

# **USACE Value Engineering**

## **Manual of Practice**

**Foreward.** This Value Engineering (VE) Manual of Practice has been prepared to provide guidance to USACE District Value Engineering Officers (VEOs) on their specific roles and responsibilities in executing the USACE VE program. It is USACE-specific, with guidance on:

- which projects require VE studies;
- scoping, budgeting, and scheduling of VE studies within the Project Management Plan;
- VE program planning, management and execution, including USACE metrics;
- records management;
- quality control and quality assurance; and
- available support resources.

Information on how to conduct a value engineering study is referenced, but is not described within this manual.

This is a living document. As USACE policies and practices evolve and change, this document will be updated accordingly.

### **Value Engineering Program Intent**

**For the Customer** – Externally, the intent of the USACE Value Management / Value Engineering Program is to focus on improving project value by identifying the most resource-efficient way(s) to reliably accomplish a function that meets the performance expectations.

**For the Corps of Engineers** – Internally, the intent of the USACE Value Management / Value Engineering Program is to enhance the USACE image by creating a value-based organizational culture through increased awareness and program credibility, systemically integrating the value management process, achieving leadership and Project Delivery Team buy-in by delivering value-added results.

**I. Responsibilities of the District Value Engineering Officer.** This section provides a brief summary of the responsibilities and expectations of the District Value Engineering Officers (VEOs) within the Corps of Engineers. The information in the Manual of Practice has been written to assist the Value Engineer Officers to meet these responsibilities.

- Act as Designated VE Officer and Subject Matter Expert (SME) within your assigned District(s)/Center
- Develop local VE processes to execute program in accordance with USACE guidance and Regional policies
- Establish and execute Annual VE plans for your District(s)/Center and provide to your MSC VE Program Manager. Provide updates to annual workplan as required/requested.
- Coordinate VE study costs and schedules with PMs
- Coordinate VE Program costs in annual District budget
- Facilitate VE studies internally, or coordinate with PM and Contracting to award VE contract/task orders
- Conduct Quality Control of facilitated VE studies, or conduct Quality Assurance of contracted VE studies
- Be knowledgeable about the waiver process and when a waiver may be the appropriate course of action for a specific project/contract. Discuss potential waivers with MSC VE PgM to determine if waiver is the best solution for project.
- Maintain records compliance
- Report District VE activities to the District Commander and to your MSC VE Program Manager
- Educate district leadership, project managers, and technical staff on all aspects of Value Engineering

## II. What Projects Require Value Engineering?

### A. Program Authority Lines

1. Laws
  - a. FAR Part 48, Value Engineering
  - b. FAR Part 52.248-1 Value Engineering
  - c. U.S. Code Title 10, Armed Forces
  - d. U.S. Code Title 41, Section 432
  - e. U.S. Code Title 42, Public Health and Welfare, Chapter 103
  - f. Water Resources Development Act of 1986 (PL 99-662), 33 USC 2288
  - g. U.S. Code Title 41, Section 1711, Value Engineering (P L 111-350, 124 Stat. 3718)
  - h. U.S. Code Title 43, Section 4306, Additional Reform Provisions (PL 104-106)
2. Policies
  - a. OMB Circular A-131
  - b. OMB Capital Programming Guide, Supplement to Circular A-11, Part 7, Appendix 8
3. Guidance
  - i. Department Of Defense (DoD) 4245.8-H, Value Engineering Handbook
  - ii. USAF/A7CP Construction PgmMP agreement between AF and USACE
  - iii. PMBP Handbook, REF 8023G Value Management Plan
  - iv. USACE Quality Management System (QMS)
4. Regulations
  - a. ER 5-1-11, U.S. Army Corps of Engineers Business Process, Nov 2006
  - b. ER 11-1-321, Change 1, USACE Army Programs, Value Engineering Jan 2011
  - c. ER 1110-1-12, Quality Management, Sep 2006
  - d. ER 1110-345-100, Design Policy for Military Construction Feb 1994; paragraph 6.q
  - e. ER 1110-2-1150, Engineering and Design for Civil Works Aug 1999; (Sections 13.14 and 14.7)
    - 1) Paragraph 13.14, Value Engineering, requires that a VE study be performed on the earliest document available that satisfies the functional requirement of the project and includes a MCACES cost estimate. This document also states that the PDT determines if the initial VE study is conducted during the feasibility phase or delayed until PED phase. More recent guidance (ER 11-1-321)\_ requires that two VE studies are conducted on Civil Works projects; one during feasibility and one during PED.
    - 2) Paragraph 14.7, Value Engineering, provides guidance on conducting VE studies. Note that the threshold of \$2 million has been lowered to \$1 million to be consistent with OMB Circular A-131.

### A. Requirements by program

#### 1. Civil Works Program.

- a. **Construction Programs or Projects with Potential Total Cost equal to or exceeding \$10M.** VE studies shall be performed in both planning (feasibility) and design phases of project development as follows:
  - 1) Pre-authorization (Feasibility Phase). At least one VE study oriented toward planning level issues shall be performed during the feasibility phase of the project, as part of the plan formulation process prior to the selection of final

alternatives. This is generally during the latter part of “Identification of Measures” and the early part of “Formulation of Alternative Plans.”

- 2) Authorized Project(Design/Construction Phase). A VE study shall be performed on all authorized projects, project phases, or project features no later than at the 35% completion of the design (usually early in the Design Report or equivalent activity) and shall be in addition to any feasibility phase VE study noted above. IUSACE has adopted a policy in ER 11-1-321 that under no circumstances shall a contract for water resources project over \$10 million be awarded prior to completion (including complete disposition of proposals) of a formal VE study of the project design.
  - b. **Construction Programs or Projects with Total Authorized Cost exceeding \$1M but less than \$10M.** A VE study shall be performed on all projects and individual contracts no later than 35% completion of the design; additional earlier VE studies should also be considered when appropriate.
  - c. **Post-Authorization Changes (PACs).** For all Post-Authorization Change Reports (e.g., LRRs, GRRs, PACRs), a VE study shall be performed during the PAC report development.
  - d. **Operation and Maintenance Projects/Programs and All Other Programmatic Procurements.** Studies are required as indicated above. Recognizing that it may be impractical to study the vast number of District O&M projects/programs, VEOs should consider utilizing VE studies on a combination of projects and/or program applications.
  - e. **Alternative Acquisition and Procurement.** All alternative acquisitions and procurements (design-build, early contractor involvement, adapt-build etc.) must be studied in accordance with the above pre and post authorization project requirements.
2. **Military Construction** . Projects with a Current Working Estimate (CWE) over \$1M shall have a VE study when it is appropriate. Waivers shall be kept to a minimum and requested only in unusual cases, with the request to be made at the beginning of design action.
  - a. **Design-Bid-Build.** A minimum of one VE study will be performed as early in the design process as possible, but no later than 35% design. The purpose of the study will be to optimize the design concepts, identify changed conditions, validate that the project is in accordance with the program documents (e.g., DD Form 1391), and to offer recommendations to avoid potential issues with cost and schedule growth.
  - b. **(Code 7) Design-Build.** A Code 7 project has been authorized for preparation of a Request for Proposal (RFP) for a Design-Build contract. In addition to the site/infrastructure, a Value Management Workshop or VE study will preferably be performed at the preliminary (draft) stage of RFP development, but at least one study shall be performed no later than the final stage of the RFP preparation prior to project advertising. The function of this study will be to identify and resolve problems in the design criteria, focus on performance as much as possible, insure consistency in criteria and clarity of intent throughout the RFP, identify any changed conditions, and control cost and schedule growth.
  - c. **Centers of Standardization Program/Projects.**

- 1) **(Code 7) Design-Build Projects.** VE of Army Standard/Standard Design features (functional and Operational) for standard facilities will not be undertaken when a VE study completed in the last six (6) years (conducted by/for the Center of Standardization, as required in the current FY OPORD), and conducted within the last six years, is available through the VE Library on Sharepoint. A Geographic District (GD) VE study of non-standard facilities and project site design for COS projects shall be conducted in conformance with established guidelines. GD VE studies of standard COS facilities shall be conducted either prior to or at completion of D-B RFP (for Site, Infrastructure, energy/sustainability, etc), excluding Functional and Operational requirements of the Army Standard/Standard Design.
- 2) **(Code T) Adapt-Build and (Code 6) Design-Bid-Build.** These are procurement packages containing partially complete plans and specifications; a Code T project has been authorized for preparation of a Request for Proposal (RFP) for an Adapt-Build contract, using an initial standard design from a Center of Standardization (CoS), and a Code 6 project has been authorized for final design. All project documents will be value engineered, including standard formatted, simplified or short form specifications (when developed). Currently each COS-prepared A-B facility design and construction plans and specification package is unique in some measure. A facility may contain standardized plans and specification for a specific installation, but some components (e.g., facility orientation, structure, systems, facility exterior skin, energy requirements, etc.) will be project specific and should be studied by the Geographic District at the 35% design stage.
3. **Readiness and Contingency Operations**
  - a. **Civil Works Emergency Management Projects.** Studies are required as indicated above. However, where there are situations encountering life safety and/or extensive economic or environmental damage in an emergency situation, waivers may be considered.
  - b. **Overseas Contingency Operations.** Studies are required in accordance with the guidance above for MILCON projects. However, the requirement may be waived for tactical reasons or for expediency in a war zone by the Combatant Commander.
4. **Air Force.** VE studies will be conducted under guidance presented in Air Force Instruction 32-1023, paragraph 2.2.1.3.2, dated 21 April 2010. An informal (in-house, Agent) VE analysis incorporating VE principles and guidelines shall be conducted for all projects over \$2 million. A formal, third-party VE study shall be conducted for each project with a Programmed Amount (PA) over \$10 million. Exceptions to VE studies (for AF projects over \$10 million) include design-build and classified projects.
5. **Hazardous Toxic & Radioactive Waste (HTRW)/Military Munitions Response Program (MMRP) .** The Value Methodology shall be applied to the selected alternative after the Decision Documents or Record of Decision (ROD) as a minimum for all projects with a CWE greater than \$1 million, including those that will use Performance Based Contracts (PBC). Value Management shall be accomplished in each delivery order of pre-placed contracts. Such recommendations are to be used in pre-placed contract negotiations.

6. **Support for Others (SFO) – Interagency and International Services (IIS).** Projects for other federal agencies and which use federally-appropriated funds shall follow guidance given in OMB Circular A-131. Current guidance is that projects with a CWE greater than \$1 M shall have a VE study, generally following Civil Works or MILCON procedures.
- a. If a federal customer agency (using federally-appropriated funds) has specific VE criteria, those should be followed; these VE criteria should be sent to the PM and District VEO, and maintained in project files.
    - 1) **Department of Energy (DOE).** Under DOE O 430.1B “Real Property Asset Management,” a VE assessment (i.e., VE workshop) shall be conducted whenever total contract value exceeds \$5 million. For contracts less than \$5 million, the site/field manager is to assess the application of VE requirements based on complexity, risks, and potential economic benefits.
    - 2) **Power Marketing Agencies.** Although Power Marketing Agencies (such as Bonneville Power Administration) are under the Department of Energy, they are excluded from the acquisition requirements under DOE O 430.1B (above). The determination of whether VE studies will be conducted will be on a case-by-case basis.
7. **Foreign Military Sales (FMS)/Foreign Military Financing (FMF).**
- a. A VE study is not required for FMS projects since these use Host Nation funds, but studies should be encouraged.
  - b. VE studies are required for FMF projects in accordance with CECC-G Memorandum dated 06 October 2011. However, some classes of FMF projects may be excluded from using Value Engineering standards at the determination of the Chief of Value Engineering. The referenced memorandum may be found at:  
<https://tadintranet.tad.usace.army.mil/SiteDirectory/BusinessTechnical/Shared%20Documents/Value%20Engineering/FMF-Grogan%20Memo-%202011-10-06.pdf> .
- 2) **Other Projects/Programs/Procurements.** A Value Management Plan will be developed in accordance with guidance stated above. A VE Workshop or VE study shall be performed for any procurement greater than \$1M. VE should be performed as early in the planning/design/acquisition process as possible.

### III. Planning for Value Engineering (what is specific VE plan for project?)

- A. **VE Process Integration.** VE Process Integration begins with the development of the Value Management Plan, an integral component of the overall Project Management Plan (PMP) developed for each project in accordance with ER 5-1-11. PMBP guidance is shown in PMBP REF 8023G Value Management Plan. The **PM** includes the VEO as part of the PDT. The VEO will be the active PDT member who plans, executes, and documents the VE studies. The PM and the VEO will work together to assure that the VMP is included in the PMP; to schedule and budget for the VE workshop; to ensure full documentation of the VE workshop, or to ensure a waiver request is prepared; and to ensure implementation of accepted VM/VE study proposals (or else to ensure a request for approval for non-implementation of all VM/VE proposals with potential savings over \$1 million has been made through the District Commander. ) A sample form for documenting disposition of VE study proposals is included in Attachment XXX.
- B. **Project-Specific Value Management Plans.**
- A. Within USACE, every project is to have a Project Management Plan (PMP) which provides the framework for work activities throughout the life cycle of the project. The PMP serves as the planning, communications, and quality management tool for the project. The USACE PMBP Manual provides the minimum requirements for Project Management Plans including the Value Management Plan (VMP).
- B. The **USACE PMBP Manual, REF 8023G**, provides guidance on responsibilities for preparing and implementing the VMP and required content for the VMP document. At minimum, a [VMP](#) shall:
- establish overall goals of the VM and VE effort for a program or project (e.g., comply with Federal law, attempt to identify possible cost savings and project enhancement options);
  - specify objectives of the VM and VE effort (e.g., validate current alternative strategies; identify and address pertinent issues that may impact the implementation and effectiveness of current alternative strategies; provide recommendations for future research needs); and
  - describe the execution of the VM and VE effort (e.g., scheduling and funding of VE studies, planning or design charrettes; VM and VE activities to occur during the plan formulation, integrated into the ATR between development of measures and alternatives, development and technical review activities of a project's life cycle).
  - Even if a VE study is not to be conducted, VM/VE should be **explicitly addressed** in the PMP. If it is determined by the VEO and the PM that the project does not require a VE study (i.e. project cost is less than VE requirements), it should be so stated in the VMP, together with the reason the VE study is not required. Similarly, if a waiver is to be requested, this should be addressed in the VMP.
- B. **Timing of Studies.** VE studies shall be implemented early in the project development process and used as an integral part of project planning and design development. The following table summarizes the timing, estimated duration, and relative Return on Investment of studies conducted at different points in a project's planning and design cycle. Figure 4-1 also illustrates that the potential for VE savings is greatest during the planning

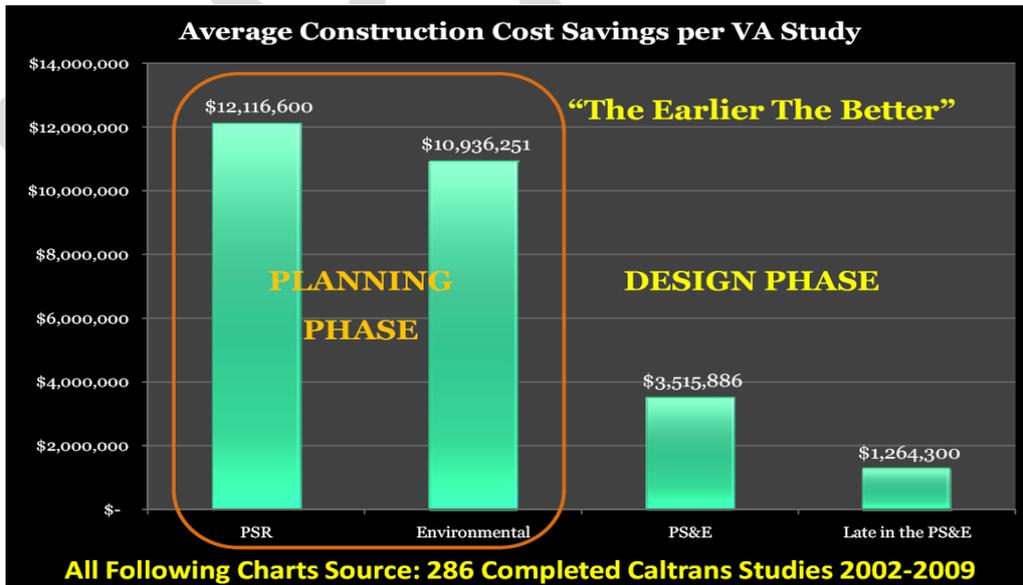
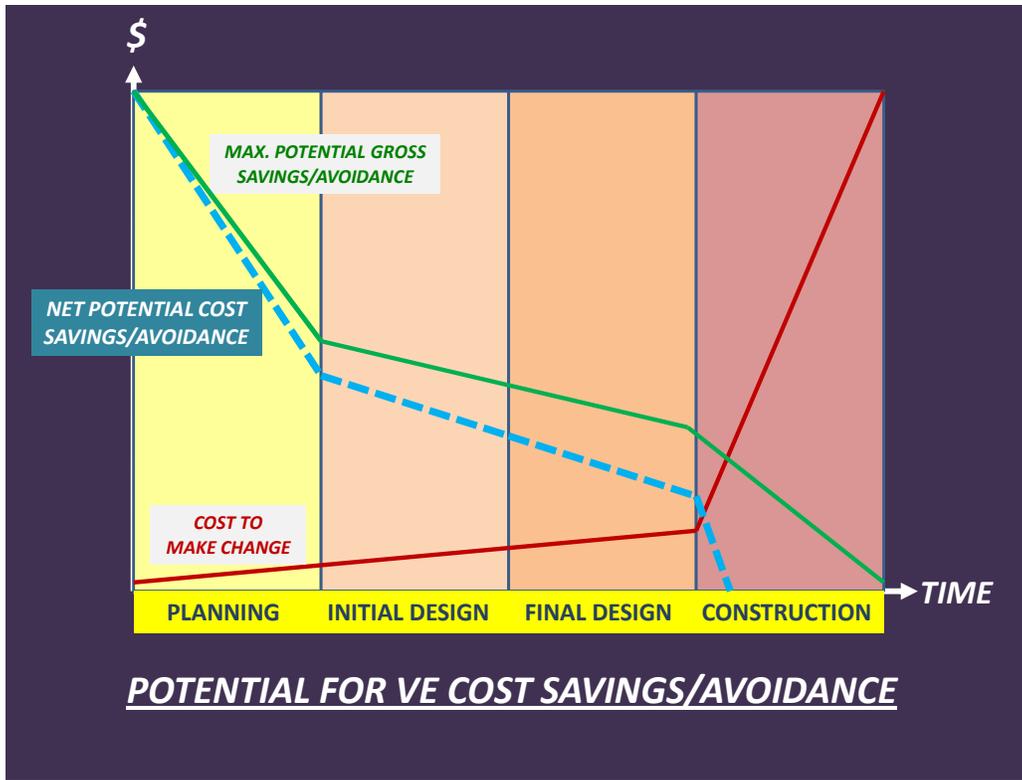
and early design phases of a project. This is further illustrated in Figure 4-2, which shows average construction cost savings per VE study for 286 completed VE studies conducted by Caltrans during 2002-2009. The later a study is conducted, the less chance there will be for implementation of proposals, due to the cost of designing and/or implementing changes.

