§ 627.5 General principles and procedures.

(a) State VE programs. State transportation departments must establish programs to assure that VE studies are performed on all Federal-aid highway projects on the NHS with an estimated cost of $25 million or more. Program procedures should provide for the identification of candidate projects for VE studies early in the development of the State’s multi-year Statewide Transportation Improvement Program.

(1) Project selection. The program may, at the State’s discretion, establish specific criteria and guidelines for selecting other highway projects for VE studies.

(2) Studies. Value engineering studies shall follow the widely recognized systematic problem-solving analysis process that is used throughout private industry and governmental agencies. Studies must be performed using multi-disciplined teams of individuals not personally involved in the design of the project. Study teams should consist of a team leader and individuals from different specialty areas, such as design, construction, environment, planning, maintenance, right-of-way, and other areas depending upon the type of project being reviewed. Individuals from the public and other agencies may also be included on the team when their inclusion is found to be in the public interest.

(i) Each team leader should be trained and knowledgeable in VE techniques and be able to serve as the coordinator and facilitator of the team.

(ii) Studies should be employed as early as possible in the project development or design process so that accepted VE recommendations can be implemented without delaying the progress of the project.

(iii) Studies should conclude with a formal report outlining the study team’s recommendations for improving the project and reducing its overall cost.

(3) Recommendations. The program should include procedures to approve or reject recommendations and ensure the prompt review of VE recommendations by staff offices whose specialty areas are implicated in proposed changes and by offices responsible for implementing accepted recommendations. Reviews by these offices should be performed promptly to minimize delays to the project.

(4) Incentives. The program may include a VE or cost reduction incentive clause in an STD’s standard specifications or project special provisions that allows construction contractors to submit change proposals and share the resulting cost savings with the STD.

(5) Monitoring. The program should include procedures for monitoring the implementation of VE study team recommendations and VE change proposal recommendations submitted by construction contractors.

(b) State VE coordinators. Individuals knowledgeable in VE shall be assigned responsibilities to coordinate and monitor the STD’s program and be actively involved in all phases of the program.

(c) Use of consultants. Consultants or firms with experience in VE may be retained by STDs to conduct the studies of Federal-aid highway projects or elements of Federal-aid highway projects required under §627.1(a) of this part. Consultants or firms should not be retained to conduct studies of their own designs unless they maintain separate and distinct organizational separation of their VE and design sections.

(D) Funding eligibility. The cost of performing VE studies is project related and is, therefore, eligible for reimbursement with Federal-aid highway funds at the appropriate pro-rata share for the project studied.

(e) In the case of a Federal-aid design-build project meeting the project criteria in 23 CFR 627.1(a), the STDs shall fulfill the value engineering analysis requirement by performing a value engineering analysis prior to the release of the Request for Proposals document.


EFFECTIVE DATE NOTE: At 77 FR 15254, March 15, 2012, part 627 was revised, effective Apr. 16, 2012. For the convenience of the user, the revised text is set forth as follows:

PART 627—VALUE ENGINEERING

Sec.
627.1 Purpose and applicability.
627.3 Definitions.
627.5 Applicable projects.
§ 627.1 Purpose and applicability.

(a) The purpose of this part is to prescribe the programs, policies and procedures for the integration of Value Engineering (VE) into the planning and development of all applicable Federal-aid highway projects.

(b) Each State transportation agency (STA) shall establish and sustain a VE program. This program shall establish the policies and procedures identifying when a VE analysis is required. These policies and procedures should also identify when a VE analysis is encouraged on all other projects where there is a high potential to realize the benefits of a VE analysis.

(c) The STAs shall establish the policies, procedures, functions, and capacity to monitor, assess and report on the performance of the VE program, along with the VEs that are conducted and Value Engineering Change Proposals (VECP) that are accepted. The STAs shall ensure that its subrecipients conduct VE analyses in compliance with this part.

§ 627.2 Definitions.

The following terms used in this part are defined as follows:

Bridge project. A bridge project shall include any project where the primary purpose is to construct, reconstruct, rehabilitate, repair, or restore a bridge.

Final design. Final design has the same meaning as defined in 23 CFR 636.103.

Project. A portion of a highway that a STA or public authority proposes to construct, reconstruct, or improve as described in the preliminary design report or applicable environmental document. A project is defined as the logical termini in the environmental document and may consist of several contracts, or phases of a project or contract, which are implemented over several years.

Total project costs. The costs of all phases of a project including environment, design, right-of-way, utilities and construction.

