# Memo

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| Date: |  |
| Project: | US 77 From Kenedy Co. Line to SH 285 |
| To: | VE Team Members |
| From: | Jose Theiler, PE, CVS® |
| Subject: | Value Engineering Study |

Congratulations!!! You have been chosen to participate in this Value Engineering (VE) study because of your expertise and valuable contributions to the project.

This memo is to introduce some of the expectations for the upcoming VE study. I’m looking forward to working with you on this endeavor. My hope is that this memo will provide information about the project and expectations on working together.

If you have any questions, please contact me, Jose Theiler, at 561-386-3879 (cell), or e-mail: [jose.theiler@hdrinc.com](mailto:jose.theiler@hdrinc.com). Additionally, you can contact Christopher Johnson at 704-915-7810 (cell) or email: [christopher.johnson@hdrinc.com](mailto:christopher.johnson@hdrinc.com).

### VE Study Dates and Location

The VE study will be held on November 28 through December 1 at the following location:

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| Corpus Christi District Office  1701 S Padre Island Drive  Corpus Christi, Texas 78416 |

### What to Bring

Be sure to bring your normal tools of the trade (e.g., calculator, laptop computer, scale, etc.). Bring a creative and open mind. VE studies are a lot of work, but if you bring your creativity and sense of humor you will have a good time and a rewarding experience.

### Ground Rules

1. A VE study follows a prescribed process that has been proven over many years to produce the best results. This process requires the team members be fully engaged and have an open mind to “step” outside of the box throughout the week.
2. To maintain our schedule and provide the best results to the project team, I ask that we follow some basic ground rules:
   1. Virtual Meetings Guidelines: The meeting invitation includes a Virtual Meeting Ground Rules to help with the difficulties of virtual meetings; please follow these guidelines.
   2. We will use MS Teams as a holding place for conversations, notes, documentation, etc. Follow the link [US 77 from Kenedy Co Line to SH 285](https://hdrinc.sharepoint.com/:f:/r/teams/DL10367356-US77fromKenedyCoLinetoSH285/Shared%20Documents/US%2077%20from%20Kenedy%20Co%20Line%20to%20SH%20285?csf=1&web=1&e=FdoheX) to make sure you have access and become familiar with the site.
   3. Please be prepared to attend the entire duration of the workshop. You were selected to assist on this team based on your expertise. If you cannot be in attendance for the entire time, then please notify me prior to the study. When team members leave part way through, or come and go frequently, the VE team can lose its momentum and cohesiveness. We understand that conducting business virtually is different and typical interruptions or noise background is expected at times. Please minimize disruptions by muting your phone or asking for a break.
   4. Avoid multitasking during the study. Unless it is information to assist the team, please try to wait until breaks to return phone calls, check on messages, or sort through e-mails.
   5. Dress code. I want everyone to be comfortable. Some of us will attend from our homes; please dress appropriately (business casual).
   6. A laptop is required for the workshop. We will develop recommendations using templates in Word format and will exchange and share files throughout the workshop.
3. Our success will be evaluated based on the level of contribution that we bring to the project. Remember that the goal of any VE study is to add value to the project; saving money is just a byproduct. We want to make recommendations based on solid engineering judgment that will result in an improved project.

## Value Engineering Job Plan

The VE team will employ the six-phase VE job plan in analyzing the project. This process is recommended by SAVE International® and AASHTO, and is composed of the following phases:

**Information Phase –** The objective of this phase is to obtain a thorough understanding of the project’s design criteria and objectives by reviewing the project’s documents and drawings, cost estimates, and schedules. Elements include:

* Overview of the VE process
* Understanding of study objectives
* Project Overview and Briefing by the Design team
* Provide insight on project history, design concepts, environmental issues, etc.
* Discuss any design concerns and new concepts involved with the project.
* All appropriate project disciplines should be discussed.
* Discuss/identify any risks or issues that the VE team should concentrate on.
* Provide VE team with any specific project constraints.
* Q&A – Presenters answers questions from the VE team.
* Risk Elicitation: I will conduct a brief risk elicitation session to identify and quantify the top 10 risks of the project. This information may provide an opportunity for the VE team to develop response strategies in the form of recommendations.

**Function Analysis Phase –** Identifying each of the key functions of the project is the most important phase of value engineering, as it is the basis for unlocking the creativity of team members. As part of this phase, the team performs the following tasks with the assistance of the VE Facilitator:

* Defines project and risk functions and assigns them to key project components.
* Classifies functions as either “basic” or “secondary.”
* Sequence functions to understand their relationships using the Function Analysis System Technique (FAST).
* Establishes performance measures.
* Creates the project’s cost model.

**Brainstorming/Creative Phase –** During this phase the team will employ creative techniques such as team brainstorming to develop a number of alternative concepts that satisfy the project’s basic and supporting functions, and mitigate project risks.

**Evaluation Phase –** The purpose of this phase is to evaluate the alternative concepts developed by the VE team during the brainstorming sessions. To that purpose, the team discusses advantages and disadvantages, and uses a number of tools to determine the qualitative and quantitative merits of each concept.

