



USDA Forest Service

Value Analysis

Study Workbook

Click here to enter text.

Study Name

Click here to enter text.

Organizational Unit

Click here to enter a date. - Click here to enter a date.

Dates of Study

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VALUE ANALYSIS...

An organized method for evaluating an item, a project, process, or system to achieve the required function(s) at optimum cost

INVESTIGATION

Gathering information, finding out what the project is about

ANALYSIS

Looking for the components that have the highest potential for significant improvement or cost reduction, or both

SPECULATION

Brainstorming alternative ways to meet the primary function(s)

EVALUATION

Identifying the best alternatives

DEVELOPMENT

Forming complete descriptions of the best alternatives

PRESENTATION

Presenting findings, alternatives, and recommendations to management

Value Analysis Team

Name	Discipline	Unit	Phone & E-mail
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8. Click here to enter text.			

The Study Subject

General description, reason for selection, and requirements

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Phase I: Investigation

Objective

To gather information about the project that will be needed for the analysis; answers the question "What is the nature of the project?"

Steps

1. Collect information needed for analysis (plans, reports, studies, maps, etc.).
2. Each team member reads, studies, interviews and explores.
3. The team identifies the project, its scope and limits.
4. Identify all performance criteria.
5. Determine the approximate total cost and total worth.

Key Questions

What is the project?

What are the major costs?

How much is it worth?

Key Technique

Seeing what is really there.

Hearing what is really being said.

Step 1: Collect information needed for the analysis

List of plans, reports, studies and documents used for the study

Title	Prepared By	Date
Click here to enter text.	Click here to enter text.	Click here to enter a date.
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Click here to enter text.	Click here to enter text.	Click here to enter a date.
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Step 2: Read, study explore and interview

List of people interviewed for the study

1. Name, Title
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Notes
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2. Name, Title
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Notes
Click here to enter text.
3. Name, Title
Click here to enter text.
Notes
Click here to enter text.
4. Name, Title
Click here to enter text.
Notes
Click here to enter text.
5. Name, Title
Click here to enter text.
Notes
Click here to enter text.
6. Name, Title
Click here to enter text.
Notes
Click here to enter text.

Step 3: Identify the project, its scope and limits

Click here to enter text.

Step 4: Identify the performance criteria

Click here to enter text.

Step 5: Determine the approximate total

Cost of the project Click here to enter text.
Worth of the project Click here to enter text.

Description
Click here to enter text.

Phase II: Analysis

Objective

To find the parts of the project that have the highest potential to reduce the cost or increase benefit, or both.

Steps

1. Establish the function of the entire project.
2. Divide the project into its major components
3. Determine the costs and worth of each component.
4. Determine the functions of each component.
5. Select a component on which to concentrate.

Key Questions

What does it do?
What must it do?
What does it cost?
What is it worth?

Key Technique

Functionalizing: Verb + Noun format
FAST Diagram (optional)

Step 1: Establish the function of the entire project

Example of good verbs: amplify, apply, conduct, control, create, emit, enclose, filter, hold, impede, transmit, transport, interrupt, insulate, modulate, prevent, protect, provide, repel, shield, support

Verb	Noun

Step 2: Divide the project into its major components

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Step 3: Determine the costs of each component

The expected life span is Click here to enter text. years.

Cost Calculations for Components

Component 1: Click here to enter text.

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Component 2: [Click here to enter text.](#)

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Component 3: [Click here to enter text.](#)

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Component 4: [Click here to enter text.](#)

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Component 5: [Click here to enter text.](#)

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Component 6: [Click here to enter text.](#)

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Component 7: [Click here to enter text.](#)

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Component 8: [Click here to enter text.](#)

	Item	Unit	Unit Cost	Quantity	Total
1					
2					
3					
4					
Total Initial Cost					
Salvage Value (year ____)					
Operation & Maintenance/Year					
Replacement Value (year ____)					
Other					
Estimated Life Cycle Cost					

Step 4: Determine the cost/worth and functions (in verb + noun format) of each component

Component	Primary Function	Secondary Function	Cost	Worth	Cost/Worth

Worth is the lowest cost of doing the Primary Function

The **cost/worth** ratio may help in choosing the components worthy of further study.

