



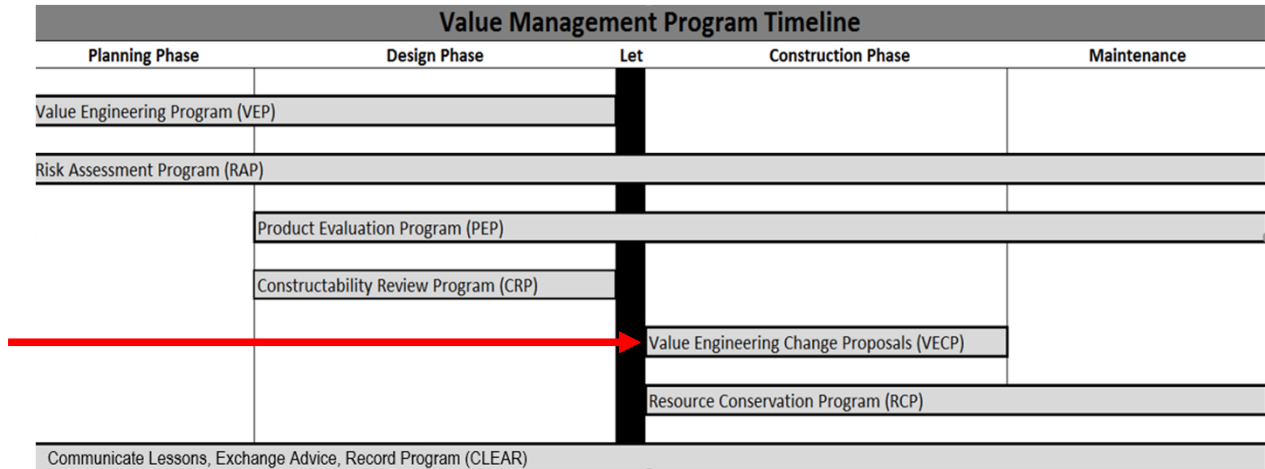
**NORTH CAROLINA**  
Department of Transportation



# Value Engineering Proposals

Overview

# Value Management Office



The Value Management Office’s seven programs can be seen here on the timeline of a project. As you can see – the programs cumulatively span the entire life cycle of a project or program.

This presentation will only focus on the Value Engineering Proposal Program.

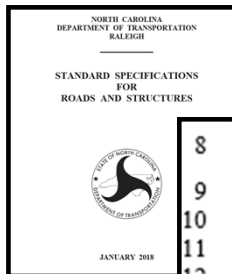
# Value Engineering Proposal



## What is Value Engineering?

Value Engineering is a method of applying innovative solutions to a project in an effort to increase the value. The Value Management Office has two programs that apply the principles of value engineering. One involves value engineering studies which occur pre-let in the early stages of the design development. The second is the value engineering proposals which are done post-let and initiated by the Contractor.

# Value Engineering Proposal



## 8 104-12 VALUE ENGINEERING PROPOSAL

9 This value engineering specification is to provide an incentive to the Contractor to initiate,  
10 develop and present to the Department for consideration, any cost reduction proposals  
11 conceived by him involving changes to the contract. This specification does not apply unless  
12 the proposal submitted is specifically identified by the Contractor as being presented for  
13 consideration as a Value Engineering Proposal (VEP). Submittals that propose material  
14 substitutions of permanent features, such as, but not limited to, changes from rigid to flexible  
15 or flexible to rigid pavements, concrete to steel or steel to concrete bridges will not be  
16 considered acceptable VEPs. Depending on the complexity of evaluation and  
17 implementations, VEPs that provide for a total savings before distribution of less than  
18 \$10,000 may not be considered.

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Details on the value engineering proposals (VEPs) can be found in the 2018 Standard Specifications for Roads and Structures, specifically article 104-12 and is a part of every contract. A VEP is a Contractor developed proposal that is submitted to the Department. A VEP is an opportunity for the Contractor to make an innovative change that will provide value to the project once it has started. An approved VEP splits the savings 50/50 between the Department and the Contractor.

It is important here to note where it says: submittals that propose material substitutions of permanent features, such as, but not limited to, changes from rigid to flexible or flexible to rigid pavements, concrete to steel or steel to concrete bridges will not be considered acceptable VEPs.

Examples of accepted VEPs include a modification to the drainage layer, the redesign of a ramp to eliminate a retaining wall, and adding an off-site detour to build bridges in existing location to name a few.