## TIMING OF STUDIES

**EARLIER**

Impact of Results	Timing of Study	Estimated Duration	
↑	Quick Analysis of VE Potential/ Confirmation of Prev. VE Efforts	1-3 day look by VEO	
	Alt. Develop(CW) / Planning Charrette – Code 3 (MP) i.e. IVBC	5-10 days if integrated w/other processes	<b>ROI Greatest</b>
	Plan Formulation(CW) / up to 35% (MP)	3-5 days	ROI Good
	PED (CW) / 35%-60% (MP)	5-7 days	ROI Moderate
	Late PED (CW) / 60%-90% (MP) STRONGLY DISCOURAGED – STUDY IS EFFECTIVELY ‘MISSED’	5-7 days	ROI Least
	Program Studies, i.e., Dredging/ O&M (CW) or Standard Designs(MP)	7-14 days	
	Special Studies (i.e., MT, Organizational, Strategic Planning)	Varies	

**LATER**



- Scoping.** The actions required to complete a Value Engineering workshop for a specific project should be appropriate to the size, complexity, and nature of the project. Simple projects with only a few major items of work typically do not require the same level of analyses as complex projects with several major items of work. The type and complexity of the project will drive the composition of the VE study team, i.e. technical disciplines to be included, level of expertise, etc. The proposed method of design (in-house, A/E, etc) and proposed acquisition strategy for the project will also help determine the appropriate VE activities. For example, a Design-Build project may focus VE efforts on the Request for Proposals (RFP) that is prepared, whereas an in-house Design-Bid-Build project may include VE efforts during a planning or study phase when various alternatives are being identified and evaluated, and again in the early stages of design (at or before 35% design).
- C. **Budgeting.** Costs for the identified VE activities are estimated and used for budgeting purposes. These costs depend on the project scope, and should include VE workshop facilitation; preparatory work for the workshop(s); VE study team travel and labor during the VE workshop (estimated durations are in the above table); post-workshop efforts; preparation of VE Report(s) and presentations. If the VE study is conducted by an A/E, the cost of the task order contract activities should be included as well.
- D. **Programmatic VE Studies.** For programs, projects or procurements greater than a million dollars and with similar functions (e.g., dredging, ecosystem restoration), it is recommended that a programmatic VE study be performed.
- E. **Waivers.** Paragraph 8 of [ER 11-1-321](#), Change 1 describes conditions for which a waiver may be requested and who is responsible for developing and approving waivers for Civil Works and Military Program projects. Waivers require a strong justification, such as emergency repair projects that have loss of life or high economic or environmental impacts. Under no condition will a waiver be granted for a CW Construction or CW Operation and Maintenance project with over \$10 million construction costs. If a waiver request is being considered, the District VEO should initially coordinate with the Division VE Program Manager.
- G. **Loading into P2 and VERS.** The PM/PDT and the VEO collaboratively determine schedule and resources required for VE studies; this information is then entered in P2 by the PM, including the scheduled VE study start and finish milestone dates. The scheduled VE study milestones for the current FY are included in the district Annual Plan. The total number of scheduled VE studies establishes the baseline goal for the Program Coverage Metric.

The VEO should also input project information in VERS (described elsewhere in this manual).

#### IV. District Annual Value Program Management Plan

A. **Identifying District VE Workload.** While it is the the PM's responsibility to ensure scheduling and resourcing of VE studies, the VEO must take an active role in assuring that this is done. The VEO should notify/educate all PMs about program-specific VE requirements. In order to identify the annual VE workload, the VEO should then review available program and project reporting tools to ensure that VE studies are being properly planned and scheduled. This review must be done at the start of each fiscal year, and the VE program workload revisited throughout the year ( updating as required). The following data sources may be used to verify that required VE studies are being properly identified.

1. **Discussions with Project Managers.** The VEO will meet with Project Managers to establish VE requirements and strategy for each project. During these discussions, the schedule for the VE activity will be established; the PM will then enter the VE milestones in the P2 project schedule. The VEO can then use the following tools to verify that the VE studies have been properly scheduled and resourced for reporting purposes.
2. **Value Engineering Reporting System (VERS).** This database, further described in the section on Program Support/VE Tools, is used for tracking and reporting VM/VE Program Requirements and Status, in accordance with DoD/OMB Quarterly and Annual Statistics Summary requirements, ER 11-1-321 Change 1. It allows for roll-up of District-level data to the MSC and HQ levels, and displays project data and current FY and future FY project milestones from P2. The VEO enters cost avoidance/cost savings, program coverage data, as well as program information not related to discrete VE studies, including VE Program Costs, personnel, training, and Good News.

VERS interfaces daily with P2 and imports the following project and VE milestones:

##### Military Program

- ML285 – VE Study Start
- ML290 – VE Study Finish/Complete
- ML020 - PMP Start
- ML060 - Design Start
- CC800 – Contract Award (Construction)

##### Civil Works Program

- CW192 – VE/VM Study/Workshop Start (Study Phase-Feasibility, GRR,LRR,PACR)
- CW195 – VE/VM Study/Workshop Complete (Study Phase-Feas, GRR, LRR, PACR)
- CW285 – VE/VM Start (Design Phase)
- CW290 – VE/VM Complete (Design Phase)
- CW030 - PMP Start
- CW140 - Feasibility Start
- CW300 - Plans and Specs Start
- CC800 – Contract Award (Construction)

The above milestones for a given FY can be viewed in VERS so that the VEO does not have to query P2 directly. The folder tree structure is shown as follows:

- ▶ Projects
  - ▶ District/MSC
    - ▶ P2 Milestones
      - ▶ CWProject Status
        - ▶ FY xxxx
          - ▶ PMP Start (CW030)
          - ▶ Feasibility Start (CW140)
          - ▶ Plans and Specs Start (CW300)
          - ▶ Contract Award (CC800)
          - ▶ VM/E Study
            - ▶ Feasibility (CW192/CW195)
            - ▶ Plans and Specs (CW285/CW290)
- ▶ MP Project Status
  - ▶ FY xxxx
    - ▶ PMP Start (ML020)
    - ▶ Design Start (ML060)
    - ▶ Contract Award (CC800)
    - ▶ VM/E Study (ML285/ML290)
- ▶ Acquisition Strategy Plan
  - ▶ FY xxxx

For a given FY and Program (CW or MIL), the VE milestones from P2 are available in VERS for individual projects (although a summary report of VE milestones for the FY is not yet available). Viewing the VE milestones by project will verify that the District Workload component of the Annual Plan is accurately reflected in P2 for a given FY.

3. **P2.** P2 is the Corps of Engineers Project Management System that enables the Project Management Business Process (PMBP) by providing an enterprise (USACE wide) database to create and manage project data and by providing common project, activity and milestone codes to facilitate reporting. VERS displays P2 project and VE milestones (PMP Start, Design Start, Contract Award CC800, VE Milestones CW195, CW290, and ML290) for VE study scheduling and reporting purposes.

The VEO does not necessarily need to know how to operate P2. However, when the VEO is discussing the VE studies with the PM, the VEO should know how the VE milestones relate to other significant project activities and milestones. For program coverage, milestones **CW192/CW 195** would occur during the Civil Works study phase, and **CW 285/CW 290** during the design phase; **ML 285/ML 290** would be used for MILCON projects. **Milestone CC800 – Contract Award (Construction)** would be used to verify that the VE studies has been marked as ‘Completed’ in VERS; once the contract is awarded, Cost Avoidance/Cost Savings can then be claimed.

### Civil Works Program

Milestone Code	Milestone Name	VE Related Comments
CW030	PMP Start	Value Mgmt Plan to be included in PMP
CW040	PMP Approval	Value Mgmt Plan should be included
CW140	Report/Study Start	VE will be required during feasibility study
CW160	Submit Final Report	VE should be complete
CW192	VE/VM Study/Workshop Start (Study Phase)	Should fall after CW140 date
CW195	VE/VM Study/Workshop Complete (Study Phase)	Should fall before CW160 date
CW300	Plans & Specs Start	VE required during design phase
CW320	BCOE Review Complete	PM statement/certification that appropriate VE actions have been completed should accompany the BCOE document and any PACR, LRR, GRR document
CW330	Plans & Specs Approval	VE should be complete
CW285	VE/VM Start (Design Phase)	Should fall after CW300 date
CW 290	VE/VM Complete (Design Phase)	Should fall before CW320 date
CC800	Contract Award (Construction)	

### Military Program

Milestone Code	Milestone Name	VE Related Comments
ML010	Start Development of PMP	Value Mgmt Plan to be included in PMP
ML020	PMP Approval	Value Mgmt Plan should be included
ML110	Concept Design Complete (35%)	VE required during design
ML120	Start Final Design	VE should be complete
ML190	BCOE Certification	PM statement/certification that appropriate VE actions have been completed should accompany the BCOE document
ML285	VE Study Start	Should fall after ML110 date
ML290	VE Study Finish	Should fall before ML190
CC800	Contract Award (Construction)	

Activities and Milestones Used in P2

4. **USACE WebCMI.** This tool is convenient for identifying scheduled construction contract awards for the MILCON Program and can be accessed at <https://ppdsintra.usace.army.mil/ppds/home/>  
 Select your Region (either from word list at top of screen or from map)  
 Select your District  
 Expand "CMR" which is located on the left side of screen  
 Select Military CMR  
 Select MP-1a Program Execution (FYxx Forecast of Construction Awards)  
 Select Summary of all FYxx and Prior Year Projects  
 The screen now shows All Programs – FYxx & Prior Unawarded. The display includes a graph and table (showing forecast, actual and scheduled awards by month). Scheduled construction contract awards can be obtained by clicking on the box under "Scheduled" – this can be done for each month of the FY. The result is the list of projects (sorted by MSC and District) with CC800 milestones in that month. Projects are listed with their corresponding P2 number; clicking on the project name takes you to the Military Project Datasheet, where more detailed project information can be accessed.
5. **Acquisition Strategy Plan (ASP).** The ASP report is generated under PMBP Portal "General Reports" and is used for acquisition planning in accordance with PMBP PROC2050 and PROC2060. ASP data includes contracts greater than \$100,000. Data can be filtered by start/end dates (given FY or FYs), resource name (CONSTSVCS, OTHCONSVCS, O&MCONT), program (Military, Civil Works, IIS, Environmental) and costs  $\geq$  \$10M. The report is used to obtain estimated contract amounts to enable verification of compliance with public law and with the USACE policy for the Civil Works program. It provides an estimate of the number of contracts scheduled for award  $>$ \$10M. CC800 project milestones represent the scheduled/actual award date for a contract, but CC800 milestones are not currently linked to a contract amount, whereas ASP includes estimated contract amount. (NOTE: Access to the ASP now requires access permission to the PMBP Portal and the Enterprise Data Warehouse (EDW). If the VEO does not have these permissions, he could work with a district P2 coordinator/scheduler to run the ASP report.)
6. **District Annual Plan.** These activities are captured in a spreadsheet format (see following table) which identifies project, P2 number, VE milestones, cost of VE activities and method of accomplishment (In-house or Contract). This identifies the projects included in the District Annual VE Plan which is used to manage the program and is also submitted to the MSC VE PgM for roll-up into the Regional VE Plan each year. A review of the scheduled studies should be conducted periodically (ideally, near the end of each quarter) to update the Annual Plan.

## B. Indefinite Delivery Indefinite Quantity (IDIQ) Contracts

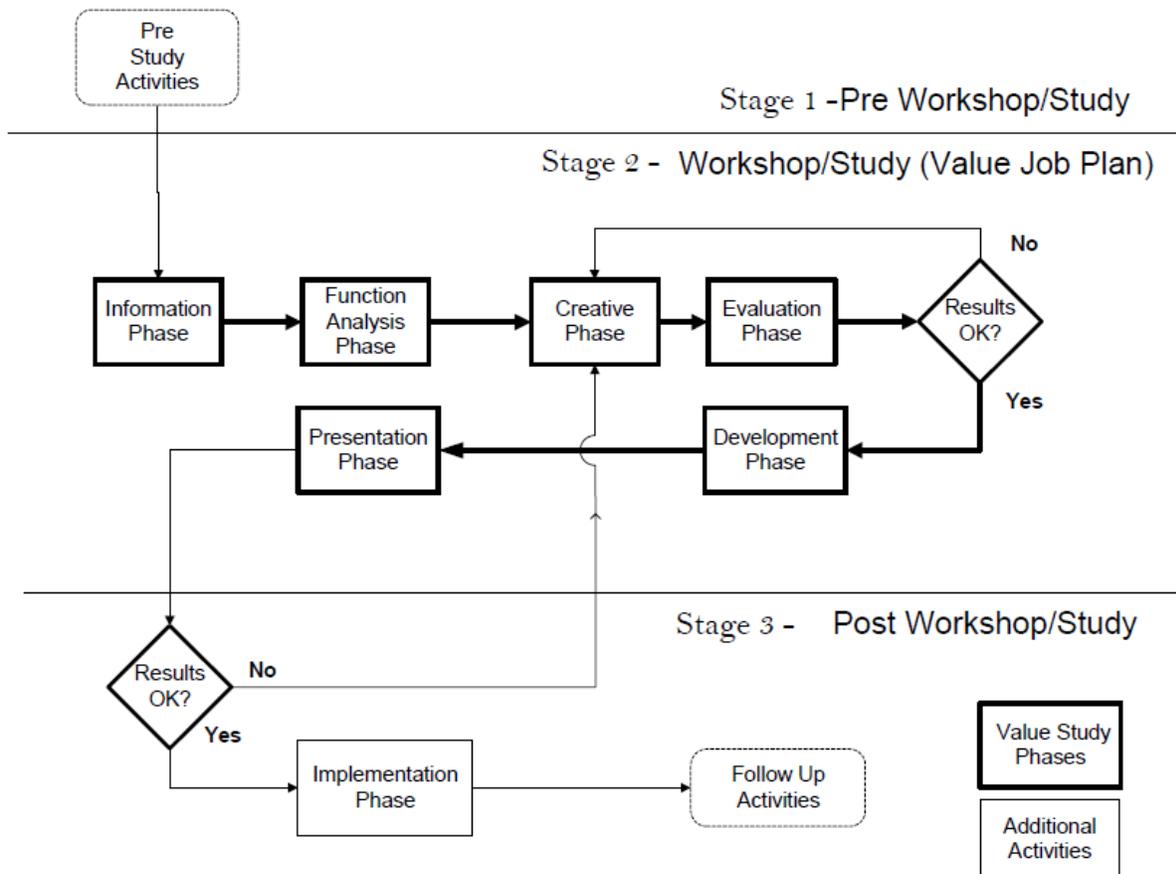
1. IDIQ contracts are the predominant contract type used for Architect-Engineer (A-E) services in USACE. IDIQ contracts must comply with FAR 16.5, as well as EFARS 16.5 and 36.601-3-90. These contracts are generally used for recurring types of A-E services (including VE) where procurement of the services individually by normal announcement, selection, negotiation and award procedures would not be economical or timely. Task orders for particular projects are negotiated and issued under the terms of the IDIQ