Step 5: Select a component (or components) on which to concentrate

Component	Cost	Primary Function	Worth	Cost/Worth Ratio
1.				
2.				
3.				
4.				
5.				

Phase III: Speculation

Objective

To find alternative ways of meeting the primary function(s).

Steps

1. As a team, focus on the primary function(s) of the selected components.
2. Brainstorm other ways to meet the primary function.
3. Record each idea.

Key Questions

What else will perform the primary function?

What else may the function be performed?

How else can it be done?

Key Technique

Brainstorming!

Step 1: As a team, focus on the primary function of the selected component(s)

Step 2: Brainstorm other ways to meet the primary function

Step 3: Record each idea

Component [Click here to enter text.](#) Primary Function [Click here to enter text.](#)

Other ways to meet the primary function:

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Component [Click here to enter text.](#) Primary Function [Click here to enter text.](#)

Other ways to meet the primary function:

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Component Click here to enter text. **Primary Function** Click here to enter text.

Other ways to meet the primary function:

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Component Click here to enter text. **Primary Function** Click here to enter text.

Other ways to meet the primary function:

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Component Click here to enter text. **Primary Function** Click here to enter text.

Other ways to meet the primary function:

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Click here to enter text.

Component Click here to enter text. **Primary Function** Click here to enter text.

Other ways to meet the primary function:

Click here to enter text.
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Phase IV: Evaluation

Objective

To identify the best alternative(s)

Steps

1. Rate the feasibility of each idea from Phase III.
2. Summarize the attributes and list the advantages of the most feasible ideas.
3. Decide the importance of each advantage.
4. Select the best alternative(s) for further development.

Key Questions

Is the idea feasible?

Is the cost too high?

Can it be made to work?

Is it acceptable?

Key Technique

Choosing by Advantages

Step 1: Rate the feasibility of each idea from Phase III

Component: [Click here to enter text.](#) Primary Function: [Click here to enter text.](#)

Rank each idea from 0-3. A "0" in any column eliminates that idea. CONSIDER ALL IDEAS	Can it be made to work? 3 = Excellent Chance 0 = No chance	Cost to develop 3 = No Cost 0 = Prohibitive	Probability of acceptance 3 = Excellent Chance 0 = No Chance	Timely Implementation 3 = Excellent Chance 0 = No Chance	TOTAL
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Component: [Click here to enter text.](#) Primary Function: [Click here to enter text.](#)

Rank each idea from 0-3. A "0" in any column eliminates that idea.	Can it be made to work? 3 = Excellent Chance 0 = No chance	Cost to develop 3 = No Cost 0 = Prohibitive	Probability of acceptance 3 = Excellent Chance 0 = No Chance	Timely Implementation 3 = Excellent Chance 0 = No Chance	
CONSIDER ALL IDEAS					TOTAL
1.					
2.					
3.					
4.					
5.					
6.					
7.					
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9.					
10.					

Component: [Click here to enter text.](#) Primary Function: [Click here to enter text.](#)

Rank each idea from 0-3. A "0" in any column eliminates that idea. CONSIDER ALL IDEAS	Can it be made to work? 3 = Excellent Chance 0 = No chance	Cost to develop 3 = No Cost 0 = Prohibitive	Probability of acceptance 3 = Excellent Chance 0 = No Chance	Timely Implementation 3 = Excellent Chance 0 = No Chance	TOTAL
1.					
2.					
3.					
4.					
5.					
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7.					
8.					
9.					
10.					