## Highlights

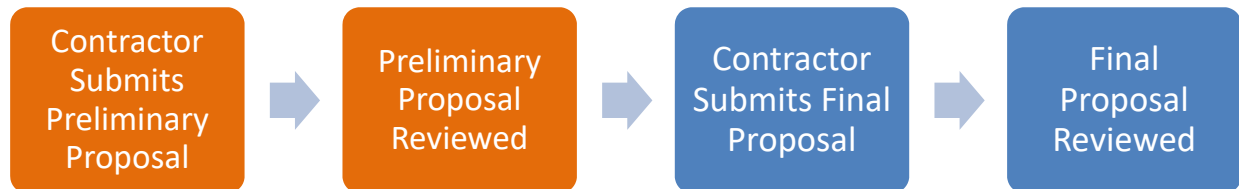
A Value Engineering Proposal (VEP) brings an innovative idea to the Department from a Contractor.

1. Contractor Idea
2. Cost Savings
3. Innovative Solution
4. Time Savings



As stated, a VEP brings an innovative idea to the Department through a project from a Contractor. This is a Contractor developed idea and should show cost savings, time savings, and innovative thinking.

# VEP Process



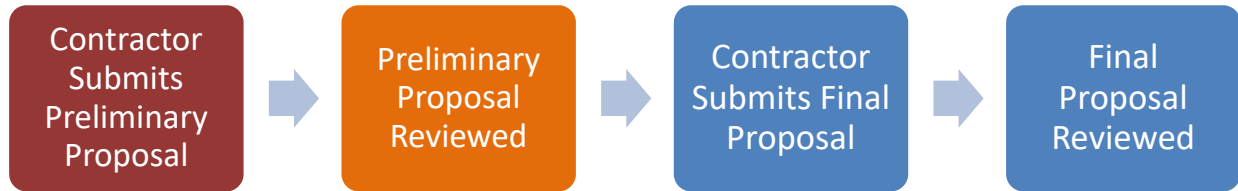
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There are two types of proposals, preliminary and final.

Contractor submits a Preliminary Proposal which shows the concept through sketches, mark-ups on existing plan sheets, a short description, and breakdown of costs associated with the proposal. The Preliminary Proposal is reviewed so the Contractor does not spend time and resources on a more detailed Final Proposal that may not be accepted.

All costs related to developing the Value Engineering proposal is at the Contractor's own expense.

# VEP Process



So what is the VEP Process?

## VEP Process

Contractor Submits Preliminary Proposal

- Resident confirms with Value Management that they want to pursue this proposal.
- Value Management confirms the proposal should move forward as a VEP.

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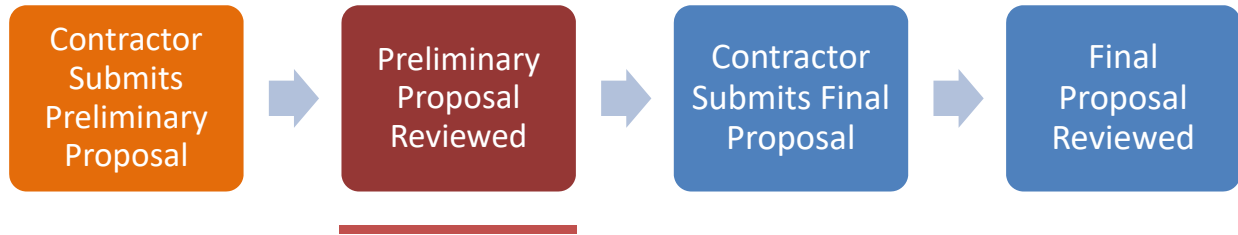
The Preliminary Proposal needs to be able to show the Contractors proposed concept, the benefit of the concept, and the benefits it would bring to the project. A Preliminary Proposal should include a sketch, mark-ups on existing plan sheets, a short description, a rough breakdown of costs associated with the proposal, and an estimated cost savings.

The Department uses the Preliminary Proposal to review the merit of the concept prior to the Contractor spending time and money developing a more detailed Final Proposal.

Value Management does not process a VEP until it is confirmed that the Division wants to pursue the proposal.



# VEP Process



Once it is confirmed that the VEP meets the requirements and there is an agreement to pursue the proposal, the VEP is reviewed.

# VEP Process

Preliminary Proposal Reviewed

- Identify:

1. What Disciplines need to be a part of the review.
2. The date the review needs to be completed.
3. Any additional project history that would be helpful.

