



# Value Based Decision-making

The Role of Value Analysis  
in  
National Park Service Capital Improvement

Mike Leborgne  
For Richard Turk



# The basic questions....

...and our agenda

- What is value based decision-making?
- When to do a VA?
- What does a good VA look like?
- What type and size VA?
- Who should be on the VA team?
- Why do a VA?



# What is value based decision-making? How do we make our decisions?

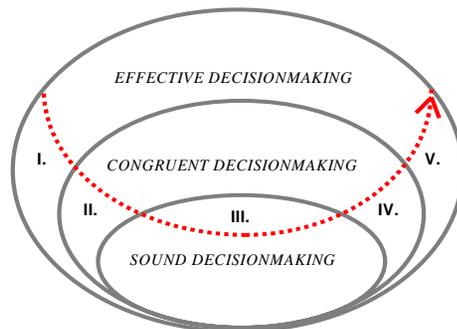
## OBJECTIVES

1. Choosing the right things (sound)...
2. ...the first time, every time, and on time (congruent)...
3. ...in a manner that is acceptable to various stakeholders who may have conflicting values and preferences (effective)...
4. ...and while considering relative costs.

## OPTIONS

1. Darts
2. Paper Rock Scissors
3. Undocumented Discussion
4. EIS's
5. Weighted Factors
6. Multi-Variant Analysis
7. Benefit – Cost Analysis
8. Value Methods
  - Function Analysis
  - Choosing by Advantages
  - Life Cycle Costs
  - Risk Analysis

Choosing by Advantages





# What must be considered?

- **Why are we doing this project?**
  - Purpose and Circumstances of the decision.
  - Is this a visitor center? A research lab?
- **Who is affected by and interested in the decision?**
  - Customers and Stakeholders needs and preferences
- **How big a change are we making?**
  - The magnitudes of the advantages.
- **How many things are affected?**
  - The magnitudes of the associated attributes
- **How important are these differences?**
- **What are the relative costs of the alternatives?**



# Decision-making central questions...

- **Objective:**

- What and how large are the advantages of the alternatives?