Component: [Click here to enter text.](#) Primary Function: [Click here to enter text.](#)

Rank each idea from 0-3. A "0" in any column eliminates that idea.	Can it be made to work? 3 = Excellent Chance 0 = No chance	Cost to develop 3 = No Cost 0 = Prohibitive	Probability of acceptance 3 = Excellent Chance 0 = No Chance	Timely Implementation 3 = Excellent Chance 0 = No Chance	
CONSIDER ALL IDEAS					TOTAL
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Component: [Click here to enter text.](#) Primary Function: [Click here to enter text.](#)

Rank each idea from 0-3. A "0" in any column eliminates that idea. CONSIDER ALL IDEAS	Can it be made to work? 3 = Excellent Chance 0 = No chance	Cost to develop 3 = No Cost 0 = Prohibitive	Probability of acceptance 3 = Excellent Chance 0 = No Chance	Timely Implementation 3 = Excellent Chance 0 = No Chance	TOTAL
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
10.					

Step 2. Summarize the attributes and list the advantages of the most feasible ideas for each component.

Step 3. Decide the importance of each advantage.

Step 4. Select the best alternative(s) for further development.

CHOOSING BY ADVANTAGES

Decision making is not a branch of mathematics. All decisions are at least partly subjective. Sound decisions are made by comparing and evaluating the advantages of available alternatives and are more objective than those made by other methods. Basically, Choosing By Advantages (CBA) allows you to identify the issues that are important to a decision and their relative significance, and use that information to make quality choices. CBA operates by comparing advantages rather than juggling advantages and disadvantages. This works because advantages and disadvantages are the two sides of a coin. An advantage for one alternative corresponds to a disadvantage for another alternative. However, CBA allows comparing advantages among several alternatives because it provides a mechanism for making judgments about relative advantages across the full spectrum from awful to wonderful. We will only skim the surface of CBA during this VA. For more information on CBA, consider taking one of the Forest Service sponsored CBA courses or purchasing the book *The Choosing By Advantages Decision making System* by Forest Service retiree Jim Suhr.

CBA DEFINITIONS:

In the CBA vocabulary, these key sound-decision making terms are defined as follows:

A Factor is an element, part, or component of a decision. It is also a container for criteria, attributes, advantages, and other types of data.

Example of a factor: Weight.

A Criterion (pl. criteria) is a decision-rule or a guideline. It is also any decision that guides further decision making.

Example of a criterion: Maximum weight is 85 pounds.

An Attribute is a characteristic, quality, or consequence of ONE alternative.

Attribute of Canoe C: 65 pounds.

An Advantage is a beneficial difference between the attributes of TWO alternatives. (Without exception, a disadvantage of one alternative is an advantage of another.)

Advantage of Canoe C: 10 Pounds lighter than Canoe K, which weighs 75 pounds.

Choosing By Advantages: Decisions must be based on the importance of advantages

Step 2. Summarize the attributes and list the advantages of the most feasible ideas for each component.

Step 3. Decide the importance of each advantage.

Step 4. Select the best alternative(s) for further development.

Component: Click here to enter text.

Important criteria (factors) for this component:

Click here to enter text.

Click here to enter text.

Click here to enter text.

Click here to enter text.

The Tabular Method of Choosing By Advantages

Factor		Idea				
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
Total Importance of Advantages						

Choosing By Advantages: Decisions must be based on the importance of advantages

Step 2. Summarize the attributes and list the advantages of the most feasible ideas for each component.

Step 3. Decide the importance of each advantage.

Step 4. Select the best alternative(s) for further development.

Component: Click here to enter text.

Important criteria (factors) for this component:

Click here to enter text.

Click here to enter text.

Click here to enter text.

Click here to enter text.

The Tabular Method of Choosing By Advantages

Factor		Idea				
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
Total Importance of Advantages						

Choosing By Advantages: Decisions must be based on the importance of advantages

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Step 3. Decide the importance of each advantage.

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Component: Click here to enter text.

Important criteria (factors) for this component:

Click here to enter text.

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Click here to enter text.

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The Tabular Method of Choosing By Advantages

Factor		Idea				
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
Total Importance of Advantages						

Choosing By Advantages: Decisions must be based on the importance of advantages

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Step 3. Decide the importance of each advantage.

Step 4. Select the best alternative(s) for further development.

Component: Click here to enter text.

Important criteria (factors) for this component:

Click here to enter text.