FY12 VME ANNUAL WORK PLAN - Civil Works South Atlantic Division - 10 Nov 2011												
Div District	CW192/ CW285 Milestone	CW195/ CW290 Milestone	Actual	Waived	Fund Type	P2 Number	Location	Description	Total Authorized Cost	Estimated VE Study Cost	Status / Comment	
SAD SAC	10 Mar 2011	10 Jul 2011		N	O&M	11481	Charleston Harbor, SC	O&M Maintenance of 44.6 miles of CH	\$4,391,000	\$45,000	Upper Reaches	
SAD SAC	10 Mar 2011	10 Jul 2011		N	O&M	11481	Charleston Harbor, SC	O&M Maintenance of 44.6 miles of CH	\$3,062,000	45,000	Lower Reaches	
SAD SAC	12 Jan 2012	10 May 2011		N	O&M	11482	St Stephen, SC	Inlets/Draft Tube Gully Crane Rehab	\$1,500,000	45,000		
SAD SAC	31 Jan 2012	4 Feb 2012		N	Non-CAP	113962	Lake Marion	P Wt Walls X-road to Holly Hill Reach	\$10,000,000	45,000	Initial Phase	
SAD SAC	1 Jan 2012	4 Feb 2012		N	Non-CAP	113962	Lake Marion	Goodbys Creek WWCollection System	\$10,000,000	45,000	Initial Phase	
SAD SAC	15 Jun 2012	29 Jun 2012		N	O&M	11481	Charleston Harbor, SC	Cleaver Creek Ditching	\$2,000,000	45,000		
SAD SAC	TBD	TBD		N	O&M	122454	Charleston Harbor, SC	Joint Base Charleston Dredging	\$7,000,000	45,000		
SAD SAJ	21-Nov-11	20-Jan-12		N	CG	114527	Florida	Herbert Hoover Dike	\$92,080,000	\$30,000	RED Cleaver Reach C-3, 4A, 5, 7, 9, 10, 12, TCC & Pilot	
SAD SAJ	13-Jul-11	16-Dec-12		N	CG	113106	Florida	Miami Harbor Deepening	\$238,000,000	\$30,000	PED Harbor Deepening	
SAD SAJ	30-Jan-12	26-Mar-12		N	GI	113180	Florida	Port Everglades	\$321,000,000	\$50,000	FRCA/AFB Feasibility	
SAD SAJ	16-Nov-11	13-Jan-12		N	CG	114520	Florida	Kissimmee River	\$33,500,000	\$35,000	PED Backfill FILL CNT 10 & 12	
SAD SAJ	23-Nov-11	23-Jan-12		N	CG	114993	Florida	C&SF West Palm Beach Canal	\$18,300,000	\$15,000	STA 1 E C&S 5 & 7 PSTA	
SAD SAJ	1-Dec-11	2-Feb-12		N	GI	113131	Florida	Jacksonville Harbor, FL (GRR)	\$738,000,000	\$35,000	Deconstruction GRR 2 FSP	
SAD SAJ	12-Dec-11	17-Jan-12		N	CG	114796	Florida	C&SF South Dade County (C-111)	TBD	\$15,000	Leaves to 8.5 SMA - Construction #6	
SAD SAJ	10-Jul-12	8-Aug-12		N	GI	131356	Florida	Lake Worth Inlet, FL	TBD	\$28,000	AFB Pilot (PR3 - IPRA) Maintenance for Flood Damage	
SAD SAJ				N	O&M	14283	Florida	ARRA, C&SF JHD, RL-08A1 FY11, Stone Purchase Contract	TBD	\$0	Reduction - VE action to be determined	
SAD SAJ				N	C&P	133075	Florida	C&P Carbonates/Oxbow Restoral	~\$10,000,000		Future PED VE Study TBD	
SAD SAJ				N	C&P	138543	Florida	C&P Big Fishweir Chr Jar (20)	~\$10,000,000		Future PED VE Study TBD	
SAD SAJ				NA	CG	117413	Florida	C&SF Upper St John River Basin	~\$1,000,000	\$0	Ch L-74k, Tr 11 ~\$1,000,000	
SAD SAJ				NA	CG	117413	Florida	C&SF Upper St John River Basin	~\$1,000,000	\$0	Three Ponds PRCA CNT 2	
SAD SAM	TBD	TBD		N			Atlanta, GA	Atlanta Environmental Infrastructure - City of Atlanta - Chattahoochee River Raw Water Intake	\$2,000,000	\$	25,000 RTA 62912	
SAD SAM	TBD	TBD		N			Pascagoula Harbor, Mississippi	Bar Channel Widening	\$9,600,000	\$	25,000 RTA 322312	
SAD SAM	TBD	TBD		N			Walton County, FL	Walton County Hurricane & Storm Damage Reduction Project	\$50,000,000	\$	40,000 Feasibility Study	
SAD SAS	26-Mar-12			N	CG	127458	Savannah Harbor	12A Dike Raising	\$12,000,000			
SAD SAS				N	O&M	112985	Richard B. Russell Savannah Harbor	Install 11 Gas Circuit Breakers	\$1,000,000			
SAD SAS	17-Mar-12			N	O&M	112985	Savannah Harbor	Maintenance Dredging - Inner Harbor	\$14,000,000			
SAD SAS	17-Mar-12			N	O&M	112985	Savannah Harbor	Maintenance Dredging - Entrance Channel	\$7,000,000			
SAD SAS	17-Mar-12			N	O&M	112986 & 112985	Brunswick & Savannah Harbors	DMCA Maintenance	\$2,000,000			
SAD SAS				N				Microzone System Implementation	\$1,000,000			
SAD SAS				N			Savannah Harbor	Savannah Harbor Expansion Project	UNK			
SAD SAW	23 Jan 12	27 Jan 12		N	CG	113755	North Carolina	shore protection, Brunswick County	\$25,000		schedule may change	
SAD SAW	24 Sep 12	28 Sep 12		N	GI	113970	North Carolina	shore protection - Bogus Banks	\$40,000			
SAD SAW	2 Mar 12	8 Mar 12		N	GI	115171	North Carolina	ecosystem restoration - Currituck Sound	\$40,000			
SAD SAW	28 Dec012	7 Feb 12		N	GI	117270	North Carolina	shore protection - Surf City/North Topsail Beach	\$25,000			
SAD SAW	6 Mar 12	30 April 12		N	CG	117249	North Carolina	shore protection - West Onslow/Topsail Beach	\$20,000			

2. contract, and may be fixed-price, cost-reimbursement, or labor-hour contracts, as allowed by the primary IDIQ contract.
  3. Acquisition of IDIQ contracts and task order development are explained in the following Quality Management System (QMS) processes, and will not be discussed further in the Manual of Practice, except for specific items relating to task orders for VE services. [https://kme.usace.army.mil/CE/QMS/Pages/Welcome.aspx?Region=HQUSACE&Group=National\\_x0020\\_Process\\_x0020\\_Number](https://kme.usace.army.mil/CE/QMS/Pages/Welcome.aspx?Region=HQUSACE&Group=National_x0020_Process_x0020_Number)
    - QMS PROC 18015 Acquisition
    - QMS PROC 18022 Architect-Engineer Contract Acquisition
    - QMS PROC 18031 Architect-Engineer Selection
    - QMS PROC 18009 A-E Task Order Development on A-E IDIQ
  4. Districts may either include VE services in their requirements for a general A-E IDIQ contract awarded to support their district, or they may contract for a separate VE IDIQ contract. A number of districts have already awarded VE IDIQ contracts or A-E IDIQ contracts which include VE services. These districts and their contracts are identified on the USACE Value Engineering/Value Management CoP Portal ([VM/VE CoP SharePoint website](#)). The district VEO should work with their Contracting Officer to determine the procedures for acquiring the IDIQ contract capacity to issue the planned task order. In general, the 'borrowing' district will need to provide a letter requesting the use of the IDIQ contract, with a statement of work, initial cost estimate, Independent Government Estimate for the task order, and PR&C.
- C. Total Obligation Authority.** Per DoD Financial Management Regulation DoD FMR 7000.14-R Total Obligation Authority (TOA) is the sum of: 1) all budget authority (BA) granted (or requested) from Congress in a given year, 2) amounts authorized to be credited to a specific fund, 3.) BA transferred from another appropriation, and 4) unobligated balances of BA from previous years which remain available for obligation. In practice, this term is used primarily in discussing the DoD budget, and most often refers to TOA as "direct program" which equates to only (1) and (2) above. It is the value of an agency's entire operation for each fiscal year, regardless of how it is financed (including any carryover from the previous year). Each district's annual TOA is determined by HQ-Resource Management, and loaded into VERS by the HQ VE Office. One of the major metrics for the Value Engineering Program is the annual Cost Avoidance & Savings goal of 1.5% of TOA which is assigned by the Office of Management and Budget (OMB) to all Federal Agencies.

## V. Program Execution/Conducting VE Studies/Workshop

- A. **SAVE Value Methodology Standards. VE studies will follow the six-step Job Plan as prescribed by SAVE International.** The purposes of the SAVE Standards are to:
1. Define the steps and components that constitute a valid Value Study;
  2. Document supporting information that defines a generic methodology, common terminology, and standard practice to guide practitioners and managers in effectively applying value methodology to improve the value of their projects; and
  3. Guide the practitioner and manager in determining at what point to apply value methodology to a project in order to maximize:
    - a. the benefits of team innovation skills, and
    - b. implementation of alternative(s) that add value to the project.
- B. **VE Study/Workshop.** As described below, a VE workshop requires a number of pre-study activities; the six phases of a standard job plan; and post-study activities to document and report the results of the VE workshop. A value methodology is applied by a multidisciplinary team to improve the value of a project through the analysis of functions as illustrated in the following diagram.



1. **Pre-Study Phase.** The following tasks may be required prior to the study:
  - Collecting and defining the user and/or customer needs and expectations, as well as dissatisfactions;
  - Gathering as much applicable information about the project, program, system, product, and/or service to be studied as possible (e.g., design and decision documents, plans and specifications, cost estimates, historical information);
  - Determining evaluation factors;
  - Scoping the specific study (i.e., features to concentrate on, politically sensitive topics);
  - Building appropriate models (e.g., cost diagrams or cost models);
  - Determining the VE Study team composition, scheduling a study date, and completing resource management requirements (e.g., developing scopes of work, Military Interdepartmental Purchase Requests (MIPRs), completing work required to use an IDIQ contract); and
  - Securing a location for the study and gathering facilitation supplies (e.g., flip chart paper and easels, large markers) and arranging information technology support (i.e., projector, computer access).
  
2. **Job Plan.** The value methodology is a systematic process that follows the Job Plan. The Job Plan consists of the following sequential phases. Additional information on Value Engineering tools and techniques are listed in the Program Support/Tools section; there are also many links to resources on the USACE Value Engineering/Value Management CoP Portal. [https://kme.usace.army.mil/VE/USACE\\_VE\\_Teamsite/default.aspx](https://kme.usace.army.mil/VE/USACE_VE_Teamsite/default.aspx)
  - a. Information Phase: The team reviews and defines the current conditions of the project and identifies the goals of the study.
  - b. Function Analysis Phase: The team defines the project functions using a two-word active verb/ measurable noun context. The team reviews and analyzes these functions to determine which need improvement, elimination, or creation to meet the project's goals.
  - c. Creative Phase: The team employs creative techniques to identify other ways to perform the project's function(s).
  - d. Evaluation Phase: The team follows a structured evaluation process to select those ideas that offer the potential for value improvement while delivering the project's function(s) and considering performance requirements and resource limits.
  - e. Development Phase: The team develops the selected ideas into alternatives (or proposals) with a sufficient level of documentation to allow decision makers to determine if the alternative should be implemented. (Refer to Section 5.C for discussion on estimating Cost Savings and Avoidance.)
  - f. Presentation Phase: The team leader develops a report and/or presentation that documents and conveys the adequacy of the alternative(s) developed by the team and the associated value improvement opportunity.
  
3. **Post-Study Phase:** The objective of the Post-Study Phase is to implement approved value alternatives, including proper reporting. It is imperative that the VEO maintain communication with each PM and maintain the tracking system in P2 and VERS to keep record of the following action items:

- The VEO should notify the project manager of the VE study completion and results; the PM will ensure that **P2 is updated** with the VE study date completion, and send the Value Engineering certification document (with **VEO Concurrence**) to the Contracting Officer . The VE certification document must accompany the BCOE (Biddability, Constructibility, Operatability, and Environmental) Review, and must be submitted to the Contracting Office prior to soliciting bids for the project. The Contracting Officer is to validate that the Value Engineering certification is present is present and accurate prior to advertising or awarding the project.
- Following completion of the VE study, the VEO will **update VERS** with the results of the VE study, including completion dates, proposal implementation, cost avoidance, year(s) the cost avoidance should be claimed, and qualitative improvements (proposed and accepted). (NOTE: the VEO should track when the contract is actually awarded, in order to claim VE cost savings and avoidance in the proper year, and should VERIFY proposals claimed for cost avoidance credit were actually implemented and reflected in the contract documents as awarded).
- The VEO must track any individual VE proposal, group of proposals, or VECP that may save over \$1 million according to the Value Engineering Study Report or the proposing contractor. Rejection of any of these high-value VE proposals requires the signed concurrence of the MSC/Engineering Center Commander, and will be sent to the HQUSACE, Chief, OVE, for program reporting.
- The VE Study should be loaded in the appropriate sections of the **Value Engineering Library**.
- Should any **VECPs** be accepted later for the construction contract, they should also be loaded into the VE Library by clicking on the 'Add new document' button at the bottom of the VECp section. Acceptance of VECpS should be coordinated with the Contracting Officer and with the appropriate Resident Engineer .

### C. Developing the Study Team

1. The Value Study Team is a multidisciplinary group of experienced professionals and project stakeholders (e.g., building tenants, installation DPW, installation security, etc). Team members are chosen based on their expertise and experience with the type of work the project entails. The VE team should not include staff directly associated with the project to encourage incorporation of "outside ideas" and lessons learned (this should not exclude or discourage PDT staff participation on the VE study team as well). The exact composition of the Team depends on the requirements of the individual project.
2. The Value Team Leader is trained in value methodology techniques and is qualified to lead a study team following the Value Standard. The SAVE International Certification Board certifies, with the designation Certified Value Specialists (CVS), those individuals who have met specified training requirements and have demonstrated competency in the application of the Value Standards. The Team Facilitator shall be a CVS, or a VMP serving under the guidance of a CVS as defined by SAVE Certification criteria, or shall be the holder other active certification recognized by SAVE International. In some cases, Associate Value Specialists (AVS) or Value Methodology Practitioners (VMP) may be allowed to facilitate study teams.