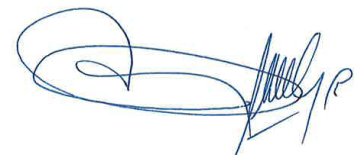
**Mid-study Review With Management Team**: At this point, the VE team holds a meeting with the project team, management, and other stakeholders, to validate the direction of the team and that ideas moving forward to the development phase do not step outside the boundaries set forth by project constraints.]

**Development Phase –** Those concepts that ranked highest in the evaluation are further developed into VE recommendations. Recommendation narratives, additional advantages and disadvantages, drawings, calculations, and life cycle cost analysis are prepared for each recommendation.

**Presentation Phase –** The VE team presents their finding during an oral presentation to the owner and the project team. Following the workshop, a written report is submitted that summarizes the study, its findings, and recommendations.

I’m looking forward to working with you on this VE study and I really appreciate each of you blocking time out of your busy schedules to participate. Please don’t hesitate to call or e-mail me if you have any questions.

Sincerely,



Jose Theiler, PE CVS®

*East Region Manager of*

*Project Risk Management and Value Engineering*

HDR Engineering, Inc

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## Agenda

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| **Day 1** | **November 28**  **Objective for the day: Learn about VE and the Project** | |
| **8:00** | Introductions | All audiences  Project owner, PMs, designers, VE team |
| **8:15**  *Information Phase* | * **Study kickoff** * **VE Process Overview:** an instructional presentation on the principles of value engineering and their application to the project | All audiences facilitated by  Jose Theiler, PE, CVS |
| **8:45**  *Information Phase* | Project Overview   * Purpose and need of the project * Goals and objectives of the project * Constraints * Basis of design * Virtual site visit * Questions and answers | All audiences facilitated by  Project team/designer |
| **10:00** | **Break** | |
| **10:10** *Information Phase* | Risk Elicitation | All audiences facilitated by  Jose Theiler, PE, CVS |
| **11:00** | **Break** | |
| **11:10**  *Information Phase* | Define/Review Performance Attributes | All audiences facilitated by  Jose Theiler, PE, CVS |
| **12:00** | **Lunch** | |
| **1:00**  *Information Phase* | Project Observations | VE team facilitated by  Jose Theiler, PE, CVS |
| **2:00** | **Break** | |
| **2:10**  *Function Analysis Phase* | Function Analysis | VE team facilitated by  Jose Theiler, PE, CVS |
| **3:30** | **Break** | |
| **3:40**  *Creative Phase* | Finalize Function Analysis  Begin Brainstorming   * Brainstorm alternative ways to perform key functions * Brainstorm ways to improve value of key functions | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **5:00** | **Adjourn** |  |

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| **Day 2** | **November 29**  **Objective for the day: Brainstorming Ideas and Evaluation** | |
| **8:00**  *Creative  Phase* | * Day 1 recap | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **8:15**  *Creative Phase* | Creative Phase   * Brainstorm alternative ways to perform key functions * Brainstorm ways to improve value of key functions | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **9:15** | **Break** | |
| **9:30**  *Evaluation Phase* | Evaluate Ideas   * Discuss advantages and disadvantages for each idea * Score ideas based on predetermined criteria to develop further into recommendations | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **10:30** | **Break** | |
| **10:40**  *Evaluation Phase* | **Continue evaluating ideas** | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **12:00** | **Lunch** | |
| **1:00**  *Evaluation Phase* | Develop Ideas into Recommendations   * Individual/team assignments * Development of recommendations   + Test design feasibility   + Design analysis   + Technical narratives   + Further discussion on Advantages and disadvantages * Cost analysis | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **1:30 – 5:00**  *Development Phase* | Check-in Every Hour   * Technical write-up * Graphics/sketches * Cost estimates | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **5:00** | **Adjourn** | |

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| **Day 3** | **November 30**  **Objective for the day: Continue Developing Recommendations** | |
| **8:00**  *Development Phase* | **Continue developing recommendations** | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **9:00 – 12:00**  *Development Phase* | Check-in Every Hour   * Technical write-up * Graphics/sketches * Cost estimates | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **12:00** | **Lunch** | |
| **1:00**  *Development Phase* | Peer review of Recommendations | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **2:30** | **Break** | |
| **2:45**  *Development Phase* | Evaluate performance attributes of recommendations | **VE team facilitated by**  Jose Theiler, PE, CVS |
| **5:00** | **Adjourn** | |

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| **Day 4** | **December 1**  **Objective for the day: Presentation of VE Findings** | |
| **8:00**  *Development Phase* | **Continue evaluation of performance attributes** | VE team facilitated by  Jose Theiler, PE, CVS |
| **10:15** | **Break** | |
| **10:30**  *Development Phase* | **Finalize Close-out Presentation**  Team Rehearsal | VE team facilitated by  Jose Theiler, PE, CVS |
| **12:00** | **Lunch** | |
| **01:30**  *Presentation Phase* | Presentation of VE Findings   * Team presents recommendations to management * Questions and answers | All audiences  Project owner, PMs, designers, VE team |
|  | **Adjourn** | |