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The Tabular Method of Choosing By Advantages

Factor		Idea				
	Attribute					
	Advantage					
	Importance					
	Attribute					
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	Attribute					
	Advantage					
	Importance					
	Attribute					
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	Importance					
	Attribute					
	Advantage					
	Importance					
Total Importance of Advantages						

Choosing By Advantages: Decisions must be based on the importance of advantages

Step 2. Summarize the attributes and list the advantages of the most feasible ideas for each component.

Step 3. Decide the importance of each advantage.

Step 4. Select the best alternative(s) for further development.

Component: Click here to enter text.

Important criteria (factors) for this component:

Click here to enter text.

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The Tabular Method of Choosing By Advantages

Factor		Idea				
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
	Attribute					
	Advantage					
	Importance					
Total Importance of Advantages						

Step 4: Select the best alternative(s) for further development.

List of selected best alternatives

Alternative: Click here to enter text.

Notes: Click here to enter text.

Alternative: Click here to enter text.

Notes: Click here to enter text.

Alternative: Click here to enter text.

Notes: Click here to enter text.

Alternative: Click here to enter text.

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Alternative: Click here to enter text.

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Alternative: Click here to enter text.

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Phase V: Development

Objective

To develop the alternatives so they can be compared with each other and the original.

Steps

1. Describe the selected alternative(s).
2. Show a map, drawing, or diagram.
3. Consider major components.
4. Determine costs.

Key Questions

How will the new idea work?

How can disadvantages be overcome?

What will be the total cost?

What will be the life cycle cost?

Why is the new way better?

Will it meet all performance requirements?

Other Questions

Are quality requirements met?

Are reliability and operational requirements met?

Is the alternative compatible with the overall design?

Are safety requirements met?

What is the group's recommended priority for implementing the alternatives?

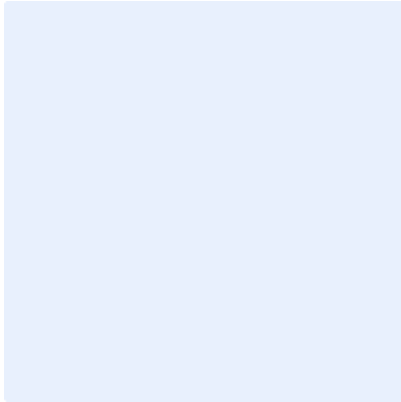
Step 1: Describe the selected alternatives

Narrative description of alternative #: [Click here to enter text.](#)

[Click here to enter text.](#)

Step 2: Show a map, drawing or diagram

Alternative #: [Click here to enter text.](#)



Step 3: Consider the major components and

Step 4a: Estimate initial costs

Cost Computations

Alternative #: [Click here to enter text.](#)

COMPONENT	UNIT	UNIT COST	QUANTITY	TOTAL
1.				
2.				
3.				
4.				
5.				

Step 4b: Estimate life cycle costs

COMPONENT	1:	2:	3:	4:	5:	TOTAL
Initial Cost						
Salvage Value at year _____:	()	()	()	()	()	()
Operation/Mtce (Yearly Cost)						
Replacement at year _____:						
Other						
Total Life Cycle Cost of Alternative:						

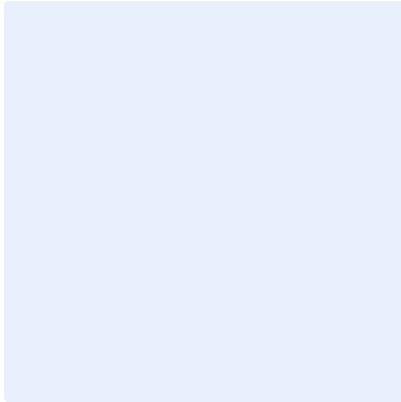
Step 1: Describe the selected alternatives

Narrative description of alternative #: [Click here to enter text.](#)

[Click here to enter text.](#)

Step 2: Show a map, drawing or diagram

Alternative #: [Click here to enter text.](#)



Step 3: Consider the major components and

Step 4a: Estimate initial costs

Cost Computations

Alternative #: [Click here to enter text.](#)

COMPONENT	UNIT	UNIT COST	QUANTITY	TOTAL
1.				
2.				
3.				
4.				
5.				