## D. Cost Savings and Avoidance

1. **Overview and Responsibilities.** This section provides basic guidelines and examples of estimating VE cost savings and cost avoidance for the VE report. The district VEO is responsible for claiming and reporting VE cost savings and cost avoidance. The Division VPM or VEO is responsible for oversight and review of district VEO activity and submittals (see Reporting and Approval below).
2. **Definition of Cost Savings & Cost Avoidance**
  - a. **Cost savings** is defined as project cost reduction resulting from a VE effort in which such savings can be directly accounted for in an official budget document. For example, if there is a \$100,000 VE cost saving change on a project the official project budget document change indicates a specific item that is reduced by \$100,000 (the VE savings can be directly tracked to an official budget document). OMB audits generally seek a changed budget document to support claim of VE savings. All VECP savings are considered cost savings.
  - b. **Cost avoidance** is also defined as project cost reduction resulting from a VE effort but cost avoidance comes in the form of reducing potential project cost increases, or capturing the added value of more project work for the same funds. It is not specifically accounted for in an official budget document. For example, if an official project cost is \$1 million but there is anticipated cost increase of say \$200,000, a VE action that reduces the overrun by \$100,000 will still result in a cost avoidance of \$100,000, even though the official project has a cost increase of \$100,000. The VE “savings” is then classified as cost avoidance. Should an accepted cost avoidance on one portion of a project be utilized to provide authorized but unfunded items on a project, the accepted cost avoidance is claimed, even if project costs remain the same. In the project planning phase, most VE “savings” are best defined as future cost avoidance; that is all VE proposals are “future” until implemented in project construction (i.e., a construction contract is awarded).
  - c. **NOTE:** By the definition above, all cost “savings” can qualify as cost “avoidance” but not the other way around. In general, it is best to claim cost avoidance versus savings if there is any doubt in budget documents directly reflecting VE results.
3. **Claiming Qualifications Of Cost Savings And Cost Avoidance.** There are two basic requirements for VE cost savings and cost avoidance qualifications.
  - c. The first is that the cost savings and cost and cost avoidance must be a direct or indirect result of some form of documented VE action, preferably the results from an official VE workshop or contractor’s VECP. Cost savings and cost avoidance generated from a non-workshop effort, such as design team review ,may also qualify, just as long as some aspect of the VE Job Plan was applied and it is documented. *NOTE: Such an activity does not substitute for required VE workshops as prescribed in [ER 11-1-321](#).*
  - d. The second qualification is that the project is a Federal authorized project or that there is some form of authorized Federal involvement. *NOTE: Local sponsor (non-Federal) savings and monetary benefit increase do qualify for Federal VE savings and*

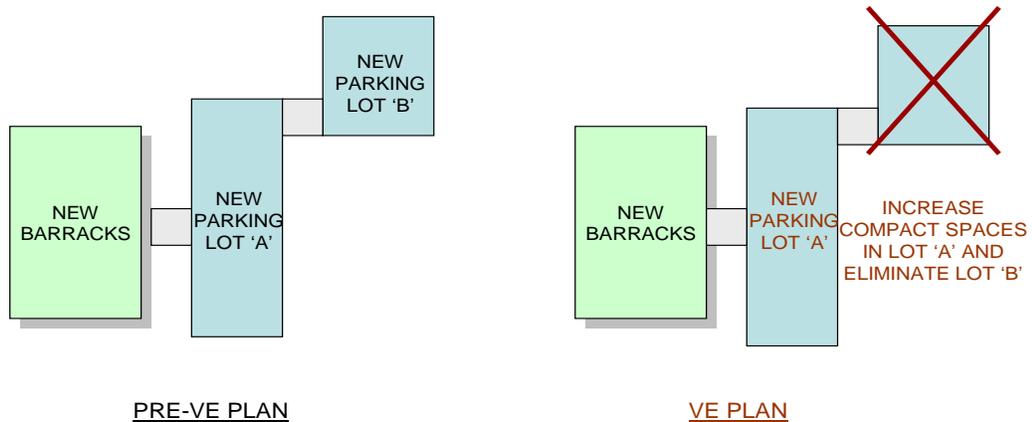
*cost avoidance regardless of Federal cost-sharing amount (i.e., benefit to the taxpayer regardless of the amount of Federal dollars appropriated).*

- e. NOTE: Cost savings and cost avoidance should only be claimed if legitimate and documented via VE workshop. That is, they have been verified by a cost engineer and the documentation will be sufficient to pass an OMB audit.

4. **Calculating Cost Savings and Cost Avoidance.** VE cost savings and cost avoidance should address a number of factors in addition to direct cost reduction. Such factors include, but may not be limited to, indirect savings, life-cycle savings, added measurable project benefits, accelerated benefits, time-interest savings and indexing for time. Further definitions and examples follow below.

- a. **Direct Cost Savings or Cost Avoidance.** This is the simplest form of cost savings that can be directly attributed to a VE proposal.

**Example:** In the following example that will also be referenced for other types of cost savings, a VE proposal to increase the number of compact parking spaces allowing for the elimination of a second originally planned new barracks parking lot is implemented (see Figure 1). Direct savings calculated as follows. Note: The sample proposals presented here are fictional with un-validated costs and are used for illustrative purposes only.



BARRACKS PARKING CONFIGURATION

Figure 1

**Example:**

**Direct Cost Savings or Cost Avoidance:**

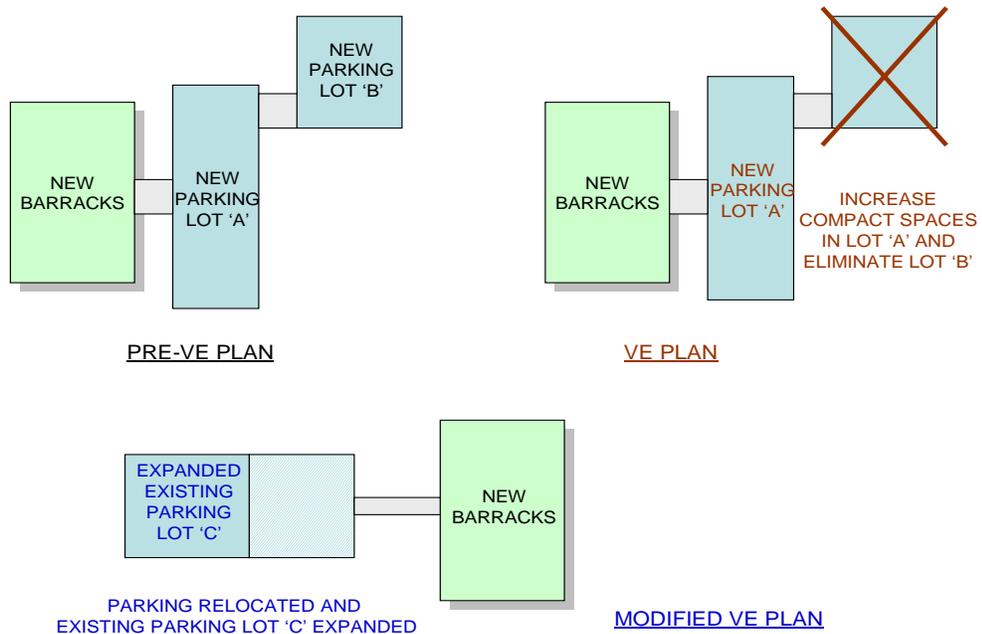
Parking lot cost of Pre-VE Plan (2 lots) = \$1,000,000

Parking lot cost of VE Plan (single lot) = \$500,000

Savings = \$1,000,000 - \$500,000 = **\$500,000**

- b. **In-direct Cost Savings or Cost Avoidance.** In many, perhaps most, instances, a VE proposal is not directly adopted but a modified version of it is. VE savings are claimable even though the change is not exactly as proposed. If the VE proposal contributed to the process of ultimately changing the design for the better, cost savings and cost avoidance can be claimed in full.

**Example:** An example of indirect VE savings is shown below for our parking lot. In this situation, the reduction of required parking spaces ultimately allowed expansion of an existing lot on the preferred entrance side of the new barracks (see Figure 2). Although the VE proposal did not call for this relocation, it contributed to this change. See savings calculation below. Note that savings are more than that inferred by the original VE proposal and are acceptable and/or allowable to claim.



**BARRACKS PARKING CONFIGURATION**

**Figure 2**

Indirect Cost Savings or Cost Avoidance:

Parking lot cost of Pre-VE Plan = \$1,000,000

Parking lot cost of Modified VE Plan = \$300,000

Savings = \$1,000,000 - \$300,000 = \$700,000

**c. Life Cycle Cost Savings or Cost Avoidance**

- i. VE proposals should address future operation and maintenance costs as well as first cost. A “present worth” comparison of alternatives can define such future savings on a “today’s dollar” basis. Sometimes an increase in first cost can be more economical if it saves and/or defers future costs. A possible example of life-cycle cost savings for our parking lot is as follows:

**Example**

A VE proposal recommends seal-coating the parking lot and using a premium striping material in lieu of the original plan not to seal-coat and use economy striping. The benefit of the VE proposal is that parking lot resurfacing and striping can be deferred from every 10-years to every 15-years. Considering the facility service life of 25-years, a present worth economic comparison is calculated as follows:

**Original plan:**

Initial cost of economy striping: \$10,000

Cost of parking lot re-surfacing and striping: \$110,000  
(re-surfacing and striping needed every 10-years)

Present worth cost of Original plan = (\$10,000 initial cost) + (present worth of \$110,000 future cost in year 10) + (present worth of \$110,000 future cost in year 20)

= (\$10,000) + (\$110,000 x discount factor for year 10) + (\$110,000 x discount factor for year 20)

**Note: The discount factor is based on the official Federal discount (interest) rate used for Corps of Engineers’ projects (at the time of this writing, 4 7/8%; 4 ½% used for rounding and clarity); also note that future costs are not inflated since inflation is accounted for in the discount rate. Further discussion and examples of life-cycle cost calculations can be found in the USACE VE Module I Course Manual available at the [VM/VE CoP SharePoint website](#).**

= (\$10,000) + (\$110,000 x (P/F, 4 ½%, 10-years)) + (\$110,000 x (P/F, 4 ½%, 20-years))

= (\$10,000) + (\$110,000 x 0.644) + (\$110,000 x 0.415)

= \$126,000

**VE Plan:**

Initial cost of seal-coating and premium striping:	\$40,000
Cost of parking lot re-surfacing and striping: (re-surfacing and striping needed in year 15)	\$110,000

Present worth cost of VE plan = (\$40,000 initial cost) + (present worth of \$110,000 future cost in year 15)

= (\$40,000) + (\$110,000 x discount factor for year 15)

= (\$40,000) + (\$110,000 x (P/F, 4 ½%, 15-years))

= (\$40,000) + (\$110,000 x 0.517)

= \$97,000

Net present worth life-cycle savings = \$126,000 - \$97,000 = \$29,000

**d. Time (Interest) Savings**

- i. In some cases, a VE proposal may allow deferral of construction. If such a delay is not associated with any loss of project function or benefits, there is a monetary benefit (net interest savings) that *can be claimed*. If the deferral reduces function or benefits, then such savings are offset by such loss and *cannot be claimed*. Net interest savings is reflected in the Federal discount rate.
- ii. If planned construction exceeds one-year compressing or shortening of this time can also result in time-interest savings (interest lost during construction). However, if advancing measurable project benefits are claimed as savings (see below), this cannot be claimed (one or the other but not both).

**Example:**

Supposed our parking lot proposal also allows temporary use of "Lot D" (see Figure 3) and can defer new lot construction for five years. Since there is no loss of function (parking spaces available) additional time-money, net interest savings is claimable as calculated below:

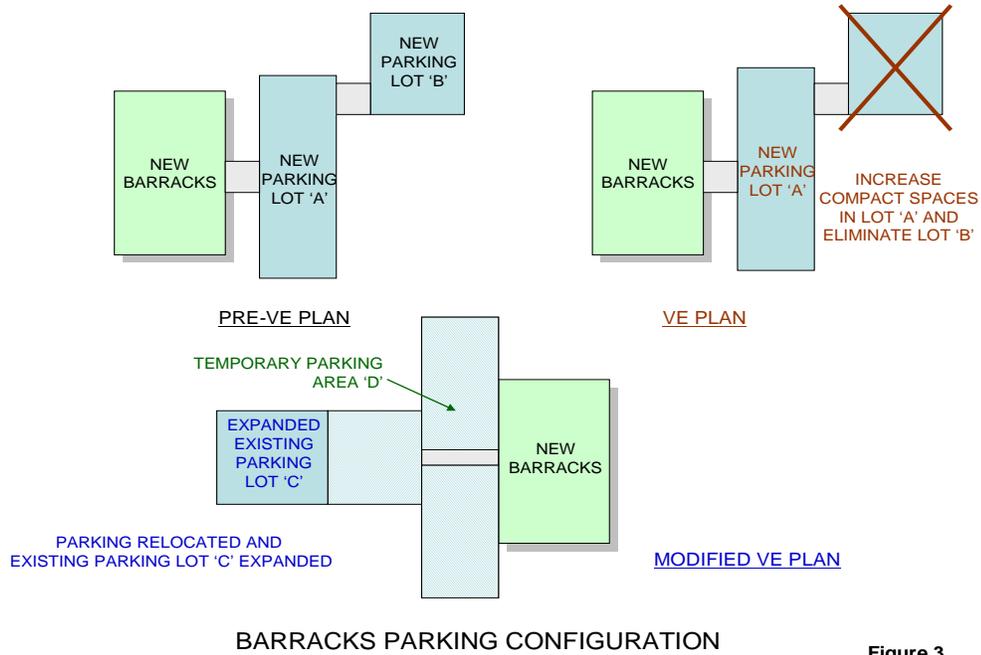


Figure 3

**Indirect Cost Savings or Cost Avoidance, plus time savings associated with construction deferral of Lot "C":**

Parking lot cost of Pre-VE Plan = \$1,000,000

Parking lot cost of VE Plan = \$300,000

Savings = \$1,000,000 - \$300,000 = \$700,000

Additional savings for 5-year time deferral of \$300,000 expenditure  
 = Cost now less discounted cost in five years

= \$300,000 - \$300,000 x (Present worth factor at 4 ½% over 5 years)

= \$300,000 - \$300,000 x (0.803) = \$59,000

Total VE Savings = \$700,000 + \$59,000 = \$759,000

e. **Indexing for Time**

Not uncommon is the situation where project construction occurs years after completion of a VE proposal. In such case, indexing estimated VE savings from the year it was calculated to the year of actual construction can be done to adjust for inflation. Note that this is different from the time-interest savings described above.

**Example:**

For our parking lot example, consider that the VE study and original savings calculation was performed in 2001 and the modified VE plan was implemented and constructed in 2008. Seven years of inflation should be accounted for via the Engineering News Record (ENR) or other appropriate index. Calculations as follows:

Adopted VE proposal savings of \$700,000 generated by VE workshop performed in 2001. Actual construction start is in 2008. Indexed VE savings =

$$\$700,000 \times \text{ENR Cost Index } 2008/2001 = \$700,000 \times (8362 / 6343) = \underline{\$923,000}$$

f. **Added Measurable Project Benefits**

An implemented VE proposal that results in adding or advancing **measurable** project benefits can claim such benefits as cost avoidance. Measurable benefits are usually stated in most civil works projects, particularly flood control and navigation. Present worth evaluations are usually required to calculate such savings. Advancing the time benefits are achieved by one or more years is virtually the same as adding yearly (or equivalent annual) benefits per time advanced. **Note that adding and/or advancing project benefits is an often overlooked and potentially significant source of VE cost avoidance.**

**Example:** An example of a VE proposal that increases navigation benefits via some added first cost is as follows:

Adopted VE proposal to modify a lock filling system to reduce average lockage time by 10 minutes; estimated added cost for modification of \$3,000,000.

Estimated average daily measurable benefit to navigation of \$1,000 per day or about \$350,000 per year.

Net present worth of benefits less cost over 50 year economic life =

Present worth of annual benefits – Added first cost

$$= \$350,000 (P/A, 4 \frac{1}{2}\%, 50 \text{ years}) - \$3,000,000 =$$

$$= \$350,000 (19.8) - \$3,000,000 = \$3,930,000$$

**D. Value Engineering Change Proposals (VECPs)**

1. General overview.

- a. Value Engineering (VE) is addressed in part 48 of the Federal Acquisition Regulation (FAR) 48 CFR 203. VE is made a part of each contract by the use of a VE clause. There are three basic clauses: FAR 52.248-1, used for supply and services contracts, FAR 52.248-2, used for architect-engineer contracts and FAR 52.248-3, used for construction contracts.

- a. The Value Engineering clause may be administered in mandatory mode, voluntary mode, or combination of the two. A Value Engineering change proposal:
  - Is a change to the contract initiated by the contractor utilizing FAR clause 52.248-1 or 52.248-3.
  - Offers the contractor an incentive to share cost-saving innovations with the owner.
  - Results in an equal or better quality product at a lower total cost for the owner, and an increase in profit for the contractor.
2. Pre-construction and partnering
  - a. District VEO's must promote contractor participation in submitting VECPs. This is an area that has shown marginal participation in recent years. Active participation in pre-construction conferences and at formal partnering meetings provides opportunity to promote contractor involvement in VE.
  - b. The benefits of proposing a Value Engineering change are substantial since the contractor:
    - Can only realize an increase in profit. The original contract profit will remain whole with savings being calculated on changes only.
    - Shares in the savings that provide a source of profit not available under other provisions of the contract;
    - May achieve profits above the limitations established on certain government contracts;
    - May establish a reputation as a cost-conscious supplier;
    - Improves its communication with the customer;
    - May obtain usable technology for other product lines; and
    - Enhances the retention and growth of corporate technical expertise through advanced technology insertion and fostering a positive working environment.

Each of these benefits is directly relatable to the elements of partnering between the government and the contractor, customer satisfaction, planning stability, good financial performance and cash flow.
  - c. The VECP outcome is, in essence, a bonus program. The bonus could extend to subcontractors who have a major role (>\$50,000) in the overall contract. With an increase to profitability of 55% of the savings generated by each accepted VECP's, contractor profits will never be reduced because profit is not part of the instant savings calculations.
  - d. The VECP process is a partnership between the contractor and the Corps which enables both parties to benefit.
3. **Contractor's role in the VECP process.** The contractor should employ value methodology procedures. Preparation of each VECP involves:

- a. Analyzing all phases of construction project to identify current and potential areas of high cost and low value. Review the drawings and specifications to reveal those areas that do not affect the essential functions or features.
  - b. Brainstorming those areas of high cost/low value for alternate ways to provide the same function in a cost effective and more efficient manner. Make a list of high cost items that seem to have a low value and prioritize the list.
  - c. Evaluating those ideas and selecting the best alternatives. Study each item in order of priority in a group setting. Select the most promising and gather all pertinent data. Completeness is critical to the timely analysis for acceptance.
  - d. Submitting the best idea(s) in the form of a VECP to the government for analysis.
1. **Timely processing of VECP's.** Time is of the essence. Reluctance in timely processing of VECP's over time will generate an atmosphere of distrust within the local contracting community. The government contracting officer must notify the contractor of the status of the VECP within 45 calendar days after receipt of the VECP. Status may mean making an appointment to discuss, conducting negotiations, providing a justification for rejection, or simply providing a reason that additional time is required by the government to consider and the expected date of the decision. The government is not liable for any delay in acting upon a VECP. The contractor is bound by the existing contract until a notice to proceed or a modification is issued.
  2. **Reporting.** Once the VECP has been accepted, the KO or RE should provide the change notification to the district VEO, who will enter the receipt into VERS during the quarter they were received, with follow-up revisions provided as the VECP approval process is finalized. The contractor will be issued a notice to proceed on the VECP change once the modification has been signed.