Value Engineering (VE) analysis. The systematic process of reviewing and assessing a project by a multidisciplinary team not directly involved in the planning and development phases of a specific project that follows the VE Job Plan and is conducted to provide recommendations for:

1. Providing the needed functions, considering community and environmental commitments, safety, reliability, efficiency, and overall life-cycle cost (as defined in 23 U.S.C. 106(1)(2));
2. Improving the value and quality of the project; and
3. Reducing the time to develop and deliver the project.

Value Engineering (VE) Job Plan. A systematic and structured action plan for conducting and documenting the results of the VE analysis. While each VE analysis shall address each phase in the VE Job Plan, the level of analysis conducted and effort expended for each phase should be scaled to meet the needs of each individual project. The VE Job Plan shall include and document the following seven phases:

1. Information Phase: Gather project information including project commitments and constraints.
2. Function Analysis Phase: Analyze the project to understand the required functions.
3. Creative Phase: Generate ideas on ways to accomplish the required functions which improve the project’s performance, enhance its quality, and lower project costs.
4. Evaluation Phase: Evaluate and select feasible ideas for development.
5. Development Phase: Develop the selected alternatives into fully supported recommendations.
6. Presentation Phase: Present the VE recommendation to the project stakeholders.
7. Resolution Phase: Evaluate, resolve, document and implement all approved recommendations.

Value Engineering Change Proposal (VECP). A construction contract change proposal submitted by the construction contractor based on the VECP provision in the contract. These proposals may improve the project’s performance, value and/or quality, lower construction costs, or shorten the delivery time, while considering their impacts on the project’s overall life-cycle cost and other applicable factors.

§ 627.5 Applicable projects.

(a) A VE analysis shall be conducted prior to the completion of final design on each applicable project that utilizes Federal-aid highway funding, and all approved recommendations shall be included in the project’s plans, specifications and estimates.

(b) Applicable projects shall include the following:

1. Each project located on the National Highway System (NHS) (as specified in 23 U.S.C. 103) where the estimated total project cost is $25 million or more that utilizes Federal-aid highway funding;

2. Each bridge project located on or off of the NHS where the estimated total project cost is $20 million or more that utilizes Federal-aid highway funding;

3. Any major project (as defined in 23 U.S.C. 106(b)), on or off of the NHS, that utilizes Federal-aid highway funding in any contract or phase comprising the major project;