Step 4b: Estimate life cycle costs

COMPONENT	1:	2:	3:	4:	5:	TOTAL
Initial Cost						
Salvage Value at year _____:	()	()	()	()	()	()
Operation/Mtce (Yearly Cost)						
Replacement at year _____:						
Other						
Total Life Cycle Cost of Alternative:						

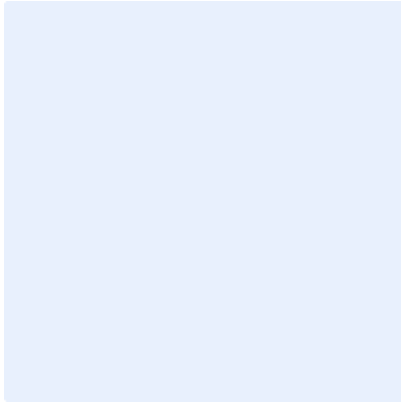
Step 1: Describe the selected alternatives

Narrative description of alternative #: [Click here to enter text.](#)

[Click here to enter text.](#)

Step 2: Show a map, drawing or diagram

Alternative #: [Click here to enter text.](#)



Step 3: Consider the major components and

Step 4a: Estimate initial costs

Cost Computations

Alternative #: [Click here to enter text.](#)

COMPONENT	UNIT	UNIT COST	QUANTITY	TOTAL
1.				
2.				
3.				
4.				
5.				

Step 4b: Estimate life cycle costs

COMPONENT	1:	2:	3:	4:	5:	TOTAL
Initial Cost						
Salvage Value at year _____:	()	()	()	()	()	()
Operation/Mtce (Yearly Cost)						
Replacement at year _____:						
Other						
Total Life Cycle Cost of Alternative:						

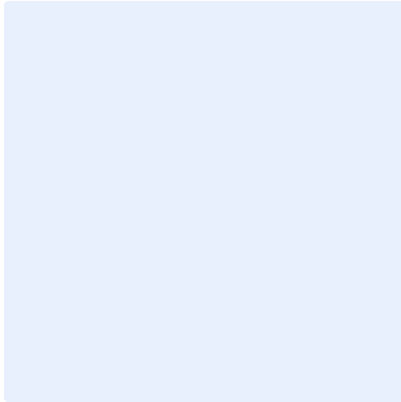
Step 1: Describe the selected alternatives

Narrative description of alternative #: [Click here to enter text.](#)

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Step 2: Show a map, drawing or diagram

Alternative #: [Click here to enter text.](#)



Step 3: Consider the major components and

Step 4a: Estimate initial costs

Cost Computations

Alternative #: [Click here to enter text.](#)

COMPONENT	UNIT	UNIT COST	QUANTITY	TOTAL
1.				
2.				
3.				
4.				
5.				

[Click here to enter text.](#)

Step 4b: Estimate life cycle costs

COMPONENT	1:	2:	3:	4:	5:	TOTAL
Initial Cost						
Salvage Value at year _____:	()	()	()	()	()	()
Operation/Mtce (Yearly Cost)						
Replacement at year _____:						
Other						
Total Life Cycle Cost of Alternative:						

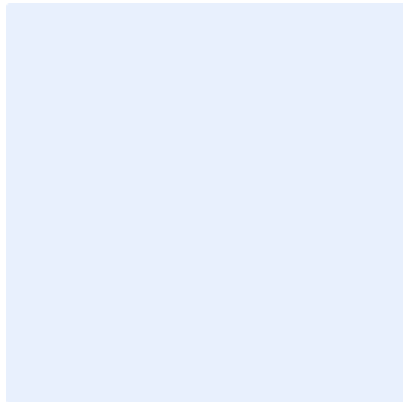
Step 1: Describe the selected alternatives

Narrative description of alternative #: [Click here to enter text.](#)

[Click here to enter text.](#)

Step 2: Show a map, drawing or diagram

Alternative #: [Click here to enter text.](#)



Step 3: Consider the major components and

Step 4a: Estimate initial costs

Cost Computations

Alternative #: [Click here to enter text.](#)

COMPONENT	UNIT	UNIT COST	QUANTITY	TOTAL
1.				
2.				
3.				
4.				
5.				