#### **A. Documentation and Approval of VE Cost Savings & Avoidance**

1. The VPM and VEO should document all VE cost savings and cost avoidance by means of a memorandum for project record or similar means. The claim of savings document should, at a minimum, contain or reference some form of documentation (preferably an official VE Study) that demonstrates a proposed project change that was directly or indirectly involved in achieving the ultimate project design. There should also be documentation of the final design (copy of plan drawing, etcetera). The memorandum should also include a rationale and calculation of the cost savings and cost avoidance.
2. Note that it is not likely that a construction bid proposal will contain enough data to perform a direct comparison to the previous design. Savings should, however, be calculated on some form of "apples-to-apples" basis. This may require using the actual VE proposal with proper adjustment and indexing to approximate cost savings. Reasonable judgment is required for estimating "indirect" VE savings. Other updated means may be preferable, but a separate official cost estimating effort, comparing the previous plan to the final plan is not necessary. The bottom line is some form of legitimate and reasonable means of estimating savings should be utilized. Refer to

**Section XI.A.4 “Calculating Cost Savings and Avoidance”** in this manual for further guidance.

3. Documentation of claimed savings should be submitted to the MSC or Division VPM or VEO for review and approval. Upon approval, savings should be uploaded into [VERS](#) to be accounted for in quarterly VE goals.

**4. Allowable Time Period to Claim Savings and Cost Avoidance**

- a. **Construction Projects.** Cost savings and cost avoidance can only be claimed after the award of the construction contract. In general, savings should be claimed concurrent with construction (this may exceed the six year period listed below for repetitive projects). Total savings may be claimed in the initial year(s) of a project regardless of construction duration. This also includes total life-cycle cost savings as defined above.
- b. ***Repetitive Construction, and Operation and Maintenance Projects.*** As indicated above, cost savings and cost avoidance can only be claimed upon construction contract award and should generally be claimed concurrent with construction if greater than one-year duration. For repetitive projects, such as dredging, regular maintenance, etcetera, VE savings and cost avoidance may be repetitively claimed for up to six years.

Recommend moving the VECP info to this point in document

## VI. Program Support/VE Tools

(what tools are out there to help me?)

### A. Value Engineering Reporting System (VERS)

1. **Overview.** The [Value Engineering Reporting System \(VERS\)](#) is a database for tracking and reporting VM/E Program Status in accordance with [ER 11-1-321](#), Value Engineering. VERS rolls up the statistics for four metrics: (1) Cost Avoidance and Savings; (2) Program Coverage; (3) Project Cost Avoidance; and (4) Qualitative Improvement. It also provides data on Training, Personnel, Total Obligation Authority (TOA), Program Costs, and Good News. The details of the district Value Program must be entered into the [VERS](#) database via data entry forms by each District VPM or VEO for projects requiring study. Using Microsoft Access in the background, [VERS](#) stores current [P2](#) information and VM/E data submissions. There are several reports generated, such as Quarterly, Training, Personnel, Good News and data supportive reports. Quarterly reports for Military and Civil Works programs are used to prepare briefing slides for the DMR and CMR Boards. Training, Personnel and Good News reports provide Division and HQUSACE VPMs and VEO useful information for each district's VM/VE program. There are also other supportive reports that allow the user to print what is shown in [VERS](#)'s display.

2. **Access.** [VERS](#) is located on the TEN website: <https://ten.usace.army.mil/TechExNet.aspx>

For permission to access [VERS](#), one must log into TEN and then send a request to either Carmen Klusmeier [Carmen.D.Klusmeier@usace.army.mil](mailto:Carmen.D.Klusmeier@usace.army.mil) (502.315.6315) or Carole Lee Rankin [Carole.L.Rankin@usace.army.mil](mailto:Carole.L.Rankin@usace.army.mil) (502.315.6374). Permission should be coordinated through the MSC VE Program Manager.

3. **Program Notes**

- a. For the Civil Works Program, Acquisition Strategy Plan (ASP) is in VERS for information purposes;(ASP is also found under PMBP Portal 'General Reports' - see Section IV.A.5).
- b. For Military program, VERS filters CC800 milestones (Contract-Construction) by (1) Projects having Approved Status; ( 2) Work Breakdown Structure is Open, (3) Authorized Phase Code is **not** 4 (On Hold), 5 (Deferred) or 8 (Cancelled); and ( 4) Fund Type listed below.
  - i. All fund types over \$1M need studies, but these are the ones VE is rated against.
    1. MCA
      - a. 10 Military Construction Army (MCA)
      - b. 11 Military Construction Army – Minor (**MMCA**)
      - c. 40 Family Housing New Construction (AFHC)
      - d. 67 Military Construction Defense Intelligence Agency (MCDIA)
    2. MCAR
      - a. 12 Military Construction Army Reserve (MCAR)
    3. Mil Other
      - a. 1A Army – Energy Conservation Investment Program (ECIP)
      - b. 39 Defense Agency (DOD) Unspecified Minor (MDOD)

- c. 41 DOD Defense Finance Accounting System (DFAS)
  - d. 46 Department of Defense Medical Facilities (DODM)
  - e. 45 DOD Special Operations Force (SOF)
  - f. 51 Department of Defense Education Activity (DODS)
  - g. 54 Defense Logistics Agency (DLA)
  - h. 70 Foreign Military Sales MILCON (FMS)
  - i. 83 Research, Development, Test & Evalu, Army (RDTA)
  - j. 85 Research, Development, Test & Eval, DOD (RDTD)
4. **Input Instructions.** Detailed instructions on how to input data into VERS are located in the Value Engineering Report System (VERS) folder, 'Reporting & Metrics' Group, USACE Value Engineering/Value Management CoP Portal SharePoint site. Use the most recently dated instruction guidance (currently March 2009). The VERS folders requiring data input are summarized below.
- a. **Projects.** All study/VECP/waiver statistics are entered in this folder. (Data on waivers are entered at Division level only.)
  - b. **Training.** This folder is to communicate who in your district/division office has had VE training, what kind of training, and when it occurred. It may also be used to document training of other District staff besides the VE Officer.
  - c. **Personnel.** This folder documents those who are assigned to the VE program, as well as their certifications level.
  - d. **TOA.** Total Obligation Authority; this value is entered annually by HQ. Is used for Metric 1 goal of 1.5% TOA.
  - e. **Costs.** This documents the annual **VE program** costs for each District and Division. These are VE program costs that are not directly attributable to project VE studies. It is entered on an annual basis.
  - f. **Good News.** This folder enables VE Officers to enter information on particular successful or noteworthy VE studies or program accomplishments. These can be the basis for future briefings and articles, as well as for use by Division and HQ offices.
  - g. **CoS.** Center of Standardization (CoS) folder contains a list of completed CoS by district with their corresponding study date and cost avoidance.
5. **Reports.** This folder provides output reports, including quarterly reports on the Civil Works, Military, and Air Force programs. It also provides reports on Personnel, Good News and Training, by Fiscal Year. The Data Dump folder presents all data compiled for each District or Division, using an Excel spreadsheet

## B. Value Engineering Library

1. Every VE Study Report and VE Report Executive Summary shall be uploaded to the Value Engineering Library upon completion of the reports. The reports must be in pdf or WORD format. The naming convention of VE Study Reports shall be as follows:

District Symbol-VE-Year (*four digits*)-Cumulative Study Number for the Year (*up to three digits*)-MP, CW, or OTH (Note: The year is the year the study was conducted) (MP - Military Programs, CW – Civil Works, and OTH – Other)

For example, CESAS-VE-2009-001-MP.

The naming convention of VE Report Executive Summary shall include the be the same as the VE Study Report with a “ES -” preceding the name.

For example, ES-CESAS-VE-2009-001-MP.

2. **Website Overview.** The Value Engineering Library is to be used to assist the USACE VE/VM Community of Practice with organizing, archiving, and sharing their valuable efforts for Charrette and Value Engineering/Management Study reports. It is located at

<https://kme.usace.army.mil/VE/Shared%20Documents/ValueEngineering.aspx>

It is envisioned that the reports, data, great ideas and proposals can be utilized by VEO’s and study teams in their efforts to conduct future studies on similar type projects and facilities. VEO’s will be able to execute searches and queries of the Library database to find similar project studies from which to extract, consider, and utilize proposals/ideas from studies that have already gone through the SAVE VE methodology.

3. **Report Uploading Instructions.** A handout with illustrative instructions for adding Charrette and VE Study reports to the Value Engineering Library is available at the [VE/VM CoP SharePoint website](#). There are also instructions available at the Value Engineering Library under the “Announcements” web part.

Note that how the study reports are saved will affect the effectiveness of the search engine. In addition to filling in the required database attributes (i.e. Metadata), please make every attempt to fill in as well as many of the supplemental project attributes as possible. The “required” attributes that must be populated as a minimum are:

- Name (This is the actual name of the file being uploaded into the Library)
  - Project Title
  - Division
  - Program Year
  - Fiscal Year
  - Study Date
  - Government Cost of the VE (Charrette) Study
  - Project P2 Number
  - Keywords (This field captures keywords associated with the V-E Study document and will be utilized for the query and searching features)
  - Facility Type
4. **Search Instructions.** There are two locations where the Value Engineering Library search engine is available. One is at the upper right-hand corner of the Value Engineering Library homepage. The other location is within the Value Engineering Library homepage by the report library listings.

To use the search engine, first select a site option, second enter search keywords and lastly execute the search by clicking on the ICON of the magnifying glass.

The search engine that is located on the top right of the library homepage allows searches of different sites as well as the capability to perform an advanced query/search

### C. VE CoP Sharepoint

1. **Overview.** The USACE Value Engineering/Value Management CoP Portal exists to assist the USACE VE/VM Community of Practice with the collaboration and sharing of information related to the USACE Value Engineering/Management Program. The SharePoint team site includes web parts that provide information on Announcements, Links, Team Discussion, CoP Calendar, Picture Library, and a Shared Document area. It is available at [https://kme.usace.army.mil/VE/USACE\\_VE\\_Teamsite/default.aspx](https://kme.usace.army.mil/VE/USACE_VE_Teamsite/default.aspx)
2. **Access.** The SharePoint site access is limited to the “CDL-ALL-Value-Engineering-POCs” Active Directory distribution listing, which includes all of the Value Engineering Community of Practice POCs in USACE. VEOs have “contributor” permissions to this site and are encouraged to share, collaborate, and upload information as appropriate to help the community move forward and promote continuous improvement.

### D. Value Management Tools and Techniques.

There are a number of tools available for use during a VE study and while running the VE program. These tools are listed below. Due to the volume of information, the listed items are not detailed in this manual; however, many of the techniques are described in the Value Methodology Pocket Guide. Please check other resources for information (Google, SAVE website, etc.).

1. Value Methodology: A Pocket Guide to Reduce Cost and Improve Value Through Function Analysis
2. Risk Management for Value Engineering
3. Risk Analysis Summary
4. Risk Response Control Procedures
5. Risk Register
6. Lean Six Sigma
7. Risk Block
8. **P2** (Compliance and Scheduling)
9. Acquisition Strategy Plan (Compliance and Scheduling)
10. Web CMI (Compliance and Scheduling, Information Phase)
11. Cost Model (Pre Study)
12. Pareto Analysis (Information Phase)
13. Value Index
14. Sharepoint (Information Phase / Post Study)
15. Enterprise Lessons Learned (Information Phase / Post Study)
16. Performance Attributes (Information Phase)
17. Function Analysis (Function Analysis Phase)

18. FAST Diagrams (Function Analysis Phase)
19. Brainstorming (Creative Phase)
20. Decision Matrix (Evaluation Phase)
21. Choosing By Advantages (Evaluation Phase)
22. Life Cycle Costing (Development Phase)
23. Presentation Skills (Presentation Phase)
24. **VERS** (Pre-Study, Post Study)
25. Fishbone Diagram

**E. Under Development (in draft format)**

1. Standard Scope of Work
2. Executive Summary Form
3. Waiver Request Template
4. Proposal Over \$1 M Rejection Request
5. VE Study Presentation
6. PM Checklist
7. Annual Plan Template
8. VE Workshop (Scope/Requirements for A-E Contract)

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## VII. Quality Control/Quality Assurance

(how do we ensure quality?)

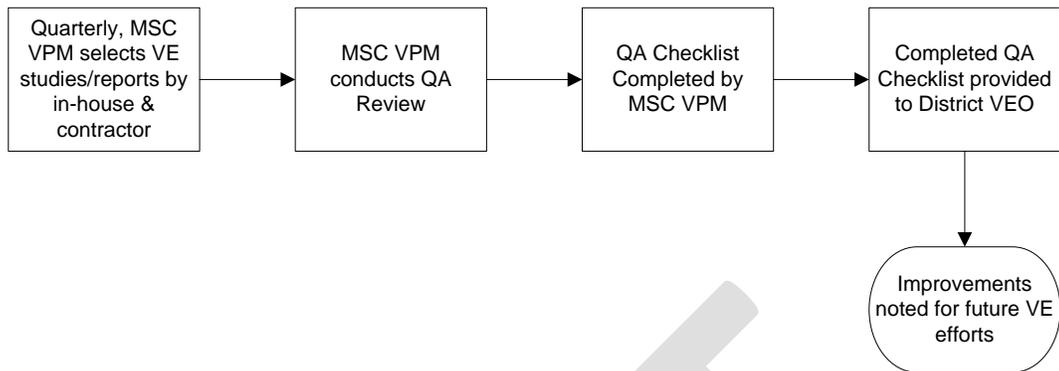
### A. Quality Components.

1. **Quality Composition.** The level of quality built into the program lies within the parameters of control for the end products that are produced. The parameters establish the measure of effectiveness of study execution and resulting final study product. The parameters of control are Quality Control (QC) and Quality Assurance (QA).
2. **Quality Control Responsibilities.** Quality Control of the end product of a Value Engineering Study is the responsibility of the Study Team Leader, either the contractor or the district VEO. The draft study product should be reviewed by all members of the study team. This applies to both In-house and A-E facilitated studies. It is the responsibility of the District VEO to ensure that each study has undergone a Quality Control check for compliance with the established Value Standards and that programmatic requirements have been adequately addressed.
3. **Quality Assurance Responsibilities.** The MSC VE Program Manager is responsible for selecting VE studies/reports for review, conducting and documenting the review, and providing feedback to the Districts for the purpose of continuous improvement to the regional VE program. All VE studies for projects > \$10 million should be reviewed, as well as a representative sample of studies for smaller projects. The Quality Assurance by the MSC Value Program Manager provides for quality verification that the District Quality Control process is functioning.

### B. Quality Process.

The quality process begins with the District VEO and continues within the vertical structure of the organization to ensure the best value for our projects.

1. **District Level Quality Control.** Initially, it is the responsibility of the District VEO to scope the Statement of Work for each Value Engineering Study. This responsibility extends to both In-House study teams and to contracted study teams. The requirements within the scope shall establish the quality parameters required for the study. The Corps has adopted SAVE International's Value Standard (including the six-step Job Plan) as the model ensuring that quality parameters of a study are being met.
2. **MSC Quality Evaluations.** At the MSC level there are two components to Quality Assurance.
  - a. **Quarterly Study Reviews.** MSC Value Program Managers will periodically audit/evaluate the studies being performed within their AOR for strict adherence to the six-step Job Plan prescribed by SAVE International (and described in ER 11-1-321). Each quarter, the MSC Value Program Manager will select representative VE studies/reports in which to conduct a quality assurance (QA) review against the SAVE Value Standard. Studies will be selected in order to review those completed with in-house resources and by contract. The following checklist will be utilized to document the QA review. (With minor modifications, this checklist may also be used by District VEOs for conducting the QA on contracted VE studies.



b. **Periodic Program Check with Districts.** Preferably twice yearly, but at least once a year, each MSC VE PgM will meet with each District VEO within their AOR (to discuss the VE program plan execution; issues creating roadblocks to program execution; assistance needed; training and team development, including development toward AVS/CVS certification; and sharing lessons learned. This discussion may be in a regional meeting, one-on-one, or via telephone. Also, participation with a District VE study is highly recommended, as it allows for a general overview of the District VE Study Planning and delivery process.

c. **Continuous Improvement.** Trends and/or lessons learned from the QA/QC activities within the VE Program will be shared within the regions/MSCs through regional conference calls with District VEOs. Items applicable to the USACE VE CoP will be conveyed during the monthly CoP call with the Value Engineering Advisory Committee (VEAC). VEAC members are responsible for sharing information with their District VEOs.

