, submission, evaluation, and (if necessary) discussion of a technical proposal. No pricing is involved. The objective is to determine the acceptability of the supplies or services offered.

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17. Have you used 2-step sealed bidding (FAR Subpart 14.5)?

Yes       No       Don't know

18. What are the characteristics of a construction project with which you would procure using two-step sealed bidding?

*Not used in construction, Is used in train and transit systems procurement.*

19. On what types of projects do you procure with two-step sealed bidding?

New construction       Replacement       Maintenance  
 Rehabilitation       Upgrade       Other       All

20. If yes, will you allow the contractor to propose a technical concept that appears to meet published performance criteria but was not contemplated by the project team?

Yes       No       Don't know

21. If you use two-step sealed bidding, how do you evaluate proposals and make an award?

Meets technical criteria and award to the lowest bidder;  
 Best-value based on technical scoring and adjusted price.  
 Other (describe below)

22. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals meet the technical criteria published in the request for technical proposals?

Yes       No       Don't know

23. If you use two-step sealed bidding, do you cancel the solicitation if none of the proposals are reasonably priced?

Yes       No       Don't know

24. Do you track the cost savings associated with the implementation of two-step sealed bidding? If yes, please provide the summary information.

Yes       No       Don't know

25. What do you see as the important factors for the success of the two-step sealed bidding during the procurement process?