[Click here to enter text.](#)

Step 4b: Estimate life cycle costs

COMPONENT	1:	2:	3:	4:	5:	TOTAL
Initial Cost						
Salvage Value at year _____:	()	()	()	()	()	()
Operation/Mtce (Yearly Cost)						
Replacement at year _____:						
Other						
Total Life Cycle Cost of Alternative:						

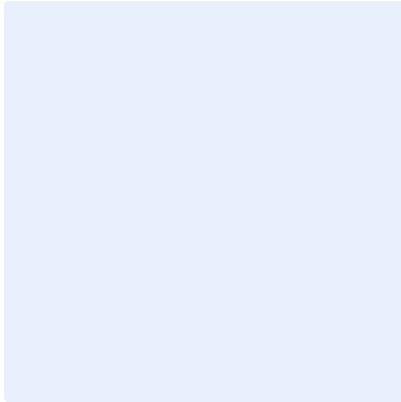
Step 1: Describe the selected alternatives

Narrative description of alternative #: [Click here to enter text.](#)

[Click here to enter text.](#)

Step 2: Show a map, drawing or diagram

Alternative #: [Click here to enter text.](#)



Step 3: Consider the major components and

Step 4a: Estimate initial costs

Cost Computations

Alternative #: [Click here to enter text.](#)

COMPONENT	UNIT	UNIT COST	QUANTITY	TOTAL
1.				
2.				
3.				
4.				
5.				

Step 4b: Estimate life cycle costs

COMPONENT	1:	2:	3:	4:	5:	TOTAL
Initial Cost						
Salvage Value at year _____:	()	()	()	()	()	()
Operation/Mtce (Yearly Cost)						
Replacement at year _____:						
Other						
Total Life Cycle Cost of Alternative:						

Phase VI: Presentation

Objective

To present findings, alternatives, and recommendations to management clearly, accurately, and persuasively

Steps

1. Prepare a preliminary plan.
2. Develop the outline.
3. Prepare visuals and handouts.
4. Make final arrangements.

Key Questions

Who must be sold?

What does the audience need to know?

What is the primary function?

What are the main ideas?

(Original Design)

(Benefits of the proposal)

(Savings)

How should it be presented?

Step 1: Develop a preliminary plan

1. Clarify the purpose of your presentation (usually it is to present the results of your VA Study and to make recommendations)
 - a. [Click here to enter text.](#)
2. Identify your audience:
 - a. Number expected: [Click here to enter text.](#)
 - b. Organization levels: [Click here to enter text.](#)
 - c. Disciplines: [Click here to enter text.](#)
 - d. Special Interests: [Click here to enter text.](#)
 - e. Reasons for attending: [Click here to enter text.](#)
 - f. Familiarity with project: [Click here to enter text.](#)
3. Brainstorm and list essential information the audience will need to know:
 - a. [Click here to enter text.](#)

Step 2: Develop an outline (The following is a suggested outline, but may not fit all VA presentation situations)

1. Introduction
 - a. Headline (A phrase or statement that captures the audience's interest and summarizes your results.)
 - i. [Click here to enter text.](#)