## Quality Assurance Checklist – Value Engineering Study/Report

### 1. QA Review

a. Conducted by:

b. Date:

c. Study:

### 2. Project Information.

a. Name: *[include brief description & PA]*

b. P2 Number/PN (MILCON):

c. Scheduled Contract Award (CC800 milestone):

### 3. District:

a. District VEO:

4. VE Study/Report prepared by: \_\_\_ In-House \_\_\_ Contractor (identify)

### 5. VE Team

a. Team Leader is to be trained in value methodology techniques. VE Certifications:

b. Disciplines Represented on Team:

### 6. VE Study Dates.

### 7. Study Methodology (SAVE Standard). Identification of the six phases of the Job Plan:

a. Information Phase. *Identify what VE study was based on – 35 % design, feasibility, etc*

b. Function Analysis Phase

b.1. FAST Diagram. *Included in report? Easily readable?*

c. Creative Phase. *# of ideas generated*

d. Evaluation Phase. *Cost models? Changes to Speculation list, etc.*

e. **Development Phase.** *# of proposals, # comments, ideas*

f. **Presentation Phase**

f.1. **Briefing.** **Attendance list included?**

f.2. **Report.** *Date of report – accepted proposals, cost savings/avoidance*

**8. Value Engineering Reporting System (VERS)**

a. **Program Coverage.** **Indicated as complete?** *Y or N - Include study cost if available in VERS*

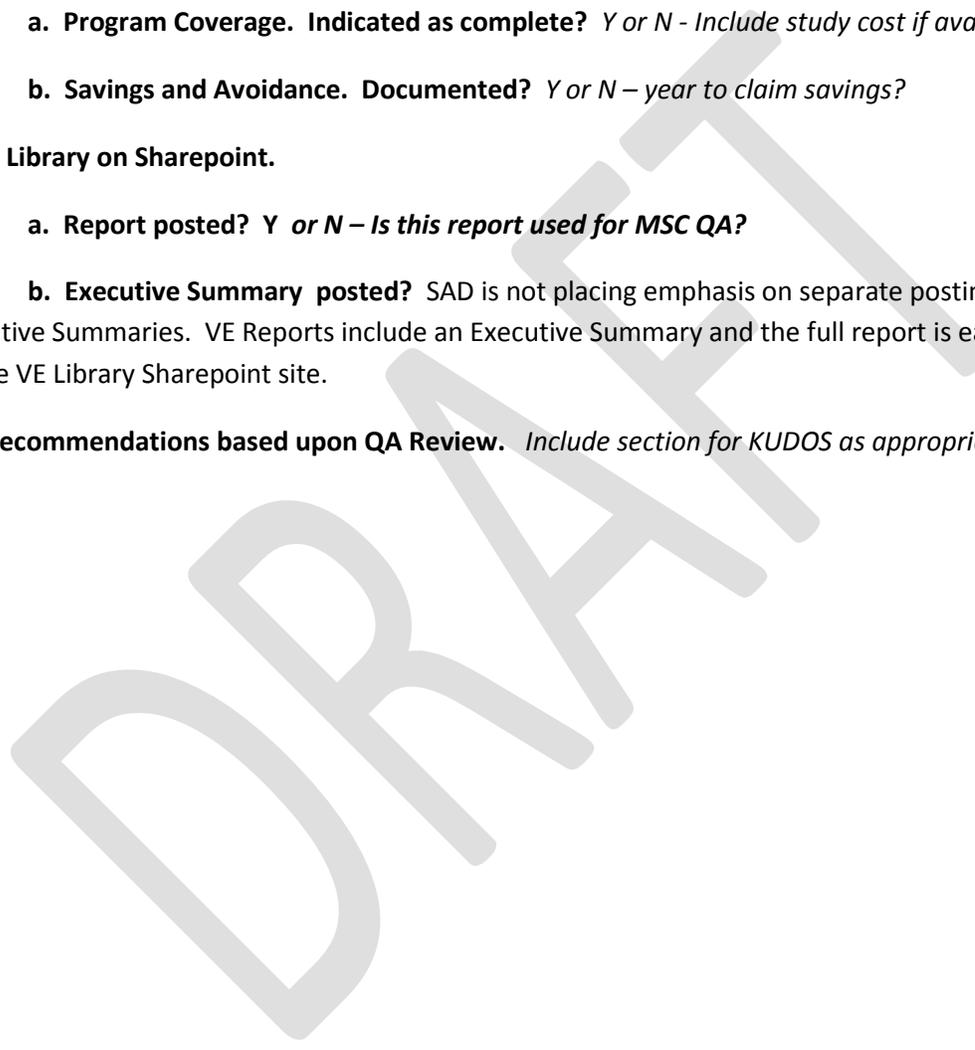
b. **Savings and Avoidance.** **Documented?** *Y or N – year to claim savings?*

**9. VE Library on Sharepoint.**

a. **Report posted?** *Y or N – Is this report used for MSC QA?*

b. **Executive Summary posted?** SAD is not placing emphasis on separate posting of the Executive Summaries. VE Reports include an Executive Summary and the full report is easily accessible on the VE Library Sharepoint site.

**10. Recommendations based upon QA Review.** *Include section for KUDOS as appropriate*



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Susan J. Vohlken, PE, AVS  
SAD VE Program Manager

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Date

*Note: Save file under FY12, QA Reviews – file name should be FY12 SAD QA\_District\_VE Rpt #\_MonthYear*

*i.e. FY12 SAD QA\_VES 12-01\_Nov11.docx*

## VIII. VE Program Metrics

(what are we tracking?)

### A. Program Coverage

1. This is a measurement of mandated or annual plan VE studies done in the current FY. The indicator of the current FY VE Program Coverage Performance is:

$$\text{Accomplished \%} = \frac{(\text{Workshops Performed}) * 100\%}{(\text{Total Workshops Required})}$$

where:

- Total Workshops Required. The number of mandated or total traditional VE studies stated in the current FY VE annual plan.
- Workshops Performed. The number of mandated or total tradition VE studies for which final reports were issued for that FY.

### B. Projected Savings

- C. **Qualitative improvements.** This metric is the non-mandatory project or process enhancements produced by VE efforts. This includes items such as value added program/project improvements, added sustainability, schedule improvements, quality improvements, functional improvements, advanced construction items, plan validations, etcetera.

### D. Milestone Tracking

(when do we report results?)

1. **Quarterly.** VE metrics are reviewed by HQ and the Divisions during each quarterly Directorate Management Review (DMR) for both the Civil Works and the Military programs. Data are pulled from VERS and P2 on the first working day following the end of the previous quarter.
  - a. **Civil Works.** The following metrics are reviewed during the Civil Works DMR.
    - 1) **VM/E Program Coverage.** This metric compares actual VE studies completed (FY to date) vs. VE studies scheduled.. Data is compiled from the following VE milestone data include in P2.
      - Study Phase: P2 milestone CW 195 (VM/E Complete)
      - Design Phase: P2 milestone CW 290 (VM/E Complete)
    - 2) **VM/E Program Coverage: Total Authorized Cost > \$10M (Compliance Check).** This metric is a compliance check for HQ and the MSCs, verifying that a VE study was conducted for each contract greater than \$10M. Construction contracts

awarded to date in the current fiscal year are identified in P2 Milestone CC800 (Contract Award-Construction). Those contracts greater than \$10M are identified, and the P2 numbers are used to verify whether VE studies were conducted, using P2 milestones CW 195 and CW 290 (VM/E Complete) – these data are entered through the PM; VE study completion is also verified in VERS ,where the VEO enters the data.

- 3) **VM/E Cost Avoidance & Savings Goal: 1.5% Total Obligation Authority.** Total Obligation Authority (TOA) is established at the beginning of each Fiscal Year for each District, based on available budget information – it is updated quarterly by HQ Resource Management . The TOA is loaded into VERS by HQ . Cost Avoidance & Savings data are loaded into VERS by the District VEO; it is important that claims for cost avoidance and savings correspond with accepted VE proposals.

1. Monthly PRB
2. Annual Report

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## IX. Records Management

(where do I store this stuff?)

- A. **General.** As directed in [DA MEMO 25-51, Records Management Program](#), all records (hard or electronic) created and/or received in the course of doing Army business will be maintained as required by [AR 25-400-2, The Army Records Information Management System \(ARIMS\)](#). Operational guidance to accomplish this can be found in [DA PAM 25-403, Guide to Recordkeeping in the Army](#). Chapter 8 of [AR 25-1, The Army Information Management Resources Program](#) provides further guidance on records management.
- B. **Marking/Record.** -The information in VE studies' contract documents are sensitive; these documents shall be marked as "For Official Use Only" along with an appropriate "Distribution Statement" in accordance with districts contract protection level. ***For further assistance, contact your district Public Relations Office and/or Security Office.*** The VE reports, which include VE proposals and project scope, shall be uploaded in the VE CoP Share Point; the hard copies shall be kept for record at least five years after the project's award, for audit purposes.
- C. **Public Release of Information.** Documents recommended for public release must be first reviewed in accordance with [DoDD 5230.09, Clearance of DoD Information for Public Release](#). ***For further assistance, contact your district Public Relations Office and/or Security Office.***
- D. **Project Files.** The [ARIMS \(or Records Management and Declassification Agency \(RMDA\)\) website](#) provides guidance for all records in all media and formats.

NOTE: Every record for each project having VE activity shall contain the VE study number and project P2 number. In addition, and as noted in Section XXX, the numbering convention of VE Study Reports, is as follows:

District Symbol-VE-Year (four digits)-Cumulative Study Number for Year (up to three digits)-MP or CW. For example, CESAS-VE-2009-001-MP.

- E. **Types of Records.** Each PM is to maintain the principal project file. At a minimum, the PM shall retain a copy of each VE Study report and subsequent decision phase documentation. The PM shall also maintain a copy of all VECP decision documents, including the final contract modification transmittal. The PM shall also maintain a copy of all waiver decision documents.

Each VPM and VEO is to maintain a record of all VE activity for their district. At minimum, files that shall be maintained include: annual program plans, charrette records, VE study records and reports, VECP documentation, waiver transmittal and approval/denial documents, and personnel training documentation. A summary of minimum records to be maintained in VPM and VEO files follows.

1. Annual Program Plans
  - a. Each FY annual program plan submittal.

- b. Support documentation (e.g., Civil works project tracking matrices). A sample project tracking matrix is provided on the [VM/VE CoP SharePoint website](#).
    - c. Annual [VERS](#) VE program personnel data.
  - 2. Quarterly Reports
    - a. Each quarterly report submitted to [VERS](#), for every data category used.
  - 3. Charrette Workshops
    - a. Pre-study coordination efforts documentation (including scopes of work, and MIPRs and IDIQs [CEFMS](#) records).
    - b. At least one, hardcopy of each charrette report, and decision documentation.
    - c. A digital library of charrette reports, in conjunction to providing a digital copy to the [VE Study report repository](#).
  - 4. Value Engineering Studies and Reports
    - a. Pre-study coordination efforts documentation (including scopes of work, and MIPRs and IDIQs [CEFMS](#) records).
    - b. At least one, hardcopy of each VE Study Report, and decision phase documentation.
    - c. VE Study proposal implementation tracking documentation, including verification of implemented proposal savings. A sample database for tracking VE Study proposal implementation is provided on the [VM/VE CoP SharePoint website](#).
    - d. A digital library of VE Study reports, in conjunction to providing a digital copy to the [VE Study report repository](#).
  - 5. Value Engineering Change Proposals
    - a. A hardcopy of each VECP submittal and subsequent VECP approval or denial (showing the calculation and allocation of savings).
    - b. Database of VECP tracking. A sample database for tracking VECPs is provided on the [VM/VE CoP SharePoint website](#).
    - c. A digital library of VECP submittals and decision documents.
  - 6. Waivers
    - a. A hardcopy of division decision document with district submittal letter.
    - b. Database of waiver submittal approval and/or denial tracking. A sample database for tracking waivers is provided on the [VM/VE CoP SharePoint website](#).
    - c. A digital library of division waiver decision documents with district submittal letter.
  - 7. Personnel Training
    - a. Quarterly in [VERS](#); update status of personnel training
- F. **Length of Retention.** Typically, project records are to be routed from individual work files to a district centralize files area (CFA) or records holding area (RHA) upon completion of each project phase or major product. Project records are also typically retired off-site to a local [Federal Records Center \(FRC\)](#) for storage and in some cases may be accessioned by the [National Archives and Records Administration \(NARA\)](#). Records accessioned by the [NARA](#) are of unique historical value.

1. Retain annual plan and quarterly reports for **two years** in working file area and retire to CFA or RHA. Retire these files to the [FRC](#) after **six years**.
2. At minimum, hard copies of project records (e.g., charrettes and VE studies) shall be retained by VPMs or VEOs **until respective project savings have been completely claimed in [VERS](#)**.
3. Retain VECP records for **two years** in working file area and retire to CFA or RHA. Retire these files to the [FRC](#) after **six years**
4. Retain waiver records for **two years** in working file area and retire to CFA or RHA. Retire these files to the [FRC](#) after **six years**.

G. **Archiving of Records.** Army Corps of Engineers-Information Technology (ACE-IT) Records Management personnel (e.g., a Records Coordinator or Records Manager) are available to provide records and files assistance. Some examples of CFA are: a district library, a district digital library, a district central reading file, and other Corps repositories. On an annual basis and as applicable, archive a file of the following using a [SF 135, Records Transmittal and Receipt](#):

1. Annual plan and quarterly [VERS](#) reports, VECP and waiver documents, and trained personnel [VERS](#) reports.
2. In the event the PM has not archived a copy of a VE Study report(s) in the project file.

If you are unsure about actions for the disposition of your records and files, contact the ACE-IT Enterprise Service Desk (ESD) at 1-866-562-2348 or [ESD website](#) (User Name is your "h#####" identifier, Password is "esd", leave Authentication blank → Use lower case) for Records Management assistance. Records can be retrieved from both the [FRC](#) and [NARA](#) via the assistance of Records Management personnel.

H. **Destruction of Records.** [ARIMS](#) furnishes the only legal authority for deleting or destroying non-permanent (temporary) information. Beware of existing Moratoriums on Records Destruction (record freezes) for records that CAN NOT BE DESTROYED, including Hurricane Katrina and Iraqi Oil. Prevailing Moratoriums are listed at:

<https://hqintra1.hq.ds.usace.army.mil/ceci/recmgmt/MoratoriumRecordsFreeze.htm>.

Unneeded non-record electronic data should be deleted in a timely manner. All files on a user's subdirectory are to be deleted upon their departure from a district. Sensitive and FOUO information shall be shredded with a fine, cross-shredder.

- X. Outreach (how do I get people interested in VE?)  
 A. VEAC Good News Brochure.

The VEAC Good News Brochure and individual good news stories are available at the [VM/VE CoP SharePoint website](#). The purpose is to provide a brief overview of resultant project savings and improvements achieved through VE studies, in order to educate VEOs, project managers, and senior leadership on the benefits of the application of VE studies. The brochure may be used by any USACE employee to learn about and share the benefits resulting from the USACE VE Program. Posting the good news stories to the [VM/VE CoP SharePoint website](#) makes them readily available to the USACE VE CoP to serve as a source of lessons learned and/or best practices; and provides a source of information that can be presented to others about successful applications of VE. The brochure consists of assorted good news stories, and is updated and republished by VEAC members on a periodic basis.

A. Template. A Good News story entry template is available from the [VM/VE CoP SharePoint website](#). Data required to complete the template includes:

1. BLOCK 1. Division/District Name, Project Name, Project Location, Project Team Member, Point of Contact and Date of Submission
2. BLOCK 2. Project Funding (with FY), Estimated Project Cost, Total Number of Proposals Approved, and Total VE Savings/Cost Avoidance.
3. BLOCK 3. Project Description
4. BLOCK 4. Picture(s), Map(s), or Other Project Graphic(s)

- XI. B. Submissions. As part of preparing a VE Study report, or upon acceptance of a significant VECP, the VPM and VEO should prepare a one-page good news story using the template described above. This document is to be uploaded to the [VM/VE CoP SharePoint website](#).

3.

