



US Army Corps of Engineers
Headquarters

VE Program Guidance Information Paper

Updated April 2015

SUBJECT: U.S. ARMY CORPS OF ENGINEERS (USACE)
VE Screening/Strategy Selection/Value Management Plan (VMP) Tool

1. **BACKGROUND:** The primary challenge in meeting VE statutory and regulatory requirements is adherence to policy for the preparation and inclusion of the VMP in the Program and Project Management plans (PgMP/PMP) as required by the USACE Project Management Business Process (PMBP REF8023G Value Management Plan). To address this issue, HQ USACE held two enterprise level VE workshops early in FY13. The objectives of the workshops were to ensure VE process activities are fully integrated into the PMBP by automating preparation of the VMP ensuring required VE studies are resourced, scheduled, and compliance documented; and to provide the capability to store, retrieve, and re-use VE proposals thus enhancing the ability to build on past VE Study efforts.

2. **KEY OUTCOMES:** The primary outcome of the workshops was the development of an automated VE Screening/Strategy Selection/Value Management Plan tool which identifies “Opportunity for a VE workshop” vs “Low Opportunity”, allows selection of the level of effort most appropriate if “Opportunity for VE” is determined, and documents the decisions made in the VMP. The automated VE Screening Tool (stored on the VE CoP SharePoint site) consists of a series of worksheets prepared by the VEO that conclude with the VMP, which is then inserted in the PgMP/PMP. The worksheets are divided into three sections:

SECTION I- INITIAL SCREENING PROCESS

After answering a series of questions in Section I, the VEO documents the decision to:

- 1) Proceed to Strategy Screening Process (conduct VE Study)
- 2) Identify as Low Opportunity (VMP Only/ Bridge/Scan)
- 3) No Further Action.

If the project or procurement is not federally funded (i.e. Host Nation funded, non appropriated funds, etc.) or if the Corps is not the design agent, the tool leads to determination and documentation that VE is not required to be addressed which is then recorded in the VMP.

NOTE: Selection of Low Opportunity/Bridge/Scan requires a narrative description/justification as to why this option was selected and approval from the appropriate authority as indicated herein.

SECTION II- STRATEGY SCREENING PROCESS

If directed to Section II, the VEO, along with Project Delivery Team (PDT), populates the procurement or project specific details, stakeholder details, and details that identify risk and/or opportunity for further VE Activities which assist with assessing the overall complexity of the procurement or project with respect to the data entered in Section II.

SECTION III- STRATEGY SELECTION.

If opportunity for a VE workshop is determined, the VEO in concert with the Program/Project Delivery Team will proceed to the Strategy Selection Process which will result in determination

SSS/VMP Version 2.0.2

of the level of effort recommended: Value Planning (Level 1), Abbreviated Study (Level 2), Standard Study (Level 3), Problem Resolution (Level 4), Programmatic (Level 5) or Enterprise (Level 6), a recommended team strategy, and guidance as to when to perform multiple value activities. Refer to VE Screening and Strategy Selection Process Map located on the HQ USACE VE website (<http://www.usace.army.mil/ValueEngineering.aspx> under Policy Menu then Process Maps). The VEO has the opportunity to override the suggested strategy in the automated VMP. The definitions for the various value activities, team strategy, and multiple value activity guidance are listed below. The available strategies are grouped into two categories, Low Opportunity or Level of Effort; the difference between the two being whether a VE workshop that complies with the standards will be performed or not.

CATEGORY 1- LOW OPPORTUNITY: VE REQUIREMENTS ARE ADDRESSED BUT A VE WORKSHOP IS NOT PERFORMED

There are three subparts to the Low Opportunity (LO) category: Low Opportunity, Low Opportunity Bridge (LOB), and Low Opportunity Scan (LOS). Any results from the Low Opportunity category will count towards Cost Avoidance/Cost Savings and Compliance but will not count towards Program Coverage since an actual VE study/workshop did not occur (DoDI 4245.14 requires USACE to report for Program Coverage those results from function analysis which only occurs in a VE workshop). DO NOT schedule VE Study Milestones in P2 when Low Opportunity, Bridge or Scan is selected. VE Study Milestones are scheduled ONLY when a VE Study Workshop that meets USACE VE Standards is held. Low Opportunity date is indicated in P2 for Low Opportunity, Bridge and Scan documents associated with the specific contract via User Defined Field: FEATURE code.

