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SUBJECT VALUE ENGINEERING PROGRAM FOR TRANSPORTATION PROJECTS	APPROVED SIGNATURE 	

PURPOSE

The purpose of this policy for Oregon Department of Transportation (Department) is to:

- Set up and support a program utilizing Value Engineering (VE) on selected projects, processes, and procedures within the Department.
- Define the role, responsibilities, and activities of Department personnel in the VE process.
- Improve the quality, value, and cost-effectiveness of projects, operations, and processes that shall be an overall improvement of productivity and efficiency within the Department.

BACKGROUND

VE has been proven to be an effective tool for product value improvement and design enhancement. VE shall help the Department in its goal of providing cost-effective projects and procedures, and improved productivity and efficiency. VE can be used in all aspects of transportation such as design, traffic operations, construction, maintenance, specifications, standard drawings, and planning.

VE is the systematic application of recognized techniques by multi-disciplined teams which identifies the function of a product or service, proves a worth for that function, generates alternatives through creative thinking, and provides the needed functions at the lowest overall cost.

The Department recognizes the need for responsible use of revenue and resources while providing a safe and efficient transportation system. To meet this need the Department shall set up and support a VE program. The goal of the VE program shall be to make sure projects are cost-effective while supporting or improving project work.

POLICY

All Department Highway construction projects in the Statewide Transportation Improvement Program (STIP) shall be screened based upon established criteria, to determine the need to do a formal VE study. Federal-aid funded National Highway System (NHS) bridge projects with an estimated total cost of \$40 million or more and all other projects with an estimated total cost of \$50 million or more shall be required to have a VE study.

Design-Build (DB) projects will not require a VE analysis.

DEFINITIONS

DB: Design-Build

FHWA: Federal Highway Administration

NHS: National Highway System

RFP: Request for Proposal

STIP: Statewide Transportation Improvement Program

TSP: Transportation System Plans

VE: Value Engineering

GUIDELINES

Projects that use Federal-aid funds on National Highway System projects and have an initial cost estimate of \$50 million (\$40 million bridge projects) or more are required by Federal Highway Administration (FHWA) to have a VE study regardless of the number of phases or unit breakdowns that have occurred on the project. For example a Federal-aid preservation project with an initial cost estimate of \$60 million that has been separated into three \$20 million projects due to funding shortages would still be required to have a VE study.

VE Study Criteria

All Department highway projects in the STIP shall be screened for a VE study, including preservation, modernization, and safety projects. Reconnaissance and planning level studies can also benefit from VE studies. Projects that make good VE study candidates have one or more of the following attributes:

- Projects that have high cost
- Projects that have largely exceeded preliminary cost estimates
- Projects with alternative solutions to documented problems
- Major structures
- Complex projects

- Projects using critical or high cost materials and procedures
- Projects with multiple phases
- Projects with complex traffic staging

VE Study Timing

VE studies may be conducted during one or more project development stages. In general VE studies done early in project development have a greater potential for savings than VE studies done later in project development. Some projects may not benefit from a VE study, while others may benefit from several studies conducted at different times and focusing on different aspects of the project. It is important to structure the VE study to the level of detail proper for the current development stage of the project. Study timing phases include but are not limited to:

- Solution Identification Phase - VE study to evaluate, refine, or reduce alternatives before going ahead with project development. Type of projects include STIP, corridor, reconnaissance, and Transportation System Plans (TSP).
- Preliminary Design - Before the Environmental Impact Study. At this stage major project elements have been done. VE study to evaluate project elements and limit alternatives for advancement. Design completion is about 30%.
- Final Design - VE study to evaluate design details, materials, and staged construction. Design is about 60-70% complete.
- Construction - VE study to evaluate and decrease major cost elements and potential overruns.

VE Training

- Recommended for anyone associated with transportation projects
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RESPONSIBILITY ACTION

Team Leader/
Consultant Project
Manager

- Find potential VE studies for projects not identified earlier, based upon VE study criteria.
- Consult with the Department VE Coordinator, Region VE Coordinator, and Project Manager in scheduling projects selected for VE study.
- Help the Department VE Coordinator in obtaining information on selected VE study projects.
- Review and adopt VE study recommendations or take those recommendations that change original project scope to the Region Management Team for adoption.

Region Value
Engineering (VE)
Coordinator

- Discuss potential of VE study projects identified by the Department VE Coordinator with the Department VE Coordinator.
- Provide liaison between project team and the Department VE Coordinator.
- Help the Department VE Coordinator in coordinating Region VE studies as needed.
- Contact the Department VE Coordinator on potential VE projects not before identified for study.

Department Value
Engineering (VE)
Coordinator

- Screen all Highway STIP projects for potential VE studies based upon VE study criteria.
- Screen project prospectus for VE study potential.
- Review identified VE study projects with Region VE Coordinator, Project Leader, and Project Manager.
- Coordinate/facilitate all aspects of VE study, including assembling VE team and study materials, facilitate study, facilitate VE recommendation proposal to project team, compile report, and track study results.
- Make sure Department staff is trained in VE.
- Provide liaison between the Department and FHWA on the VE program.
- Prepare the Department's annual VE summary report.