- **Subjective:**

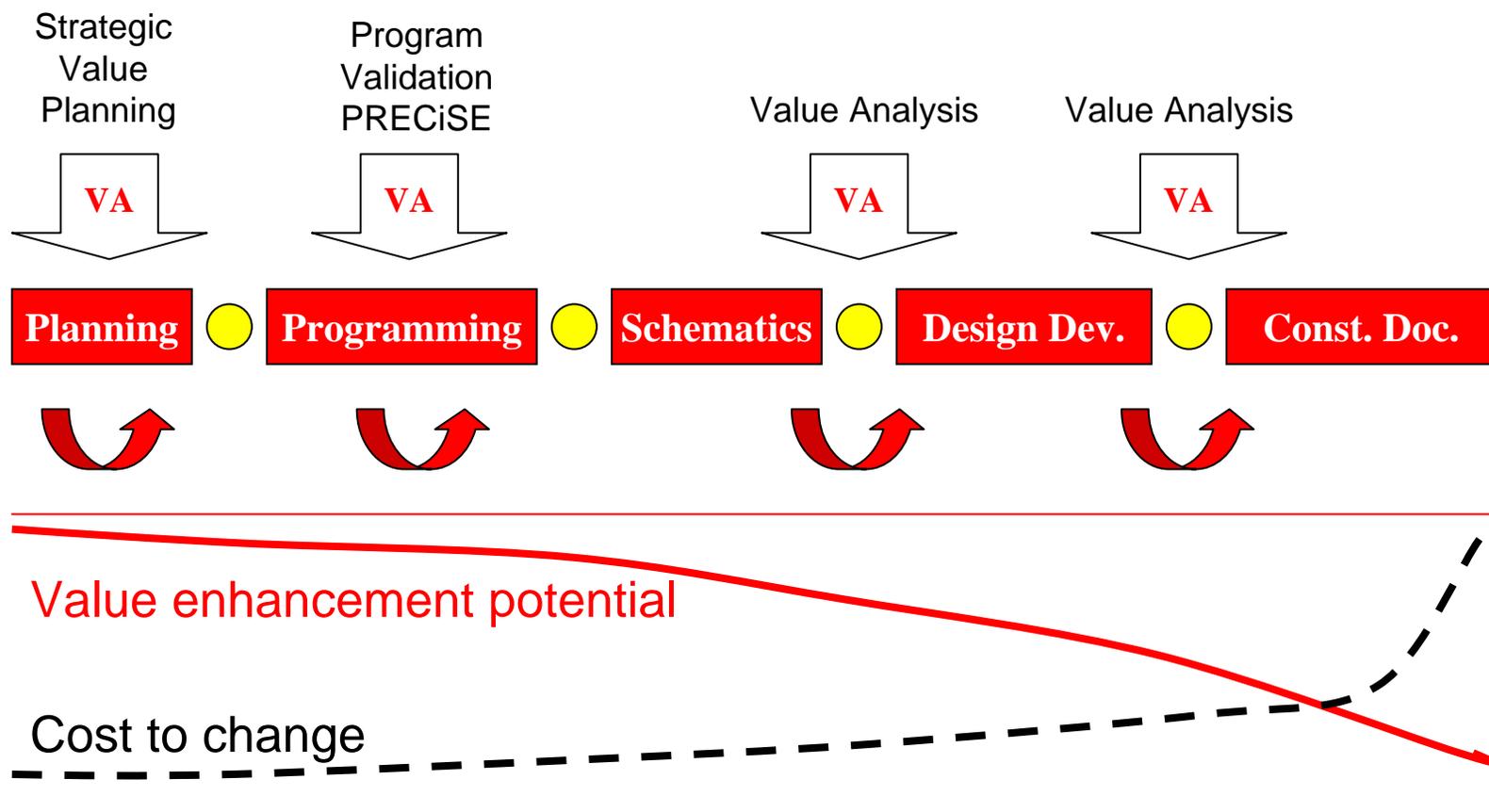
- How important are the advantages of the alternative?

- **Independent Perspective:**

- Are there other perspectives?



# Value-based Decision-making is a continuous process....an Attitude!!!





# What is Value-based Decision-making? What is VA?

“An **organized** effort directed by a person trained in value analysis techniques to analyze the **functions** of systems, equipment, facilities, services, and supplies for the purpose of achieving the **essential function** at the **lowest life cycle costs** consistent with the **required performance**, reliability, quality and safety.”

OMB Circular A-131



or.....

“The systematic application of **recognized techniques** by **multi-disciplined teams** which identifies the function of a product or service, establishes a **worth** for that **function**, and provides **alternate ways** to accomplish the **necessary function**, reliability, and at the **overall lowest cost**, through use of **creative** techniques.”

NPS Value Analysis Manual



# What is Value-based Decision-making? What is VA?

**“an organized team study of functions to creatively generate alternatives which will satisfy the users needs at the lowest life-cycle cost”**