4. Any project for which a VE analysis has not been conducted and a change is made to
the project’s scope or design between the final design and the letting which results in an increase in the project’s total cost exceeding the thresholds identified in paragraphs (b)(1), (2) or (3) of this section; and
(5) Any other Federal-aid project the FHWA determines to be appropriate.
(c) An additional VE analysis is not required if, after conducting the VE analysis required under this part for any project meeting the criteria of paragraph (b) of this section, the project is subsequently split into smaller projects in the design phase or if the project is programmed to be completed by the letting of multiple construction projects. However, the STA may not avoid the requirement to conduct a VE analysis on an applicable project by splitting the project into smaller projects, or multiple construction projects.
(d) The STA’s VE Program’s policies and procedures shall identify when any additional VE analysis should be considered or conducted in the planning and development of transportation projects.
(e) For projects utilizing design-build and other alternative project delivery methods for which final design is not complete prior to the release of the final request for proposals or other applicable solicitation documents, the estimated total cost for purposes of the VE program under which VE analyses are conducted and documented in a final VE report, including projects administered by local public agencies, and all approved recommendations are implemented and documented in an annual report to the FHWA consisting of a summary of all applicable projects requiring a VE analysis, the accepted VECPs, and VE program activities and functions. The VE Coordinator’s responsibilities should include establishing and maintaining the STA’s VE program activities and functions; facilitating VE training; ensuring VE analyses are conducted on applicable projects; monitoring, assessing, and reporting on the VE analyses conducted and VE program; participating in periodic VE program and project reviews; submitting the required annual VE report to the FHWA; and supporting the other elements of the VE program.
§ 627.7 VE programs.
(a) The STA shall establish and sustain a VE program under which VE analyses are conducted for all applicable projects. The STA’s VE program shall:
(1) Establish and document VE program policies and procedures that ensure the required VE analysis is conducted on all applicable projects, and encourage conducting VE analyses on other projects that have the potential to benefit from this analysis;
(2) Ensure the VE analysis is conducted and all approved recommendations are implemented and documented in a final VE report prior to the project being authorized to proceed to a construction letting;
(3) Monitor and assess the VE Program, and disseminate an annual report to the FHWA consisting of a summary of all approved recommendations implemented on applicable projects requiring a VE analysis, the accepted VECPs, and VE program activities and functions;
(4) Establish and document policies, procedures, and contract provisions that identify when VECP’s may be used; identify the analysis, documentation, basis, and process for evaluating and accepting a VECP; and determine how the net savings of each VECP may be shared between the agency and contractor;
(5) Establish and document policies, procedures, and controls to ensure a VE analysis is conducted and all approved recommendations are implemented for all applicable projects administered by local public agencies; and ensure the results of these analyses are included in the VE program monitoring and reporting; and
(b) STAs shall ensure the required VE analysis has been performed on each applicable project including those administered by subrecipients, and shall ensure approved recommendations are implemented into the project’s plans, specifications, and estimate.
(c) STAs shall designate a VE Program Coordinator to promote and advance VE program activities and functions. The VE Coordinator’s responsibilities should include establishing and maintaining the STA’s VE policies and procedures; facilitating VE training; ensuring VE analyses are conducted on applicable projects; monitoring, assessing, and reporting on the VE analyses conducted and VE program; participating in periodic VE program and project reviews; submitting the required annual VE report to the FHWA; and supporting the other elements of the VE program.
§ 627.9 Conducting a VE analysis.
(a) A VE analysis should be conducted as early as practicable in the planning or development of a project, preferably before the completion of the project’s preliminary design. At a minimum, the VE analysis shall be conducted prior to completing the project’s final design.
(b) The VE analysis should be closely coordinated with other project development activities to minimize the impact approved recommendations might have on previous agency, community, or environmental commitments; the project’s scope; and the use of innovative technologies, materials, methods, plans or construction provisions.
(c) For projects utilizing design-build and other alternative project delivery methods that will be advertised prior to the completion of final design, the STA or local public agency shall conduct a VE analysis prior to the release of the final Request for Proposals or other applicable solicitation documents.
(d) STAs shall ensure the VE analysis meets the following requirements:
(1) Uses a multidisciplinary team not directly involved in the planning or design of the project, with at least one individual who has the training and experience with leading a VE analysis;
(2) Develops and implements the VE Job Plan;
(3) Produces a formal written report outlining, at a minimum:
   (i) Project information;
   (ii) Identification of the VE analysis team;
   (iii) Background and supporting documentation, such as information obtained from
         other analyses conducted on the project (e.g., environmental, safety, traffic
         operations, constructability);
   (iv) Documentation of the stages of the VE Job Plan which would include documenta-
         tion of the life-cycle costs that were analyzed;
   (v) Summarization of the analysis conducted;
   (vi) Documentation of the proposed recommendations and approvals received at the
         time the report is finalized; and
   (vii) The formal written report shall be retained for at least 3 years after the comple-
         tion of the project (as specified in 49 CFR 18.42).

(e) For bridge projects, in addition to the requirements in paragraph (d) of this sec-
   tion, the VE analyses shall:
   (1) Include bridge substructure and superstructure requirements that consider alter-
       native construction materials; and
   (2) Be conducted based on:
       (i) An engineering and economic assess-
           ment, taking into consideration acceptable
           designs for bridges; and
       (ii) An analysis of life-cycle costs and du-
           ration of project construction.

(f) STAs and local public agencies may em-
    ploy qualified consultants (as defined in 23
    CFR 172) to conduct a VE analysis. The con-
    sultant shall possess the training and experi-
    ence required to lead the VE analysis. A con-
    sulting firm or individual shall not be used
    to conduct or support a VE analysis if they
    have a conflict of interest (as specified in 23
    CFR 1.33).

(g) VECPs, STAs, and local public agencies
    are encouraged to use a VECP clause (or
    other such clauses under a different name) in
    an applicable project’s contract, allowing
    the construction contractor to propose
    changes in the project’s plans, specifications,
    or other contract documents. Whenever such
    clauses are used, the STA and local author-
    ity will consider changes that could improve
    the project’s performance, value and quality,
    shorten the delivery time, or lower construc-
    tion costs, while considering impacts on the
    project’s overall life-cycle cost and other ap-
    plicable factors. The basis for a STA or local
    authority to consider a VECP is the analysis
    and documentation supporting the proposed
    benefits that would result from imple-
    menting the proposed change in the project’s
    contract or project plans.

(h) Proposals to accelerate construction
    after the award of the contract will not be
    considered a VECP and will not be eligible
    for Federal-aid highway program funding participation. Where it is necessary to accel-
    erate construction, STAs and local public
    agencies are encouraged to use the appro-
    priate incentive or disincentive clauses so
    that all proposers will take this into account
    when preparing their bids or price proposals.

PART 630—PRECONSTRUCTION PROCEDURES

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   Agreements

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