The HQ Chief Value Officer (CVO) delegates authority and accountability to the MSC VPgMs up to \$10 million for VMP approval (with all associated requirements for documentation/reporting). VMPs for procurements \$10 million and greater that are determined to be LO require MSC VPgM and HQ CVO approval (signature). VMPs for procurements \$10 million and greater determined to be LOB or LOS require MSC VPgM evaluation on impact to achieving regional goals and ensuring determination is appropriate for the given procurement action. Discussion with and elevation to HQ CVO will occur when VPgM deems significant impact to Annual Performance Goals/Metrics. HQ CVO retains full program authority to actively monitor program status and QA/QC to ensure USACE Enterprise Annual Performance goals are achieved. The expectation is the VPgM will be actively performing Quality Assurance (QA) reviews on their respective Districts to ensure an appropriate mix of low opportunity and level of effort is performed to achieve both the District and MSC annual VE goals.

- a. **Low Opportunity –VMP Only:** Low Opportunity for VE is selected for those circumstances where the VEO makes a judgment, after using the screening tool, that the opportunity for beneficial change through the performance of a VE workshop is low and therefore doesn't warrant additional VE effort. The VEO shall thoroughly document why there is low opportunity and generate a VMP that officially records this decision.
- b. **Low Opportunity - Scan:** This option is considered to be LOW OPPORTUNITY for VE since a workshop is not performed and should be reported as Low Opportunity in P2. This effort involves the VEO and Key PDT members assessing the utilization of previously performed value studies/alternatives. The VEO would query the SharePoint VE Study Library to determine VE studies and alternatives that are most applicable to the current

project (this action should ideally be performed at the beginning of a VE study as part of the Information Gathering phase of any study). It would be appropriate to supplement the previous value alternatives with a brief discussion to understand what might be different with this project. A scan may be appropriate for repetitive projects or those projects that have had multiple value studies with similar results. Possible examples where Scan is most appropriate: repetitive re-roofing job, paving, or less complex O&M/SRM type project that is restrictive by time/dollars; same value study performed within the last two years (COF, TEMF, Barracks, etc...)

- c. **Low Opportunity - Bridge:** This option is considered to be LOW OPPORTUNITY for VE since a workshop is not performed and should be reported as Low Opportunity in P2. A Bridge document is prepared when there has been a previous Programmatic VE workshop where alternatives pertain to the subject project at hand and are accepted/implemented into the current scope of work for the subject project. The VEO and key PDT team members shall review the programmatic VE documentation to see which alternatives are applicable to their project. The resulting alternatives that are applied to and implemented by the current project shall be documented in the form of a bridging document that captures what was incorporated from the Programmatic Study into the current project and the associated cost avoidance, if applicable. The Bridging Document must clearly reference the Programmatic workshop report via VE report number and title and is recommended to at least include the cover from the report in the bridging document itself. The expectation is any cost information associated with the programmatic effort may need to be adjusted to best match the project at hand. Cost of this effort will be included in the ROI calculation.

Example 1: A programmatic effort was performed on a standard and that standard is applied to a series of individual projects; a bridge would be required to determine which of the accepted alternatives from the programmatic effort are being utilized on the current project.

Example 2: A programmatic effort was performed looking collectively at the Regional Dredging Program (multiple projects), the implemented alternatives would be captured in a bridge document for each individual project to document VE efforts and cost avoidance/savings.

CATEGORY 2 – LEVEL OF EFFORT: VE WORKSHOP IS PERFORMED (Counts for Program Coverage):

There are six subparts to the Level of Effort category: Levels 1-6. Any results from this Level of Effort category will count towards all metrics (Cost Avoidance/Cost Savings, Compliance and Program Coverage) since an actual VE study/workshop that complies with the standards did occur. VE Study Scheduled/Actual milestones should be entered in P2. Levels 1,2, and 3 are typical VE efforts that do not require any higher authority approval/signature since they apply to a single project or procurement.