William L. Kelly, You and Value Whatnot



# **It is a structured process...**

guided by the Value Analysis Job Plan

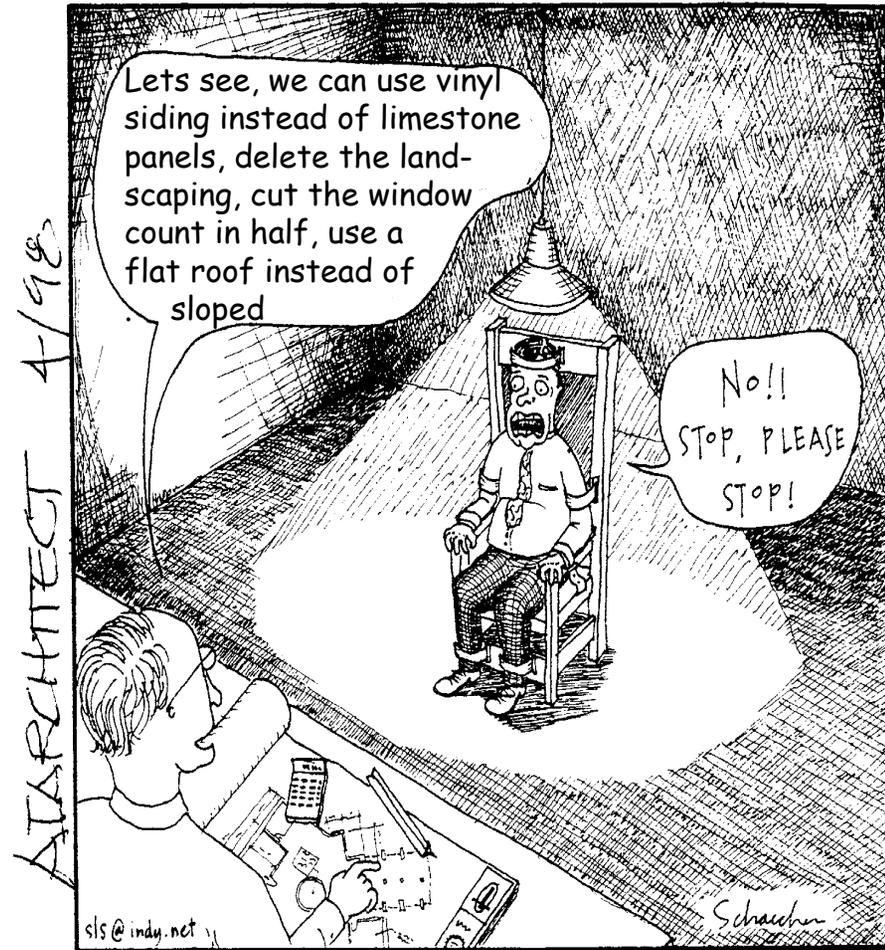
- Information Phase
- Function Phase
- Creativity Phase
- Evaluation Phase
- Development Phase
- Recommendation Phase
- Implementation Phase



# Value Analysis is **NOT**.....

- A method for improving bridge and sewer design that has been **improperly used** for creative projects such as Visitor Centers.
- An unnecessary **bureaucratic** annoyance
- A **foolproof** way to make a decision
- A process that employs **only objective** quantitative methods and avoids subjective judgment
- A good reason to estimate project cost at **\$490K**
- **A COST CUTTING PROGRAM!!!!**

## Oblique View by Steve Schaecher, AIA

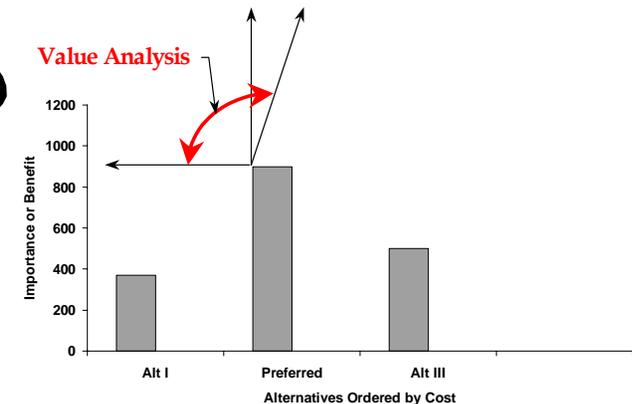
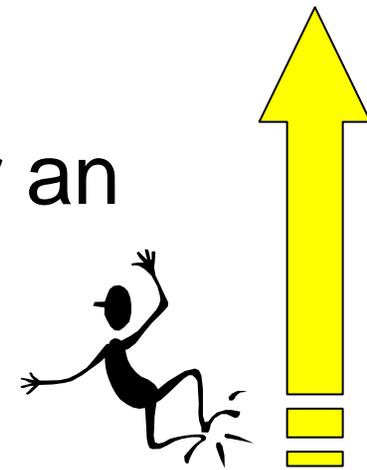
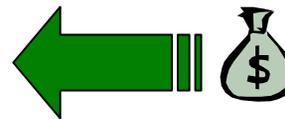