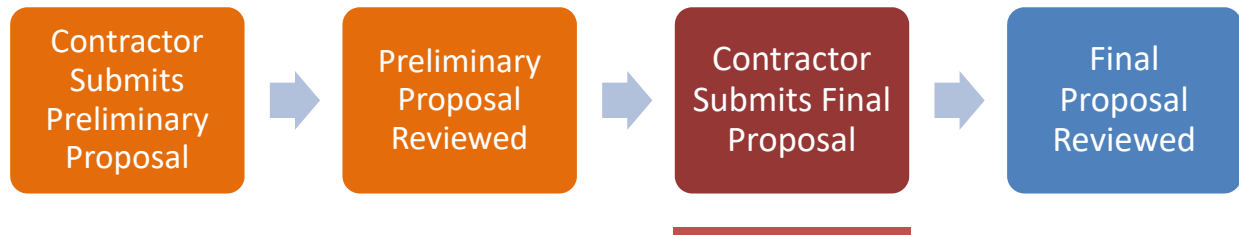
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Review is completed by Resident Engineer, Value Management, and technical units.

Value Management coordinates with the Resident Engineer to determine what disciplines are included in the technical review. When the review needs to be completed by and any additional project history that might be helpful should also be provided.

If the VEP meets the requirements and has technical merit, the Resident Engineer will inform the Contractor to submit a Final Proposal, addressing any comments or concerns.

# VEP Process



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The Contractor then prepares the final proposal. Details of what needs to be included can be found in the specifications

The Final Proposal must include:

- Design Calculations;
- Contract Plan Sheet Modifications;
- Contract Document Changes, like a Special Provision; and
- Cost Savings Estimate using the line items in the Contract.

The Contractor is responsible for all costs associated with developing a proposal, including stamped and sealed calculations and plan sheets, if the proposed changes requires them.

# VEP Process

Contractor Submits Final  
Proposal

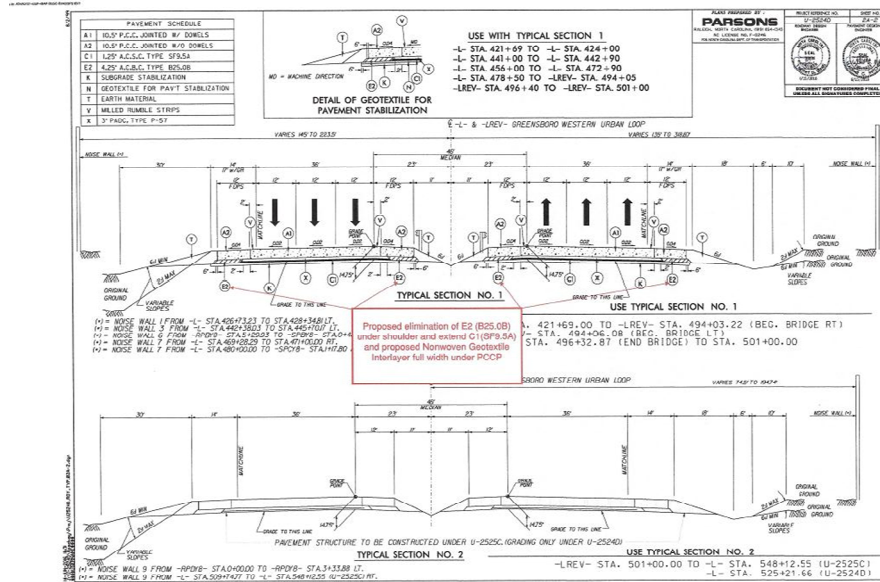
- Confirm:

1. All preliminary review comments have been addressed.
2. All estimates are complete and accurate.
3. If another discipline not involved in the preliminary needs to be included.

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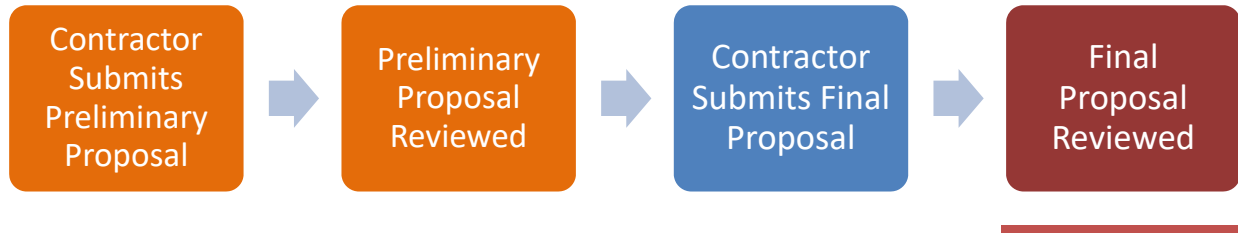
Similar to the preliminary review, Value Management processes the review of the Final Proposal once confirmation to proceed is received from the Division. Value Management coordinates with the Resident Engineer and technical units to confirm all comments were addressed and the estimates are complete and accurate.

# VEP Process



Here is an example of part of a value engineering proposal submission. In this case the proposal was to use a nonwoven geotextile interlayer under PCCP instead of the permeable asphalt drainage course and you can see where the Contractor was showing the change. Other parts of the submission included a cost breakdown, engineering calculations, and new typical section.