- a. **Value Planning Study (Level 1):** This Value Planning effort shall be accomplished very early in the project/procurement and would typically be associated with Feasibility (CW) or Authorized Phase Code 3 (MP). This effort is appropriate for an integrated VE strategy where a value team leader joins the PDT to execute the value process. Possible examples

where this is most appropriate include: Civil Works & Military planning, SRM projects, etc.

- b. **Abbreviated Study (Level 2):** This effort is considered the minimum for executing the full six step VE job plan. A Level 2 will typically take three days to execute and must be done prior to 35%, however earlier is encouraged. This level provides the choice between an integrated approach, fully independent team, or a blend between the two. This effort will satisfy the VE requirements for repetitive projects of medium size and complexity. Possible Examples where most appropriate include: Army Reserve Centers, COF's, Battalion HQ, TEMF, etc.
- c. **Standard Study (Level 3):** This effort is considered a comprehensive standard VE activity. A Level 3 effort typically takes five days to execute and should typically be performed prior to 60%, however earlier is strongly encouraged. This level also provides the choice between an integrated approach, fully independent team, or a blend between the two as long as it is being executed prior to the 35% milestone. This effort would likely be considered the typical strategy that has been performed historically within USACE. This will satisfy the VE requirements for all projects regardless of size or complexity. Possible examples where most appropriate: Hospitals, Schools, Labs, Dams, Levees, etc.
- d. **Problem Resolution Study (Level 4):** A level 4 requires the VEPgM and HQ CVO approval/signature on the VMP since this is by exception and is applied past the 60% milestone. It is intended to address those projects that are still struggling with budget and/or scope; or when the project manager didn't budget and/or schedule the value activity in accordance with the PMBP requirements (specifically Ref 8023G). The VE methodology is a great process to help a team identify the difference between a primary function and a secondary function which translates to effective trade-off analysis to maximize quality within required constraints, and identification of options in lieu of straight up "cost cutting" or "reduction in scope". This activity will typically last five days due to the additional detail that is available. This activity does not have a dollar or complexity restriction. The VE methodology is most effective when applied early therefore this strategy should be considered a worst case scenario and only in unusual cases. This will not be considered an acceptable VE strategy during the preparation of the PMP and therefore cannot be the initial strategy documented in the VMP. Possible Examples where most appropriate: projects late in the delivery process that have a budget or scope problem.
- e. **Programmatic Study (Level 5):** A level 5 requires the VEPgM and HQ CVO approval/signature on the VMP for concurrence and supervision to ensure the appropriate effort is being performed since this effort affects or applies to multiple projects or procurements. This effort is utilized when a program consists of a subset of similar projects that can be addressed by and associated with a programmatic effort. Since the results from a programmatic effort are applied to other projects, the level of effort would typically be considerably more than a single project activity. The typical effort for this type of event would be 5 days and will likely include a larger study team. Programmatic study results shall only be valid for 3-5 years since details can change significantly over the course of a few years. However any substantial changes to the basis of the programmatic task will automatically trigger a new programmatic effort. The MSC Value Program Manager shall actively participate in all Programmatic Efforts (HQ CVO shall participate for Engineering Centers) to ensure an appropriate level of effort and quality is achieved.

Example: The Center of Standardization executes a programmatic study on the functional and operational aspects of the standard designs. Individual project study is required to capture the materials/methods, location and site specific factors. It is anticipated the site specific info would require a reduced level of effort.

- f. **Enterprise Study (Level 6):** A level 6 requires the VEPgM and HQ CVO approval/signature on the VMP This effort is associated with a programmatic effort that will have command wide impact. The results from an Enterprise effort are applied to the program, not individual projects. The level of effort would typically be considerably more than a single project activity. The typical effort for this type of event would be 5 days and may include a larger study team. All Enterprise activities shall be initiated or approved by HQ CVO to ensure the appropriate effort is being performed.