Value Engineering aka **Architorture**



# Value Analysis IS about.....

- Sound, Defensible, Value-based Decisionmaking
- Providing essential functions for an appropriate cost
- Benefit to Cost Relationships
  - reducing cost
  - improving benefits
- Managing the Decisions





# When to do VA?

- ***Value Methods should be used when ever a key planning or design decision is made***
  - Canyon View Information Plaza (12 studies)
    - Mather Point, Grand Canyon NP





# Director's Order 90 Value Analysis

- All NPS programs, projects, and activities will use value analysis as a management and decision-making tool in **(A) performing or contracting for the planning, design, construction, repair and rehabilitation/renovation of facilities**, and **(B) administrative and management programs** to improve operations, identify and remove nonessential capital and operating costs, and improve and maintain optimum quality of program and acquisition functions.



# When to use Value Analysis....

- Value Assessments shall occur at a minimum of three points:
  - **Planning** - Selection of Preferred
  - **Pre-Design** - Selection of Concept
  - **Design** (Design Development) - Selection of major construction elements e.g.. HVAC, Structural systems, etc.

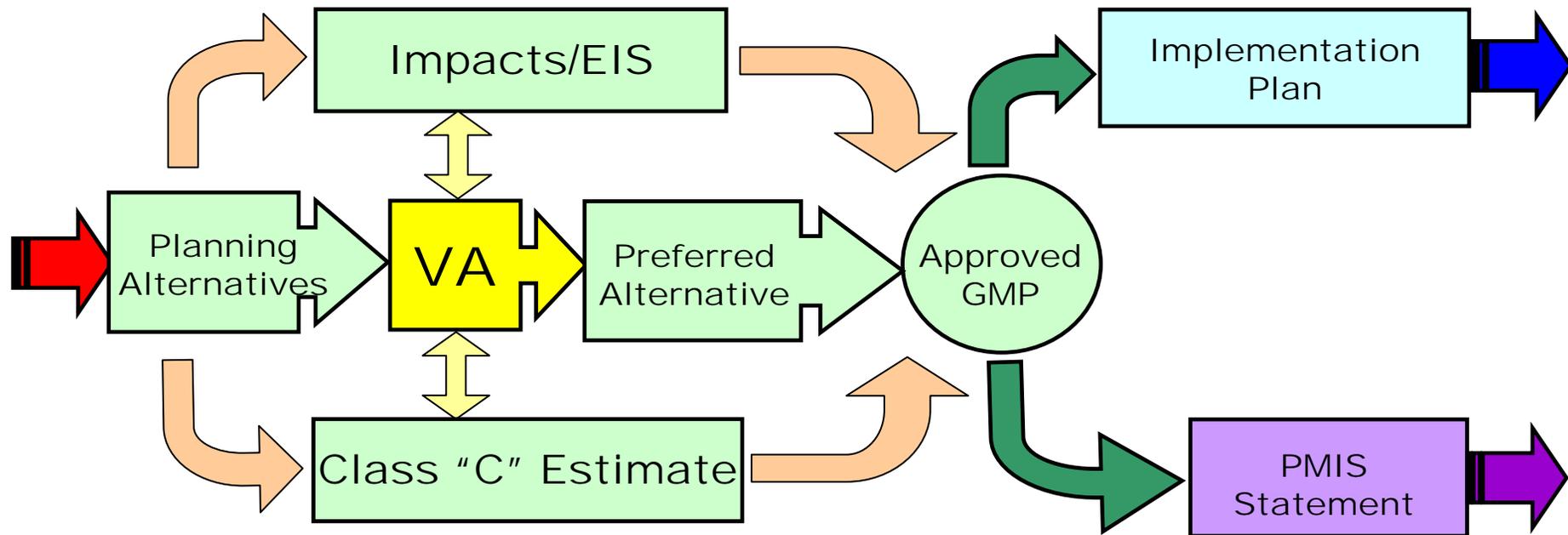


# VA Project Thresholds

- All construction related projects **over \$500,000** subject to Value Analysis
- Projects **over \$10 Million** two VA's required
  - Pre-Design and Design
- Projects **over \$1 Million** one VA required
- Projects **\$500,000 to \$1 Million** VA may be waived if study would exceed anticipated savings. **No Waiver above \$1 Million**
- **Over \$1,000,000** required for administrative and management projects (NPS DO-90 Only)