# VEP Process



The final proposal is reviewed and coordinated by Value Management.

## VEP Process

Final Proposal Reviewed

- Approval is garnered from necessary disciplines.
- Residents office gives final agreement to proceed.
- Construction Unit signs off on approval for SA.

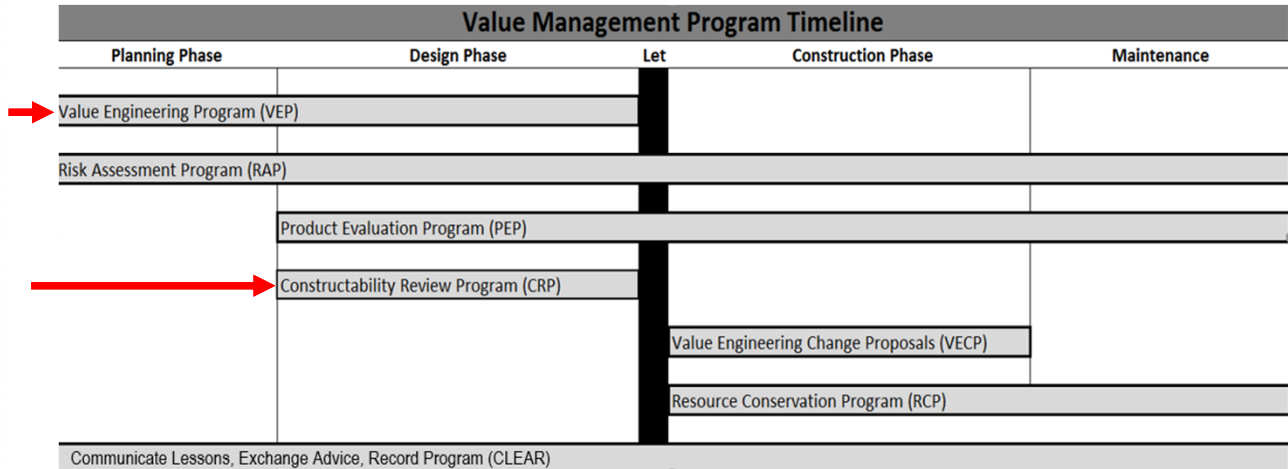
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If the resident agrees with the final proposal then Value Management will coordinate to get the necessary technical design units in Department to review the proposal and following their approval, the proposal will be sent to the construction office for the final approval. Technical experts from the preliminary review are contacted to review the final proposal.

If Construction approves the proposal, they will send an official acknowledgement to the Resident Engineer, authorizing a Supplement Agreement.

The Resident Engineer will then make a Supplemental Agreement with the Contractor, which will include the portion of the cost savings owed to the Contractor. In the example provided, there was a net savings of \$87,000. The cost and time it takes to submit a Value Engineering Proposal should be taken into account by the Contractor, as no time extension for the project will be given for review of a Value Engineering Proposal.

# Value Management Office



In addition to the Value Engineering Change Proposals, Value Management also requests participation from Resident Engineers and area construction personnel in Value Engineering Studies and Constructability Reviews.

Value Engineering studies are federally required studies on projects that meet or exceed a \$40 Million dollar threshold and are located on the National Highway System. For these studies, Value Management wants personnel who are not involved in the development of a project and provide a fresh look at possible design alternatives that will improve the overall project through construction and maintenance.

Additionally, Value Management requests participation in Constructability Reviews which is similar in that the project is reviewed the project during project development. However, during this review the design team, Contractors from the AGC, as well as resident and area construction personnel are involved. This helps work through and mitigate possible construction issues during design.



Program	Contact
Product Evaluation Program (PEP)	Dan Snoke, PE <a href="mailto:djsnoke@ncdot.gov">djsnoke@ncdot.gov</a>
Product Evaluation Program (PEP) Resource Conservation Program (RCP)	Steven Bolyard <a href="mailto:sjbolyard@ncdot.gov">sjbolyard@ncdot.gov</a>
Value Engineering Program (VEP) Constructability Review Program (CRP) Communicate Lessons, Exchange Advice, Record Program (CLEAR)	Clare Fullerton, PE <a href="mailto:cefullerton@ncdot.gov">cefullerton@ncdot.gov</a>
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So that's Value Engineering Proposals in a nutshell. Value Management Office's programs are here to support project delivery efforts and facilitate conversations to find the best uses of our resources, mitigate risks and ensure constructability. If you have any interest in our programs or our office then I encourage you contact us. If you ever have any questions about the programs, feel free to reach out to any one of our program managers and we'll be happy to help.