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Montana Department of Transportation

2701 Prospect
PO Box 201001
Helena MT 59620-1001

Greg Gianforte, Governor

Malcolm "Mack" Long, Director

MDT *Montana Department of Transportation* **CONSTRUCTION MEMO**	Date Issued: April 05, 2021 Date Effective: April 05, 2021 Related Specifications: 104.08 Value Engineering Proposals
Subject: Value Engineering Proposals	

Construction Memorandum

To: District Construction Engineers
Engineering Project Managers

From: Fred Beal, P.E.
Construction Engineering Services Review Section Supervisor

This Construction Memo provides a uniform process for the submission and processing of Value Engineering Proposals in accordance with Standard Specification 104.08.

For assistance or questions related to Value Engineering Proposals, please contact me or your District CES Reviewer.

FB/fb

CC: EPMs, Jake Goettle, PE, District Administrators, District Office Engineers, FHWA Operations Engineers, Bureau Chiefs, CES Bureau, Dwane Kailey, PE, DESSs, Val Wilson, Legal, Chris Nygren, Legal

GUIDANCE FOR EVALUATING VALUE ENGINEERING PROPOSALS

A Value Engineering (VE) Proposal is an improved construction technique, an alternative material, or other innovation proposed by the Contractor that would reduce project cost. The function and quality of the project must be maintained or enhanced. Net cost savings is shared between the Contractor and the Department.

The Construction Engineering Services (CES) Bureau will be responsible for processing Value Engineering (VE) proposals, according to Standard Specification 104.08, and for coordinating any reviews and investigations performed by other involved Bureaus. These Bureaus will provide technical advice and recommendations in their functional area of expertise.

VE proposals should be evaluated in a timely manner and every reasonable effort should be made to complete the response within the time frame given in the proposal. MDT's Designers work on planning and design throughout a long preconstruction phase and the VE proposal may have design changes requiring re-analysis in a very short timeframe. If the timeframe given appears to be unreasonably short, the EPM should contact the contractor, state that the time frame appears to be unreasonable and request that the contractor direct MDT to either proceed with the proposal under a revised date or rescind the proposal.

The assigned CES Reviewer will be the point of contact and will be responsible for coordinating the review of the proposal and tracking progress.

The CES Bureau will maintain a spreadsheet containing pertinent proposal information and will share lessons learned to incorporate innovative practices into future MDT projects, either at the planning phase, or into future VE Proposals.

Pre-Bid Information

The Value Engineering concept is based on savings generated from changes to the contract work. It is not intended to provide a competitive advantage in the bidding process.

Post Award Information

The Department can only make a commitment on a proposal submitted in accordance with contract provisions. Any comment on tentative proposals should be confined to general concepts. Care must be taken to make it understood that such comments do not constitute an endorsement or a commitment that the proposal would be accepted.

Evaluation

Contractors, in many cases, will be concerned about incurring the expense of developing a proposal that could ultimately be rejected.

VE proposal evaluations are a two-step process. The initial step is the Preliminary Review. The purpose of the Preliminary Review is to screen proposals to determine if a

detailed investigation is warranted. Costs incurred by the Department during the Preliminary Review stage will not be charged to the Contractor.

Include Maintenance in VE reviews so that they can evaluate and report on how the VE changes could affect future maintenance/costs.

Proposals found to have a reasonable possibility of meeting service requirements and being cost effective will be advanced to the Detailed Review stage. The Detailed Review stage will include analysis and investigation. Costs incurred by the Department during the Detailed Review stage will be shared equally by the Department and the Contractor.

The following generally would not qualify as a VE Proposal and should be rejected:

- An alternate construction method or idea that has been previously considered (such as in the design phase of project development)
- Deletions of pay items
- Deletions of specifications
- Proposals to accelerate construction are not eligible per CFR 627.9
- Changes that violate any of the design standards that were used in the original design. (If such changes are desired, they would not qualify as a part of the VE but could be made by change order outside of the VE and without cost sharing.)

<u>Preliminary Review</u>

1. The District will review the proposal for form, content and completeness in accordance with Standard Specification 104.08. This will include overall concept, cost data, and time allowed for evaluation.

3. The District will then send the proposal to the CES Review Section Supervisor for a check of the District's Preliminary Review.

4. The CES Bureau will transmit the proposal to involved Bureaus and FHWA (on oversight projects) for a Preliminary Review of the technical and functional aspects of the proposal. A statement of time available for the Preliminary Review will be included.