Example: The Enterprise level studies performed by HQ USACE CVO for VE Program Strategy and FAST Diagrams or the DLA Program Study. These result in additional studies at the Program or Project level.

- g. **Waiver:** Waivers are NOT a planned strategy. It is anticipated the VEO will recommend one of the above listed options versus waiver. The concept being the PDT now has many other strategies available to them in which to execute and they should be able to find a method that is appropriate for the circumstances. If the PDT does not wish to utilize one of the other available strategies, then the PM may initiate a waiver request following the procedures outlined in ER 11-1-321 Change 1. Refer to VE Waiver Process Map (see Process Flow Map at <http://www.usace.army.mil/ValueEngineering.aspx> under Policy Menu then Process Maps).

TEAM STRATEGIES:

- a. **Independent Team:** A value study team completely separate from the PDT is assembled to perform an independent analysis. This is the conventional team strategy approach. The involvement of independent teams or team members starts to become more critical as the “project” complexity or size increases or if the PDT is beyond 35% in the delivery process; smaller projects or lower complexity circumstances may benefit from an integrated or blended approach.
- b. **Integrated Team:** This team strategy utilizes the PDT to perform the value activity. The advantage is that additional time is not needed to familiarize team members with project details however, it is critical for the team leader to encourage and/or foster creativity to obtain reasonable results. An integrated team strategy is not allowed once a project or procurement is past 35%.
- c. **Blended Team:** This team strategy is the best of the three strategies because the team benefits from the historical “project knowledge” as well as fresh independent thinking. It is critical that all participants clearly understand their roles and responsibility. The team leader is encouraged to invest additional effort to create a team atmosphere so all participants function as a unified team.

MULTIPLE VALUE ACTIVITY GUIDANCE:

There are circumstances that warrant more than a single value activity for a single project. The

tool provides guidance for this circumstance. The strategy selection tool considers the complexity, timing, and “project” dollar amount to choose which level of effort and whether multiple efforts are appropriate.

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VALUE ENGINEERING WEBSITE:

<http://www.usace.army.mil/ValueEngineering.aspx>

VE PROCESS FLOW MAPS:

VE Requirements Narrative

<http://www.usace.army.mil/Portals/2/docs/Value%20Engineering/VE%20Requirements%20Narrative%20Oct%202014.pdf>

VE Authority & Policy Flow Diagram

http://www.usace.army.mil/Portals/2/docs/Value%20Engineering/VEAuthority_v2%202%203_Apr2015.pdf

VE in the Project Management Business Plan (PMBP)

http://www.usace.army.mil/Portals/2/docs/Value%20Engineering/VE-PMBP_v2.1.2_May2013.pdf

VE Process Map

http://www.usace.army.mil/Portals/2/docs/Value%20Engineering/VE-ProcessMap_v2.1.4_January2014.pdf

VE Screening & Strategy Selection VMP Tool

<https://cops.usace.army.mil/sites/VE/Portal/Screening%20Strategy%20Selection%20%20VMP%20Tool/Forms/Allitems.aspx> (Version 1.0.3 or later)