- b. Purpose of presentation
 - i. [Click here to enter text.](#)
- 2. Preview of what your presentation will cover: (During the next 30 minutes we want to...")
 - a. A brief review of the original proposal: [Click here to enter text.](#)
 - b. Opportunities for improving cost/performance: [Click here to enter text.](#)
 - c. Other recommendations: [Click here to enter text.](#)
- 3. Introduction of team members (include background, expertise and home unit):
 - a. [Click here to enter text.](#)
 - b. [Click here to enter text.](#)
 - c. [Click here to enter text.](#)
 - d. [Click here to enter text.](#)
- 4. Review
 - a. Name of study: [Click here to enter text.](#)
 - b. Purpose of study: [Click here to enter text.](#)
 - c. Brief explanation of what a VA is and how it works: [Click here to enter text.](#)
 - d. Team process: [Click here to enter text.](#)
 - i. Example: held opening briefing, took field trip, reviewed documents, interviewed people, conducted standard VA process
- 5. Body of Presentation
 - a. Main idea #1: Describe original proposal
 - i. [Click here to enter text.](#)
 - b. Main idea #2: This could be description of the VA alternative
 - i. [Click here to enter text.](#)
 - c. Main idea #3: This could be description of the VA alternative or other recommendation
 - i. [Click here to enter text.](#)
- 6. Summary and conclusions (such as highlights of the VA proposal, how it meets the primary functions and performance criteria, improvement of the price tag/performance ratio, comparison chart of original vs proposed, etc)
 - a. [Click here to enter text.](#)
- 7. Punchline: Phrase or statement that captures the main point of your presentation
 - a. [Click here to enter text.](#)

PHASE I INVESTIGATION	PHASE II ANALYSIS	PHASE III SPECULATION	PHASE IV EVALUATION	PHASE V DEVELOPMENT	PHASE VI PRESENTATION
"Strangers ask the best questions."	80% of the costs come from 20% of the components." "The function of anything can be described in two words: a verb and a noun."	"Brainstorming yields new ideas."	"80% of the improvement will come from 20% of the ideas."	"The idea is only the first step."	"Support comes from understanding and acceptance."
<i>Objective</i> To gather information about the project that will be needed for the analysis; answers "What is the nature of the project?"	<i>Objective</i> To find the parts of the project that have the highest potential to reduce the cost or increase benefit, or both.	<i>Objective</i> To find alternative ways of meeting the primary function(s).	<i>Objective</i> To identify the best alternative(s).	<i>Objective</i> To develop the alternatives so they can be compared with each other and the original.	<i>Objective</i> To present findings, alternatives, and recommendations to management.
<i>Steps</i> 1. Collect information needed for analysis (plans, reports, studies, maps, etc.). 2. Team members individually all read, study, interview, and explore. 3. The team identifies the project, its scope and limits. 4. The team identifies all performance criteria. 5. Determine the approximate total cost and total worth of the project.	<i>Steps</i> 1. Establish the function of the entire project. 2. Divide the project into its major components. 3. Determine the costs of each component. 4. Determine the functions of each component. 5. Select a component on which to concentrate.	<i>Steps</i> 1. As a team, focus on the primary function(s) of the selected components. 2. Brainstorm other ways to meet the primary function. 3. Record each idea.	<i>Steps</i> 1. Rate the feasibility of each idea from Phase III. 2. List the advantages and disadvantages of the most feasible ideas. 3. Select the best alternative(s) for further development.	<i>Steps</i> 1. Describe the selected alternative(s). 2. Show a map, drawing, or diagram. 3. Consider major components. 4. Determine costs.	<i>Steps</i> 1. Prepare a preliminary plan. 2. Develop the outline. 3. Prepare visuals and handouts. 4. Make final arrangements.
<i>Key Questions</i> 1. What is the project? 2. What are the major costs? 3. How much is it worth?	<i>Key Questions</i> 1. What does it do? 2. What must it do? 3. What does it cost? 4. What is it worth?	<i>Key Questions</i> 1. What else will perform the primary function? 2. Where else may the function be performed? 3. How else can it be done?	<i>Key Questions</i> 1. Is the idea feasible? 2. Is the cost too high? 3. Can it be made to work? 4. Is it acceptable?	<i>Key Questions</i> 1. How will the new idea work? 2. How can disadvantages be overcome? 3. What will be the total cost? 4. What will be the life cycle costs? 5. Why is the new way better? 6. Will it meet all performance requirements?	<i>Key Questions</i> 1. Who must be sold? 2. What does the audience need to know? 3. What is the primary function? 4. What are the main ideas? (Original design, benefits of the proposal, savings) 5. How should it be presented?