Presentations

4. Awards

. Featured Approved Proposal(s)

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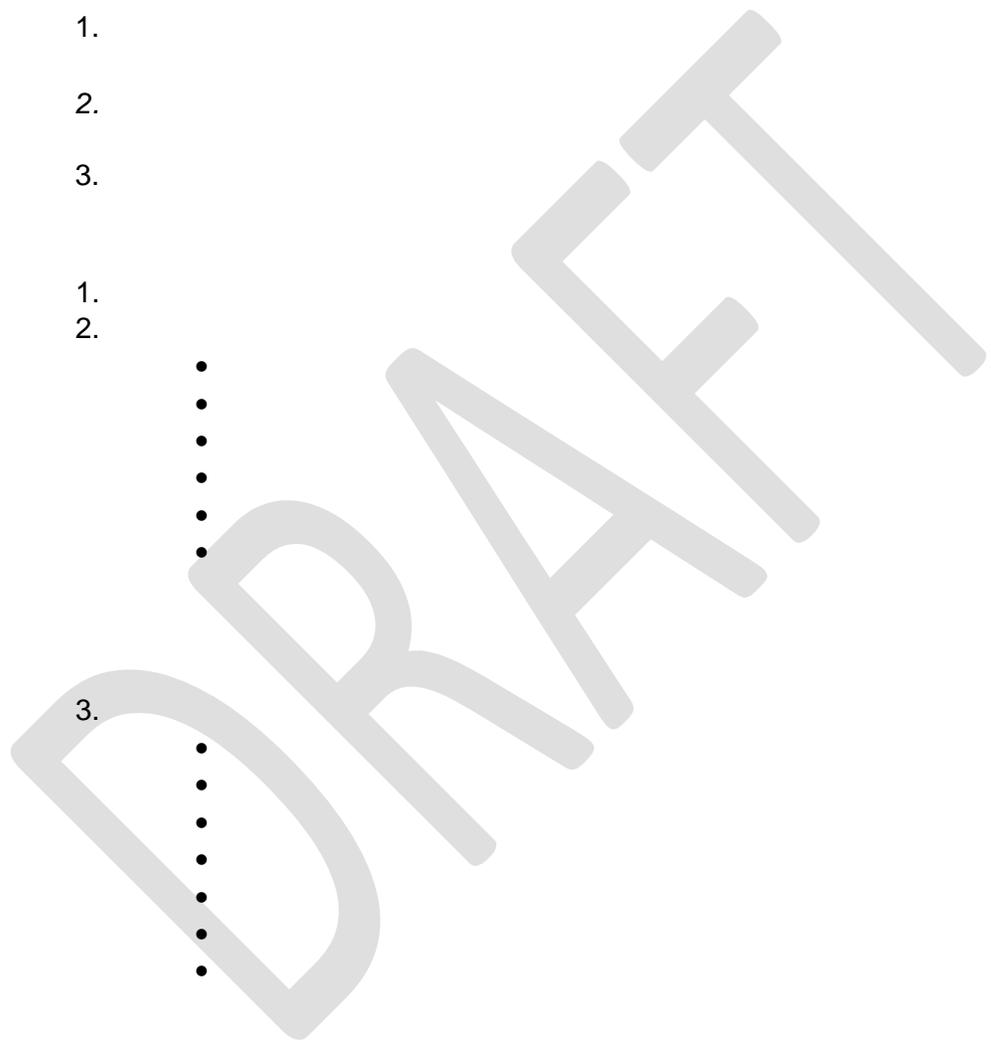
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## APPENDICES

### A. Laws, Policy & Regulations

### B. Guidance

### C. Acronyms

## ACRONYMS

ACE-IT	<a href="#">Army Corps of Engineers-Information Technology</a>
ACSIM	Assistant Chief of Staff Installation Management
A-E	Architect-Engineer
AF	Air Force
AIEP	<a href="#">Army Ideas for Excellence Program</a>
AKO	<a href="#">Army Knowledge Online</a>
ARIMS	<a href="#">Army Records Information Management System</a>
ASTM	<a href="#">American Society for Testing and Materials</a>
AVS	Associate Value Specialist
BCOE	<a href="#">Biddibility, Constructability, Operability and Environmental</a>
BRAC	Base Realignment and Closure
CAP	Continuing Authorities Program
CCE	Current Construction Estimate
CEFMS	<a href="#">Corps of Engineers Financial Management System</a>
CFA	Centralized Files Area
CG	Construction General
CMR	Command Management Review
CoP	Community of Practice
COE	Center of Expertise

COS	Centers of Standardization
CVS	Certified Value Specialist
CW	<a href="#">Civil Works</a>
CWE	Current Working Estimate
DA	<a href="#">Department of Army</a>
DCPDS	Defense Civilian Personnel Data System
DD	Department of Defense (i.e., DD Form)
DFARS	<a href="#">Defense Finance and Accounting Service</a>
DMR	Directorate Management Review
DoD	<a href="#">Department of Defense</a>
DoDD	<a href="#">Department of Defense Directive</a>
EC	<a href="#">Engineer Circular</a>
ECI	Early Contractor Involvement
ENR	Engineering News Record
ER	<a href="#">Engineer Regulation</a>
ERS	Evaluation Reporting System
ESD	<a href="#">Enterprise Service Desk</a>
FAR	<a href="#">Federal Acquisition Regulation</a>
FAST	Function Analysis System Technique
FMS	Foreign Military Sales
FOA	Field Operating Activity
FOUO	For Official Use Only
FRAGO	Fragmentary Order
FRC	<a href="#">Federal Records Center</a>
FUDS	Formerly Used Defense Site

FUSRAP	Formerly Utilized Sites Remedial Action Program
FY	Fiscal Year
GE	General Electric
GI	General Investigation
GS	General Service
H&H	Hydrology and Hydraulics
HQ	Headquarters
HQUSACE	<a href="#">Headquarters United States Army Corps of Engineers</a>
HTRW	Hazardous, Toxic Radioactive Waste
IDIQ	Indefinite Delivery Indefinite Quantity
IIS	International and Interagency Support
IMA	Individual Mobilization Augmentee
IRP	Installation Restoration Program
ISO	<a href="#">International Organization for Standardization</a>
ITR	Independent Technical Review
IVEP	Individual Value Engineering Proposal
LCC	Life Cycle Cost
LCCA	Life Cycle Cost Analysis
LG	Lieutenant General
MAJCOM	Major Command United States Air Force
MCA	Military Construction Army
MCAR	Military Construction Army Reserves
MCAF	Military Construction Army Air Force
MCAFR	Military Construction Army Air Force Reserves
MEMO	Memorandum

MG	Major General
MILCON	Military Construction
MIL Other	Military Construction Other
MIPR	Military Interdepartmental Purchase Request
MMRP	Military Munitions Response Program
MP	<a href="#">Military Program</a>
MSC	Major Subordinate Command
NARA	<a href="#">National Archives and Records Administration</a>
NSPS	<a href="#">National Security Personnel System</a>
O&M	Operation and Maintenance
OMB	<a href="#">Office of Management and Budget</a>
OPORD	Operation Order
P2	<a href="#">Programs and Project Management Software</a>
P&D	Planning and Development
PA	Programmed Amount
PAM	Pamphlet
PAT	Process Action Team
PDT	Project Delivery Team
PL	<a href="#">Public Law</a>
PM	Project Manager
PMBP	<a href="#">Project Management Business Processes</a>
PMP	<a href="#">Project Management Plan</a>
PR&C	Purchase Request and Commitment
PRB	Project Review Board
PROC	Procedure
PROSPECT	<a href="#">Proponent-Sponsored Engineer Corps Training</a>

QA	Quality Assurance
QC	Quality Control
RBC	Regional Business Center
REF	Reference
RHA	Records Holding Area
RMDA	<a href="#">Records Management and Declassification Agency</a>
S&A	Supervision and Administration
SAVE	<a href="#">Society of American Value Engineers International</a>
SF	Standard Form
SHPO	State Historic Preservation Officer
SIOH	Supervision Inspection and Overhead
TAPES	Total Army Personnel Evaluation System
TEN	<a href="#">Technical Excellence Network</a>
U.S.	United States
USACE	<a href="#">United States Army Corps of Engineers</a>
USC	<a href="#">United States Code</a>
VA	Value Analysis
VE	Value Engineering
VEAC	Value Engineering Advisory Committee
VECP	Value Engineering Change Proposal
VEO	Value Engineering Officer
VEP	Value Engineering Proposal
VERS	<a href="#">Value Engineering Reporting System</a>
VM	Value Management
VMP	<a href="#">Value Management Plan</a>

VMP	Value Methodology Practitioner
VPM	Value Program Manager
WBS	Work Breakdown Structure
WebCMI	<a href="#">Corporate Management Information Website</a>

## **D. References**

### **LAWS**

[FAR Part 48, Value Engineering](#)

[FAR Part 52.248-1, Value Engineering](#)

[FAR Part 52.248-2, Value Engineering – Architect-Engineer](#)

[FAR Part 52.248-3, Value Engineering – Construction](#)

[Water Resources Development Act of 1986 \(PL 99-662\), 33 USC 2288, Section 911](#), Effective 17 November 1986

[U.S. Code Title 10, Armed Forces, Subtitle A, General Military Law, Part IV, Service, Supply, and Procurement, Chapter 160, Environmental Restoration, Section 2701, Environmental Restoration Program, Paragraph \(a\)\(2\)](#)

[U.S. Code Title 41, Section 432](#)

[U.S. Code Title 42, The Public Health and Welfare, Chapter 103, Comprehensive Environmental Response, Compensation, and Liability, Subchapter I, Hazardous Substances Release, Liability, Compensation, Section 9605, National Contingence Plan, Paragraph \(a\)\(2\)](#)

### **POLICIES**

[OMB Circular A-94](#), 29 October 1992

[OMB Circular A-131](#), 21 May 1993

[OMB Capital Programming Guide, Supplement to Circular A-11, Part 7](#), June 2006

**DEPARTMENT OF DEFENSE**

[DoD, Office of the Under Secretary of Defense for Acquisition, Technology and Logistics, Contractor's Guide to Value Engineering \(Version 2\)](#), April 2003

[DoD 4245.8-H, Value Engineering Handbook](#), 17 March 1986

[DoD 5200.1-R, Information Security Program Regulation](#), January 1997

[DoDD 5230.24, Distribution Statements on Technical Documents](#), 18 March 1987

[DoDD 5230.25, Withholding of Unclassified Technical Data From Public Disclosure](#), 6 November 1984

[DoDD 5203-09, Clearance of DoD Information for Public Release](#), 22 August 2008

**AIR FORCE**

AF Memorandum for ALMAJCOM/CFC, USAFA/CFC, 11WG/CE, [Value Engineering \(VE\) Policy and Guidance](#), 22 June 2005

**ARMY**

[AR 5-4, Department of the Army Productivity Improvement Program](#), August 1982

[AR 5-17, The Army Ideas for Excellence Program](#), October 1990

[AR 25-1, The Army Information Management Resources Program](#), July 2005

[AR 25-55, The Department of the Army Freedom of Information Act](#), November 1977

[AR 25-400-2, The Army Records Information Management System \(ARIMS\)](#), October 2007

[AR 690-400, Chapter 4302 Total Army Performance Evaluation System](#), October 1998

[DA MEMO 25-51, Records Management Program](#), April 2007

[DA Pam 25-403, Guide to Recordkeeping in the Army](#), December 2006

[SF 50, Amendment of Solicitation/Modification of Contract](#)

[SF 135, Records Transmittal and Receipt](#)

**CORPS OF ENGINEERS**

[EM 200-1-2, Technical Project Planning \(TPP\) Process](#), August 1998

[EP 11-1-3, Value Engineering Officer's Operational Guide](#), January 1987

[EP 11-1-4, US Army Corps of Engineers – Value Engineering, A Profitable Partnership](#), April 1981

[ER 5-1-11, US Army Corps of Engineers Business Process](#), November 2006

[ER 5-1-13, US Army Corps of Engineers Regional Business Centers \(RBCs\)](#), January 2008

[ER 11-1-321, US Army Corps of Engineers – Value Engineering](#), February 2005

[ER 37-2-10, Accounting and Reporting – Civil Works Activities](#), February 2004

[ER 37-345-10, Accounting and Reporting – Military Activities](#), March 1969

[ER 415-1-11, Biddability, Constructibility, Operability, and Environmental Review](#), September 1994

[ER 1110-1-12, Quality Management](#), September 2006

[ER 1110-2-1150, Engineering and Design for Civil Works Projects](#), August 1999

[ER 1110-345-100, Design Policy for Military Construction](#), February 1994

[PMBP PROC 2000, PMP/PgMP Development](#), October 2002

[PMBP REF 8005G, PMP/PgMP Content](#), October 2002

[PMBP REF 8007G, Risk Management Plan](#), October 2002

[PMBP REF 8009G, Change Management Plan](#), October 2002

[PMBP REF 8023G, Value Management Plan](#), October 2002

#### **AMERICAN SOCIETY FOR TESTING AND MATERIALS**

[ASTM E 1699-00, Standard Practice for Performing Value Analysis \(VA\) of Buildings and Building Systems](#), 2005

[ASTM E 2013-06, Standards Practice for Constructing FAST Diagrams and Performing Functional Analysis During Value Analysis Study](#), 2006

#### **SOCIETY OF AMERICAN VALUE ENGINEERS**

[SAVE Value Methodology Standard](#), Appendix, Reference Materials, October 1998

#### **E. Definitions**

**Army Records Information Management System (ARIMS)**. A system that provides policy and procedures for the systematic identification, maintenance, retirement, and destruction of Army record information.

**Associate Value Specialist (AVS)**. A mid-level of certification for practicing Value specialists.

**Biddability, Constructibility, Operability and Environmental (BCOE) Review**. Required to be performed and certified before a construction contract can be advertised.

**Centers of Standardization (COSs)**. COSs are Corps districts with subject matter experts who are assigned the responsibility of consulting others for MPfacility type design and construction. There are 41 facility types (e.g., family housing, dining facilities, child development centers, warehouses). There are eight Corps COSs. They are: Hunstville Center, Louisville District, Norfolk District, Omaha District, Mobile District, Savannah District, Fort Worth District, and Honolulu District.

**Certified Value Specialist (CVS)**. The highest level of certification for practicing Value specialists.

**Community of Practice (CoP)**. A CoP is a group of people who regularly interact to collectively learn, solve problems, build skills and competencies, and develop best practices around a shared concern, goal, mission, set of problems, or work practice. CoPs cut across formal organizational structures and increase individual and organizational agility and responsiveness by enabling faster learning, problem solving, and competence building; greater reach to expertise across the force; and quicker development and diffusion of best practices. CoP structures range from informal to formal and may also be referred to as structured professional forums, knowledge networks, or collaborative environments.

**Contractor**. An individual or organization outside the U.S. Government who has accepted any type of agreement or order to provide research, supplies, or services to a U.S. Government Agency, including both prime contractors and subcontractors.

**Contributed Funds**. These funds are non-Federal funds that are used to support the requirements of the Project Cooperative Agreement.

**Controlling DoD Office**. The DoD activity that sponsored the work that generated the technical data or received the technical data on behalf of the DoD and, therefore, has the responsibility for determining the distribution of a document containing such technical data. For joint sponsorship, the controlling office is determined by advance agreement and may be either a party, group, or committee representing the interested activities or the DoD Components.

**Cost-effective**. Describes the course of action that meets the stated requirement in the least costly method. Cost-effectiveness does not imply a cost savings over the existing or baseline situation; rather, it indicates a cost savings over any viable alternative to attain the objective.

**Current Construction Estimate (CCE)**. The total cost for construction of a particular project, including the escalation. The CCE is usually compared to the contractor's bid proposal.

**Current Working Estimate (CWE).** The total cost of a particular project including the construction and design contingencies and the Army Corps of Engineers construction administration fee (SIOH). The CWE is usually compared to the initial programming amount (PA).

**Customer.** The owner, client, user, or other similar beneficiary of a product having a vested interest in the product. Customers may be multiple entities with conflicting priorities and values.

**Decision Document.** A decision document is any report prepared for the purpose of obtaining project/program authorization or modification, commitment of Federal funds for project implementation, and approval to spend/receive funds as a result of entering into agreements with other agencies or organizations including those to obtain congressional authorization.

**Distribution Statement.** A statement used in marking a technical document to denote the extent of its availability for distribution, release, and disclosure without additional approvals or authorizations. A distribution statement marking is distinct from and in addition to a security classification marking assigned in accordance with [DoD 5200.1-R](#).

**Engineering Center.** Five designated USACE activities with specific engineering, research and development and/or training function. They are: Engineering and Support Center ( Huntsville, AL), Transatlantic Programs Center, Finance Center, Headquarters Engineer Research and Development Center (ERDC) (Vicksburg, MS), ERDC Cold Regions Research and Engineering Laboratory (Hanover, NH), ERDC Construction Engineering Research Laboratory (Champaign, IL), and ERDC Topographic Engineering Center (Alexandria, VA). Each Engineering Center supports very specialized missions that require unique technical expertise in programs that are generally national or very broad in scope.

**Life Cycle Cost Analysis.** The systematic evaluation of alternative designs and the comparison of their projected total owning, operating, maintenance, and disposal costs or retention value over the specified time.

**Life Cycle Costs.** Life cycle costs of an asset are all direct and indirect initial costs, including planning and other costs or procurement, all periodic or continuing costs of operation and maintenance, and costs of decommissioning and disposal; the sum of all developmental, acquisition, production or construction, operation, maintenance, use, and disposal costs for a product or project over a specified period of time.