# Planning-Preferred Alternative General Management Plans

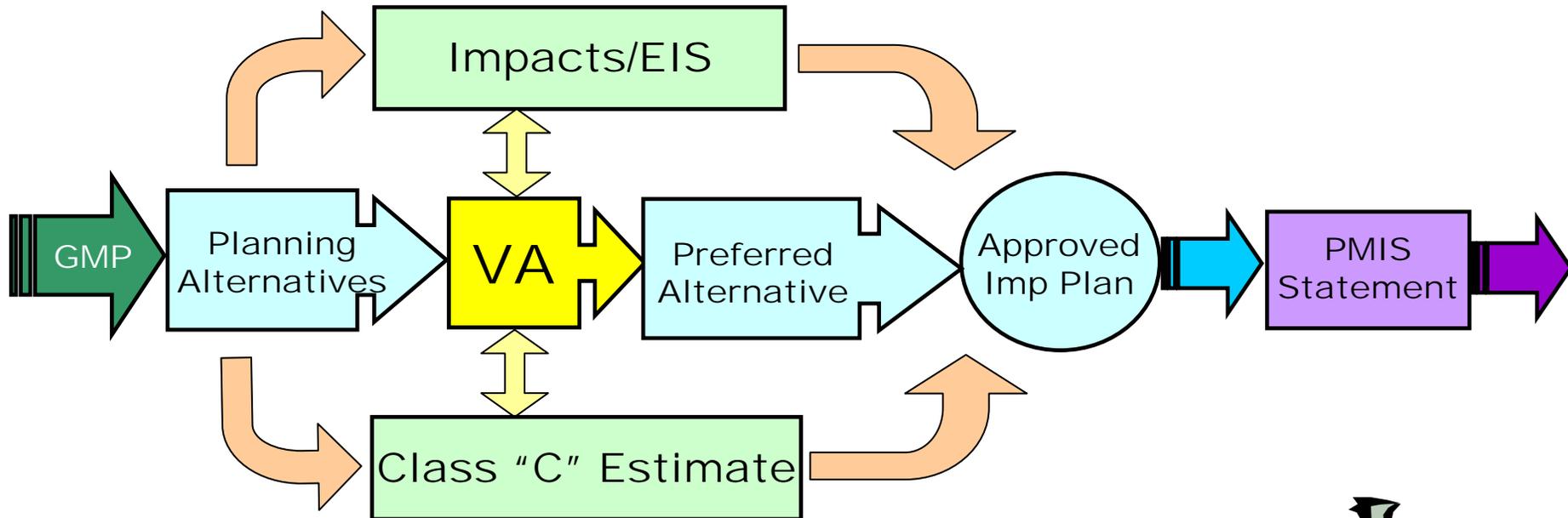


- Selecting preferred alternatives (DO-2)
- Evaluating major transportation systems (Rainier, Mather)
- General Class C estimates
- Not widely done at this time
- **Opportunities for the greatest savings**





# Planning-Preferred Alternative Implementation Plans



- Administrative and Management Programs
- Long Range Interpretive Plans
- Facility Planning
- Business Plans