5. The CES Bureau will set up a meeting to discuss the VE proposal to include the contractor, designers, and construction staff.

6. The involved Bureaus and FHWA (on oversight projects) will make a Preliminary Review of proposal features that relate to their functional areas. This is intended only to be cursory review in order to determine if the proposal warrants detailed investigation and analysis. The Preliminary Review should only require sufficient detail to identify obvious problems in regard to design standards, service requirements, materials properties and other factors affecting performance and operation.

7. The results of the Preliminary Review from each functional area will be transmitted to the CES Bureau, including a brief statement of significant

problems, a recommendation as to whether or not a detailed investigation is warranted, and a rough estimate of the time and cost required for Detailed Review.

8. The CES Bureau will summarize and evaluate Preliminary Review reports and make a recommendation to the Construction Engineer. The Construction Engineer will make a determination to proceed with a Detailed Review or to reject the proposal.

9. For rejected proposals, the CES Bureau will notify the District who will then notify the contractor, in writing, of the decision and the reasons for the rejection. The contractor will have the option of revising the proposal to answer the objections.

Note: Frequent and open communication between the EPM, CES, and other parties is essential and is strongly encouraged.

Detailed Reviews

1. The CES Bureau will notify the involved Bureaus and FHWA (on oversight projects) to proceed with detailed investigations and of the time that is allowed. All time spent on this work should be tracked on timesheets using the activity number 065.

2. The purpose of the Detailed Review is to ensure the essential functions of the project are not impaired. This may include re-design, design review, review of consultant designs, material tests and evaluation, quantity calculations and cost estimates. This stage may include internal meetings and/or meetings with contractors and their consultants to clarify and negotiate solutions to problems.

3. Each of the involved Bureaus will submit a Detailed Review report to the CES Bureau. Reports will include a recommendation as to whether or not the proposal should be accepted in whole or in part. Suggested modifications to make it acceptable should be furnished as appropriate. Reports should include any recommended changes to contract documents necessary to implement the proposal. Quantity changes and cost estimates should be supplied. An estimate of the cost and time required for any detailed re-design or plan revision should be included.

4. The CES Bureau will compile the Detailed Review reports and provide a summary of findings and a recommendation to the Construction Engineer.

5. CES will produce a report on the 065 activity number, in order to determine the total cost incurred during the Detailed Review. The cost amount will be provided to the District Construction Engineer and Project Manager.

6. The Construction Engineer will determine whether or not to accept the proposal and will notify the District Construction Engineer of the decision by memorandum, with a copy to the Project Manager. The District will then notify the contractor, in writing, of the decision.

7. For accepted proposals, the District will prepare a change order with any supporting documentation. The adjusted contract amount will reflect the equal sharing of the net savings from the VE proposal. Note that the cost of the detailed review is accounted for in the net savings calculation. See attachment #1 for guidance on writing a CO for a VE.

8. For rejected proposals, the District will prepare a change order to document the cost sharing of the Detailed Review.

Department Expense to Evaluate and Implement

The costs to the Department incurred during the Detailed Reviews are to be shared equally by the contractor and Department.

These costs may include, but are not limited to:

1 Investigation and Review.

2 Re-Design or Design checks.

3 Quantity calculations and estimates.

4 Plan revision or preparation.

5 Laboratory sampling and testing for investigation.

6 Field surveys or re-surveys.

7 Plan revisions and preparation.

Increased costs to the Department associated with the implementation of Value Engineering proposals are also to be shared equally by the contractor and Department.

These costs may include, but are not limited to:

1 Additional inspection, testing, or surveys required to implement the proposal.

2 Any increased pay item quantities.

3 Increased road user-costs.

4 Increased traffic control costs.

5 Increased erosion control costs.

6 Increased Maintenance cost. Examples: increased cost for sanding removal around added guardrail installations, or increased costs for snow removal resulting from a change from box beam to W beam guardrail.

Example Calculation:

In this example, the contractor has proposed to replace the planned box beam guardrail with a new type of rail. The benefit is that it will reduce the amount of unclassified excavation on the project.