VE Waiver Process

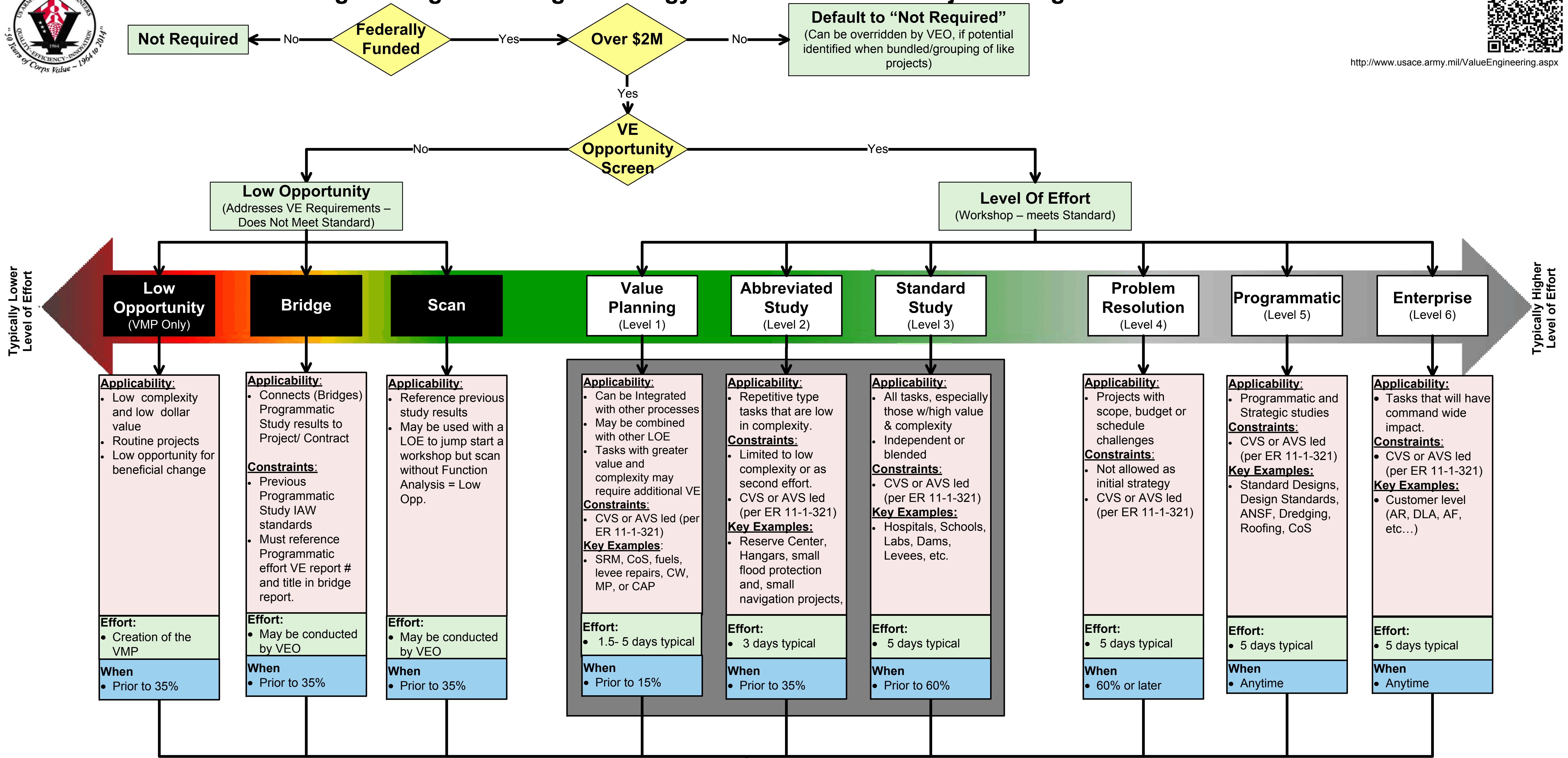
http://www.usace.army.mil/Portals/2/docs/Value%20Engineering/VE-WaiverProcess_v2.1.4_Apr2015.pdf



Value Engineering Screening & Strategy Selection Tool for Projects/Programs/Procurements



<http://www.usace.army.mil/ValueEngineering.aspx>



Typically Lower Level of Effort

Typically Higher Level of Effort

LEGEND

- Value Activity**
(Addresses VE Requirements with VMP)
- Results count toward CA/CS (V1)
 - Results do not count toward PC (V2)
 - Results count toward Compliance (V3)
- Value Workshop**
(Meets VE Standard)
- Results count toward CA/CS (V1)
 - Results count toward Program Coverage (V2)
 - Results count toward Compliance (V3)

Recommend Appropriate Strategy
(Refer to Screening and Strategy Selection Tool, recommend to PDT during or after Acquisition Strategy Meeting ASM)

Create VMP
(Document Strategy)