**Independent Technical Review (ITR).** A technical review by a qualified person or team, not affiliated with the development of a project, for the purpose of confirming the proper application of clearly established criteria, regulations, laws, codes, principles, and professional procedures.

**Military Munitions Response Program (MMRP).** A program category of the Defense Environmental Restoration Program for response actions to address military munitions and explosives of concern and munitions constituents.

**Performance Measurement.** A means of evaluating efficiency, effectiveness, and results. Performance measurement should include program accomplishments in terms of outputs (i.e., quantity of products or

services provided) and outcomes (i.e., results of providing outputs in terms of effectively meeting intended agency mission objectives).

**Project Delivery Team (PDT)**. An interdisciplinary group formed to develop a product.

**Project Review Board (PRB)**. A committee of district upper management who meeting on a monthly basis to review programs and projects regarding quality, schedule, cost, customer relationships, issues, and execution. The PRB Chairperson is the district Deputy for Planning, Programs and Project Management.

**Program Management Plan (PgMP)**. A PgMP and a Project Management Plan (PMP) serve to identify the scope, schedule, and resources needed to accomplish a program's or project's execution. These plans consist of sections which detail how the program or project will be accomplished. These sections include, but are not limited to, team establishment, communications, risk management, quality management, value management, acquisition strategy, and change management strategies for managing the program or project.

**Quality**. Characteristic of a project that meets or exceeds customer needs; adheres to all applicable technical and policy requirements; is on schedule and within budget.

**Quality Assurance (QA)**. The process of oversight and verification of the quality control processes to ensure their effectiveness in the production of quality products.

**Quality Control (QC)**. The process employed to ensure the performance of a task meets or exceeds the agreed-upon requirements of the customer; the proper application of sound technical criteria and practices of the disciplines involved; and appropriate laws, regulations, and policies on schedule and within budget.

**Records Management**. The planning, controlling, directing, organizing, training, promoting, and other managerial activities involved with information creation, information maintenance and use, and information disposition in order to achieve adequate and proper documentation of the policies, transactions, and effective and economical management of DA operations.

**Risk Management Plan**. Risk management is a systematic process of identifying, analyzing, and responding to risk for the entire program or project life cycle.

**Scientific and Technical Information**. Communicable knowledge or information resulting from or pertaining to conducting and managing a scientific or engineering research effort.

**Society of American Value Engineers International**. Formerly called the Society of American Value Engineers, International, this organization sets standards for Value Engineering/Value Management practices, requirements for professional certification and provides training opportunities for VM/VE practitioners.

**Support For Others (SFO).** Projects that are performed by the USACE on a reimbursable basis from the requesting organization, otherwise known as International and Interagency Support (IIS).

**Technical Data.** Recorded information related to experimental, developmental, or engineering works that can be used to define an engineering or manufacturing process or to design, procure, produce, support, maintain, operate, repair, or overhaul material. The data may be graphic or pictorial delineations in media, such as drawings or photographs, text in specifications or related performance or design type documents, or computer printouts. Examples of technical data include research and engineering data, engineering drawings, and associated lists, specifications, standards, process sheets, manuals, technical reports, catalog-item identifications, and related information and computer software documentation.

**Technical Document.** Any recorded information that conveys scientific and technical information to technical data. For example, this includes informal documents such as working papers, memoranda, and preliminary reports when such documents have utility beyond the immediate mission requirement, or will become part of the historical record of technical achievements.

**Technical Information.** Information, including scientific information, that relates to research, development, engineering, test, evaluation, production, operation, use, and maintenance of munitions and other military supplies and equipment.

**Technical Products.** All deliverables are referred to as technical products, including real estate, decision and implementation documents, PMPs, and plans and specifications, that include the integration of technical products from multiple functional elements. They include completed deliverables that are ready for transmission to other members of the design or study team, outside of the element that performed the work.

**Technical Review.** Technical Review focuses on compliance with established policy, principles, and procedures using clearly justified and valid assumptions. It includes the validation of assumptions, methods, procedures, and material used in analyses based on the level of complexity of the analysis. It validates the alternatives evaluated, appropriateness of data used and level of data obtained, functionality of the product, and validates the reasonableness of the results including whether the product meets the customer's needs consistent with law and existing policy and engineering and scientific principles.

**Value Engineering (VE).** VE is an analysis of the functions of a program, project, system, product, item of equipment, building, facility, services, or supply of an executive agency, performed by qualified agency or contractor personnel. VE is directed at improving performance, reliability, quality, safety, and life cycle costs. VE is a function oriented, systematic team approach to eliminate and prevent unnecessary costs. VE is an organized study of functions to satisfy the user's needs with a quality product at lowest life-cycle cost through application of value methodology.

**Value Engineering Advisory Committee (VEAC).** Composed of HQUSACE VPM Officer, MSC VPMs and VEOs and/or their selected representatives formed for the purpose of advising the HQUSACE VPM on matters of importance from their district and division offices.

**Value Engineering Change Proposal (VECP).** A change to a construction, supply, or services contract initiated by the contractor after award with savings being shared between the contractor and Government. The proposal maintains or improves the essential functions or characteristics of the work being changed and results in a reduction of the contract price. A VECP requires a contract modification. The savings resulting from the change is shared between the contractor and the Federal Government as specified in the applicable [FAR](#). The contract clauses apply to all construction and procurement contracts over \$100,000 and may be applied to lesser dollar contracts when the contracting officer determines there is a potential for cost reduction.

**Value Engineering (VE) Methodology or Value Methodology.** A function oriented, systematic team approach to balance performance and cost, performed under the direction of an active District VM/VE Officer or facilitator with qualifications equivalent to a Certified Value Specialist. The Value Engineering methodology utilizes five basic steps to perform an analysis of the functions of a program, project, system, project, item of equipment, building, facility, service, or supply of an executive agency, for the purpose of improving performance, reliability, quality, safety, and life cycle costs. The five-step job plan consists of: Information (functional analysis), Speculation, Analysis, Development, and Presentation Phase, as applied in a VM Workshop or VE Study.

**Value Engineering Proposal (VEP).** A written, detailed proposal regarding any project or activity for which USACE has design, construction, operation, maintenance, procurement, or supply responsibilities that was developed, using VE methodologies, by employees of the Federal Government or A-E employed by the agency, in conjunction with the local sponsor as feasible.

**Value Engineering Modules I and II.** These are the industry standard introductory and developmental value engineering training courses. Offered in USACE PROSPECT, SAVE International and other commercial providers.

**Value Engineering Study or Value Management (Charrette) Workshop.** A process of application of the Value Engineering Methodology, which uses the product delivery team and a multi-discipline team of designers and stakeholders to break down the project into functional performance elements. Cost and benefits are assigned to each element and evaluated. Creative options are then sought to improve functionality and/or cost-effectiveness. Results are documented in a published report. This study or workshop (studies or workshops as appropriate) is (are) a milestone(s) to be identified in the PMP and accomplished as part of the VE/VM process.

**Value Engineering Study Team.** A group of individuals having a variety of backgrounds and skills, organized to apply VE methodology to a project or situation.

**Value Management (VM).** VM is the use of the Value Methodology at multiple points in a project, process, or program to discover, understand, and consider the needs and values of all PDT members, customers, partners, and stakeholders. When performed properly and professionally, VM Workshops help the project manager effectively balance scope, schedule, resources, and quality of a project; as well as define what “value” means to the PDT members, customers, partners, and stakeholders. The VM process emphasizes the use of multi-functional teams and their resulting synergy. It is a management tool that should be applied throughout the life cycle of projects and programs. VM seamlessly integrates into the PMBP and may be applied to all business processes phases.

**Value Management Plan (VMP).** A sub-element of the PMP that describes how value methodology will be applied throughout the life of the project. At minimum, a [VMP](#) shall: (1) establish overall goals of the VM and VE effort for a program or project; (2) specify objectives of the VM and VE effort; and (3) describe the execution of the VM and VE effort.

**F. Points of Contact (suggest leaving this as last item so that it can be easily updated separately from rest of document) – Essentially the same as the VE CoP Demographics**

ATTACHMENT

**Description of Achievement:****Savings/Cost Avoidance:**

- If construction contract has been awarded, identify net 6-year savings (current fiscal year's actual savings and five subsequent years projected savings)
- If contract not yet award, identify projected savings
- Identify savings as % of reporting activity budget (i.e., % of original project cost); if nomination is for a program or group of projects, identify overall % savings of original project cost estimate.
- How were savings validated?
- Are there documented case files? Where?

**Mission of Organization** (place where VE savings were generated)

- Military or SFO: describe mission of client organization, and how VE savings or other improvements contributed to fulfilling this mission
- Civil works: describe mission of District office (i.e, navigation, flood control, hydropower, etc.) and how savings or improvements contributed
- Recommend discussing these with USACE PM and client PM (either external or internal)

**Product/Process/Service Improvement:** Describe how the proposal led to improvements in: (not all may apply - use appropriate aspects; not limited to these)

- Customer satisfaction (external or internal)
- Quality
- Performance
- Reliability
- Maintainability
- Operations & support savings
- Effectiveness
- Efficiency
- Cycle time (replacement) reduction – i.e. extension of unit life

**VE Program Management:** Describe how the nominee (individual, program, organization, contractor) contributed to overall VE Program Management, including:

- Leadership within the program
- Demonstrate growth of the program
- Describe new VE activities or initiatives
- Describe how VE application/methodology has been institutionalized within the organization (i.e., how it's become routine to conduct VE; processes; program management plan)
- Describe scope of potential application of VE methodology
- Innovative ideas or applications
- Proactivity (i.e., outreach, training)
- Cross-functional or inter-agency teaming (i.e. including resource agencies on environmental projects, or Bureau of Reclamation on dams)
- Integration/support of other improvement initiatives/activities (i.e, initiatives in contracting; construction management; Command Implementation Plan)

**Summary of Significant VEPs/VECPs:** Succinctly (no more than one page for each) describe up to three VEPs/VECPs associated with the nominee. Include:

- VE identifying number
- title
- description (describe before and after VE)
- net cost savings/avoidances to DOD

other benefits

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- 
- status (i.e, implemented, in design, etc.).

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**NOTE: Training, Outreach, and Awards Program Sections to be transferred to  
USACE Value Engineering Program Management Plan**

**XVI. Career Planning/Training**

**(how do I learn to do all this!?)**

**A. Career Planning for VEO**

4. **Certification.** SAVE International's Certification Program has two levels of certification which are required for USACE VEOs under ER 11-1-321 Change 1: Associate Value Specialist (AVS); and Certified Value Specialist (CVS). The certification requirements are described in the SAVE Certification and Recertification Manual:  
[http://www.value-eng.org/pdf\\_docs/certification/certification\\_manual.pdf](http://www.value-eng.org/pdf_docs/certification/certification_manual.pdf)
5. **Associate Value Specialist (AVS)** is a recognition designed for individuals who are new to the Value Methodology. It is required within the first year of duty as a VEO at District and MSC level per ER 11-1-321 Change 1. The exam can be taken immediately following the completion of the VE Module I course.
6. **Certified Value Specialist (CVS)** is the highest level of certification attainable through SAVE International. This designation has three tracks, reserved for VM Specialist practitioners, VM Program Managers, and VM Academia who have demonstrated expert level experience and knowledge in the practice of the Value Methodology. Under ER 11-1-321 Change 1, the ultimate certification goal for District VEOs is to attain the CVS within four years of assignment as VEO. The Value Specialist track is for VEOs who either teaches VM, leads or facilitates VM studies, or who participates in VM studies. The Value Program Manager track is for those who are not only responsible for the success of a study, but is also responsible for the management, direction, and overall success of a company or governmental in-house VM Program. District and Division VEOs should be working toward the VM Program Manager certification.

**B. VEO Training**

7. Value Engineering Officer Orientation (New -To be developed)
8. Value Engineering Module I. Value Engineering Module I is the first required course for all levels of certification; all VEOs are required to complete it within the first year of duty as a VEO. This course consists of a minimum of 20 hours of instruction and 20 hours of live project application. Subject matter includes:
  - History, definitions and job plans
  - Function, FAST, function-cost
  - Creativity
  - People-oriented topics
  - Cost
  - Evaluation and implementation

This course may be taken as a PROSPECT course, through a contractor, or at a workshop at the annual SAVE International conference.

9. Value Engineering Module II, consisting of a minimum of 24 hours, is the 2<sup>nd</sup> required course for CVS certification. It is best taken at least 6 months after completion of the VE Module I course, or after participation in at least 2 VM studies. Subject matter includes:
- Project and team structure
  - Job plans
  - Function analysis
  - Creativity (advanced)
  - Financial evaluation
  - Interpersonal skills
  - Value Management

This course may be offered at the annual USACE VE CoP workshop, as a workshop at the annual SAVE International conference, or through a contractor.

10. The course instructor for each module issues a course certificate, indicating that the course is a SAVE approved course (with identifying course number) and the CVS instructor. A copy of this certificate must be submitted with your application for certification.
11. The following courses are examples of cross-training for the VEO that would support their role as a facilitator of Value Engineering studies. Descriptions are available in the ULA Purple Book
- Civil Works Orientation
  - Civil Works Planning
  - Project Management – Civil Works
  - Project Management – MILCON
12. Other Training Resources
- e. The [Air Force Institute of Technology](#) offers various courses (e.g., Contracting and Acquisition management (CMGT 523), Strategic Cost Management (FMGT 520), Project Management (SMGT 546), and various cost analysis (COST), engineering (EMGT) and environmental courses (ENVR)).
  - f. USACE recommended courses for project managers are available through the [Project Management Institute](#).
  - g. USACE recommended leadership development courses are available through the [U.S. Department of Agriculture's Graduate School](#).
  - h. Courses also available through Defense Acquisition University (DAU)

- E. Workforce Training. It is recommended that project managers and district leadership take the Value Engineering Module I course at least once to help give them a better perspective on the application of Value Management and Value Engineering. The District VEO should also implement a continuing education program on Value Management and Value Engineering, using such venues as brown bag lunches, short presentations at staff meetings, or success stories in the district newsletter.

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**XVII. 5. BLOCK 5 Awards Programs**

**(what sort of recognition do we get?)**

- E. Each year, the Department of Defense (DOD) has a Value Engineering (VE) Achievement Awards ceremony, with presentations by the Under Secretary of Defense (Acquisition Technology and Logistics) or a flag rank representative from the Pentagon. This ceremony recognizes all individuals and organizations that have made significant contributions to the Department of Defense through VE-related efforts, resulting in cost savings or cost avoidances, quality improvements, or efficiencies.
- F. Awards are presented for each Defense Component, including Army, Navy, Air Force, Defense Logistics Agency, Corps of Engineers, and others. Each DoD Component may submit one nominee for each of the first five categories described below, and up to three nominees for the sixth (special) category. Competition for the first five categories below is within each Service/agency; i.e. competition for the USACE nominations is only among the nominations submitted by the Corps offices. (Special award nominations are competitive among the Services and Defense agencies.) Nominations are written in the fact sheet formats provided annually (usually as described in Attachment \_\_\_\_). Awards for the USACE nominations will be selected by the Value Engineering Advisory Committee (VEAC).
- G. Categories include:
7. **Program/Project:** This category is for military, civilian, or contractor personnel who have generated VE savings on a specific construction project, system, item, or family of items and who have made a noteworthy contribution to the application/implementation of VE to areas under their cognizance.
  8. **Individual:** An individual (military or civilian) who is:
    - A member of a DoD organization in the areas of engineering, logistics/supply support, testing, budget management, and planning;
    - A member of a VE Program Office, Integrated Product Team, and Contract Administration Office; and/or
    - A DoD contractor or subcontractor who has made a noteworthy contribution to the implementation/application of VE to areas under his/her cognizance.
  9. **Team:** Teams of military or civilian personnel who are:
    - A member of a DoD organization in the areas of engineering, logistics/supply support, testing, budget management, and planning;
    - A member of a VE Program Office, Integrated Product Team, and Contract Administration Office; and/or
    - A DoD contractor or subcontractor who has made a noteworthy contribution to the implementation/application of VE to areas under his/her cognizance.
  10. **Organization:** This category is for a military or civilian activity with a distinct title that has made a noteworthy contribution to the application/implementation of VE to areas under their cognizance. Examples are:
    - F-18 Program Office
    - The U.S. Army Aviation and Missile Command
    - The Defense Logistics Agency Value Management Office

11. **Contractor:** This category is for a DoD contractor or subcontractor who has made a noteworthy contribution to the implementation/application of VE to areas under its cognizance.
  12. **Special:** These special awards recognize outstanding contributions to the VE Program that demonstrate innovative approaches and applications and/or expand the benefits of VE. The special awards will be competitive among the Services and Defense agencies. VE contributions worthy of this special recognition may be drawn from those actions during the last 5 fiscal years.
- H. The fact sheets for the nominations are not long, but require some thought to write up and to document the achievements in the proper format and in sufficient detail. Preparation of the fact sheets should commence sufficiently early to meet submittal deadlines. Fact sheet guidance and examples are shown in Appendix \_\_\_. (Hint: Use the Fact Sheet as a tool while developing your Annual Plan.)

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