Detailed Review Costs	$ 1,100
800 m ACME Type Guardrail	$190,000
800 m Guard rail – box beam	- $180,000
8000 cu m unclass excavation	- $ 50,000
net savings	- $ 38,900

change order amount = 50% x $38,900 = $19,450 contract reduction

Templates

The following attached templates may be used in Value Engineering proposal correspondence:

- Memo template: CES Bureau's evaluation & recommendation to the Construction Engineer
- Memo template: VE acceptance/denial to DCE from Construction Engineer

Attachment #1

VE Change Order Guidelines
9-5-19
MDT Construction Engineering Services (CES) Bureau

The purpose of this document is to provide guidance on how to write a VE change order to clearly document the total VE savings, MDT's portion of the savings and to clearly communicate that the savings has been applied in the change order.

Change Order Explanation

In the change order explanation include language identifying the total VE savings amount and the MDT portion of the savings.

Example #1 – Change Order Description

'*The net VE cost savings is $574,835.80. MDT's savings is 50% of this amount, $287,417.90.*

How to Apply the VE Savings

The VE savings can be applied to the Contract by deleting and adding bid items, adjusting unit prices of bid items or by adding a new bid item specifically for the VE savings.

Example #2 – Adding/Deleting Bid Items and Adjusting Unit Prices

The VE savings is applied by deleting bid items Concrete Casing – 24" and Concrete Casing – 36" and adding bid item Steel Casing 24" and Steel Casing 36" at the unit prices shown.'

If the VE savings is not applied by modifying unit prices, add a new lump sum bid item as shown in the example below. The amount of this lump sum item should be MDT's portion of the savings.

Example #3

Estimate Quantity and Cost

NOTE : The quantities shown are not guaranteed. Payment will be based on actual quantities.

County: GALLATIN

Item Nbr	Ln Nbr	Proj Nbr	Catg		Quantity	Unit	Item Description		Unit Price		Amount
104080000	9061	4805041000	0001		1.000	LS	VE PROPOSAL SAVINGS	$	1,323.75000	$	1,323.75
604010518	0500	4805041000	0001	-	1.000	EACH	COMB 48 IN T3 MH-TA CURB INLET (1220MM)	$	1,950.00000	-$	1,950.00
604010552	0530	4805041000	0001	-	1.000	EACH	COMB 48 IN (1220 MM) T 3 MH-T 5 DROP INL	$	2,250.00000	-$	2,250.00
Time Extension		0 day(s)							Total Value for Change Order	-$	2,876.25

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To: Jake Goettle, P.E.
Construction Engineer

From: Fred Beal, PE
Construction Engineering Services Section Supervisor

Date: April 5, 2021

Subject: (Project Number)
(Description)
Value Engineering proposal

Attached is a Value Engineering (VE) proposal from the prime contractor, , for the subject project, dated . The contractor has proposed to . A meeting to discuss the proposal was held on .

Those in attendance at the meeting were:

The meeting began with a general discussion of the merits of the proposal, and to determine if the criteria for a Value Engineering Proposal were met, as set forth in Subsection 104.08. Those criteria are, and the groups' findings were:

Service Life:

Economy of Operation: This proposal will provide a significant benefit in a number of ways. The net savings in to the MDT, $, .

Ease of Maintenance: This proposal should have effect.

Reliability: For reasons noted in the Service Life discussion, reliability would be enhanced.

Desired Appearance: This proposal should have effect.

Safety: This proposal should have effect.

The following unit priced items are contained in this VE proposal:

Net Savings =

The recommendation from the Construction Engineering Services Bureau for the acceptance/denial of the subject Value Engineering proposal is ……..

Cc: Construction Engineering Services Bureau
Materials Bureau
, District Administrator
, District Construction Engineer
, FHWA
, District Design Supervisor
, EPM
Environmental Services Bureau
MDT Consultant Design

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To: <name>
District Construction Engineer

From: Jake Goettle, PE
Construction Engineer

Date: April 5, 2021

Subject: (Project Number)
(Description)
Value Engineering Proposal

The Detailed Review of the subject VE proposal has been completed.

It has been determined that the proposal would be mutually beneficial to both the Department and the Contractor and is accepted with the following conditions/stipulations:

-
-
-

or

Based upon the results of the Detailed Review, the Department has declined to accept the proposal.

Please proceed with processing a change order for the subject VE.

Cc: Construction Engineering Services Bureau
Materials Bureau
, District Administrator
, District Construction Engineer
, FHWA
, District Design Supervisor
, EPM
Environmental Services Bureau
MDT Consultant Design