

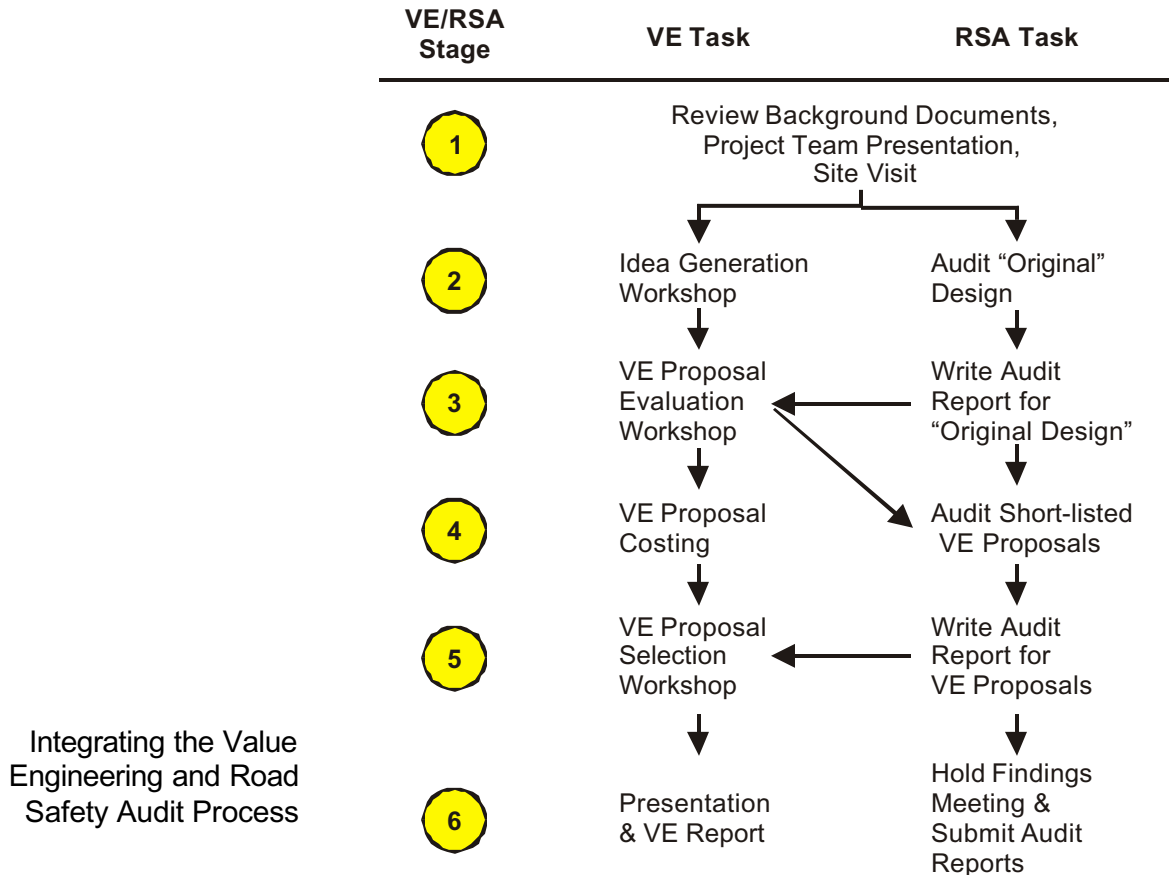
2.5 INTEGRATING AUDITS WITH VALUE ENGINEERING

Value Engineering Definition: the systematic application of recognized techniques by a multi-disciplinary team to identify the function of a product or service, establish a worth for that function, generate alternatives through the use of creative thinking, and provide the needed functions to accomplish the original purpose of the project, reliably, and at the lowest life-cycle cost without sacrificing safety, necessary quality, and environmental attributes of the project. (*US Federal Highways Administration*)

Value engineering is a useful and increasingly popular tool to enhance project value. However, there have been several examples where a value engineering process has resulted in value engineering proposals that may increase the crash risk for road users. It is important to understand the safety implications of relevant value engineering proposals, and this can be achieved by integrating audits with value engineering.

A road safety audit can effectively be integrated with a value engineering process to ensure that the design is delivering the best value to the customers. This can be done in three ways:

1. *During* the value engineering process: by ensuring that independent road safety specialists are on the value engineering team, the design decisions that impact safety can be properly evaluated and the consequence of a decision clearly understood. The safety specialists can highlight and quantify (if possible) the safety risks that may potentially be introduced as a result of value engineering recommendations. These risks then become part of the decision-making process for selecting or rejecting the value engineering proposals.
2. *Integrating* the value engineering and road safety audit process. The idea is to conduct the value engineering workshop and road safety audit of the project concurrently with interaction between the two teams. The interaction allows the road safety audit to independently review the value engineering proposals and provides the value engineering team with safety reviews at critical stages. Separate reports will be produced at the end, and the project owner can make an informed decision based on the recommendations of the value engineering and safety audit teams. This process is illustrated below.



Note: VE denotes Value Engineering, RSA denotes Road Safety Audit

3. *After* the value engineering process. By ensuring that the value engineering recommendations are subjected to a road safety audit prior to these recommendations being incorporated into the design, the project owner and design team will gain a full understanding of the potential safety impacts of the changes to the design. In effect, the road safety audit will append the value engineering report with safety commentary to allow informed decision making by the owner and the design team.

All three of these methods can be used in combination or standalone to ensure that the safety implications of value engineering decisions are explicitly understood by the project owner.