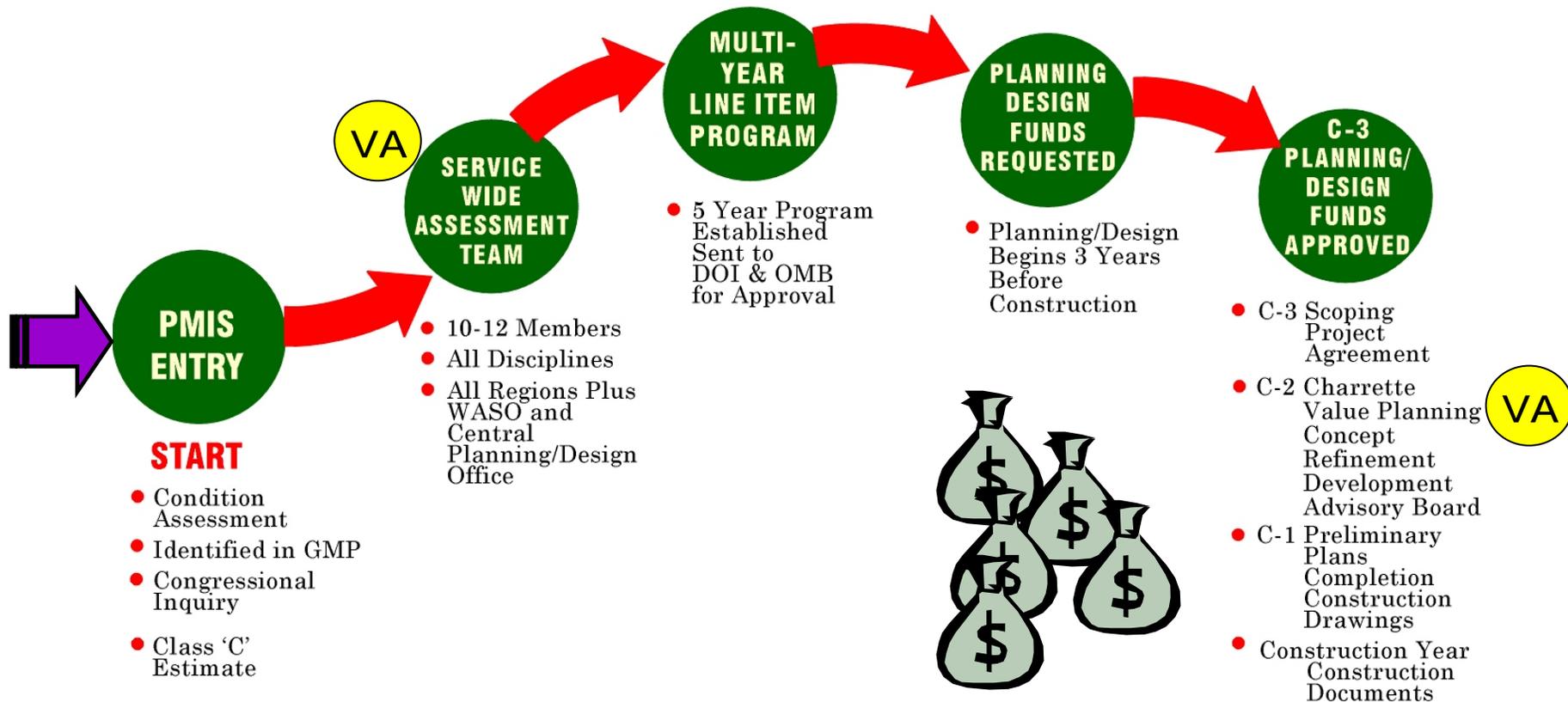




# 1

# PROGRAMMATIC PHASE

DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO



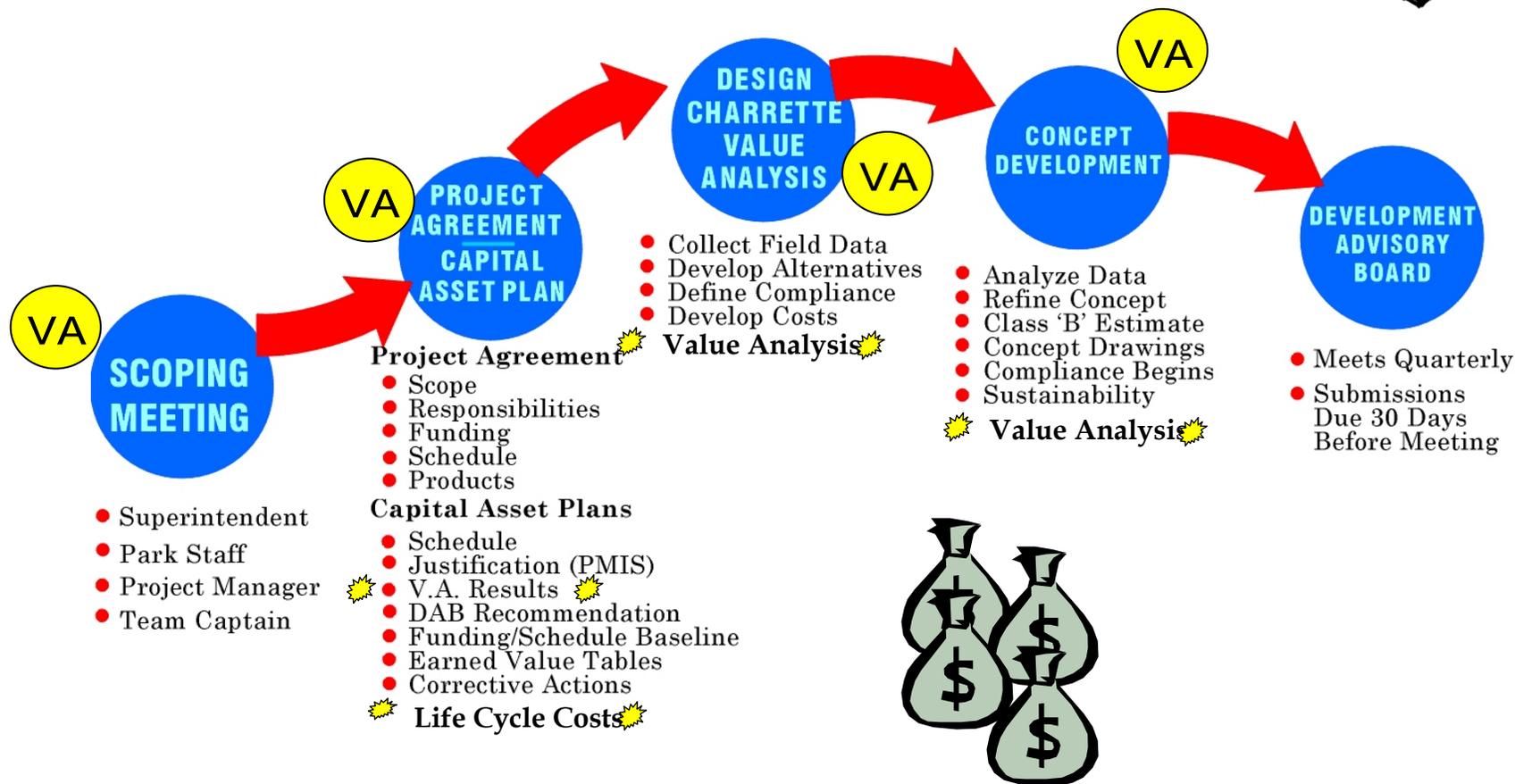
July 2000



# 2

# PRE-DESIGN

## DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO





## 2

**PRE-DESIGN**

DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO

**PROJECT AGREEMENTS**

- Establish Decisionmaking Process
  - Who will decide?
  - What help is needed to decide?
  - How are you going to decide?
  - What information do you need to decide?
- Set sound ground-work and documentation to support project in later phases

**CAPITAL ASSET PLANS**

- Life Cycle Costs Required



July 2000



## 2

## PRE-DESIGN

DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO



## ■ CHARENTTES & CONCEPTS

- Charette/Value Study w/ class C+ estimate
- Chose preferred conceptual alternative
- Can find significant savings
- Set sound ground-work and documentation to support project in later phases



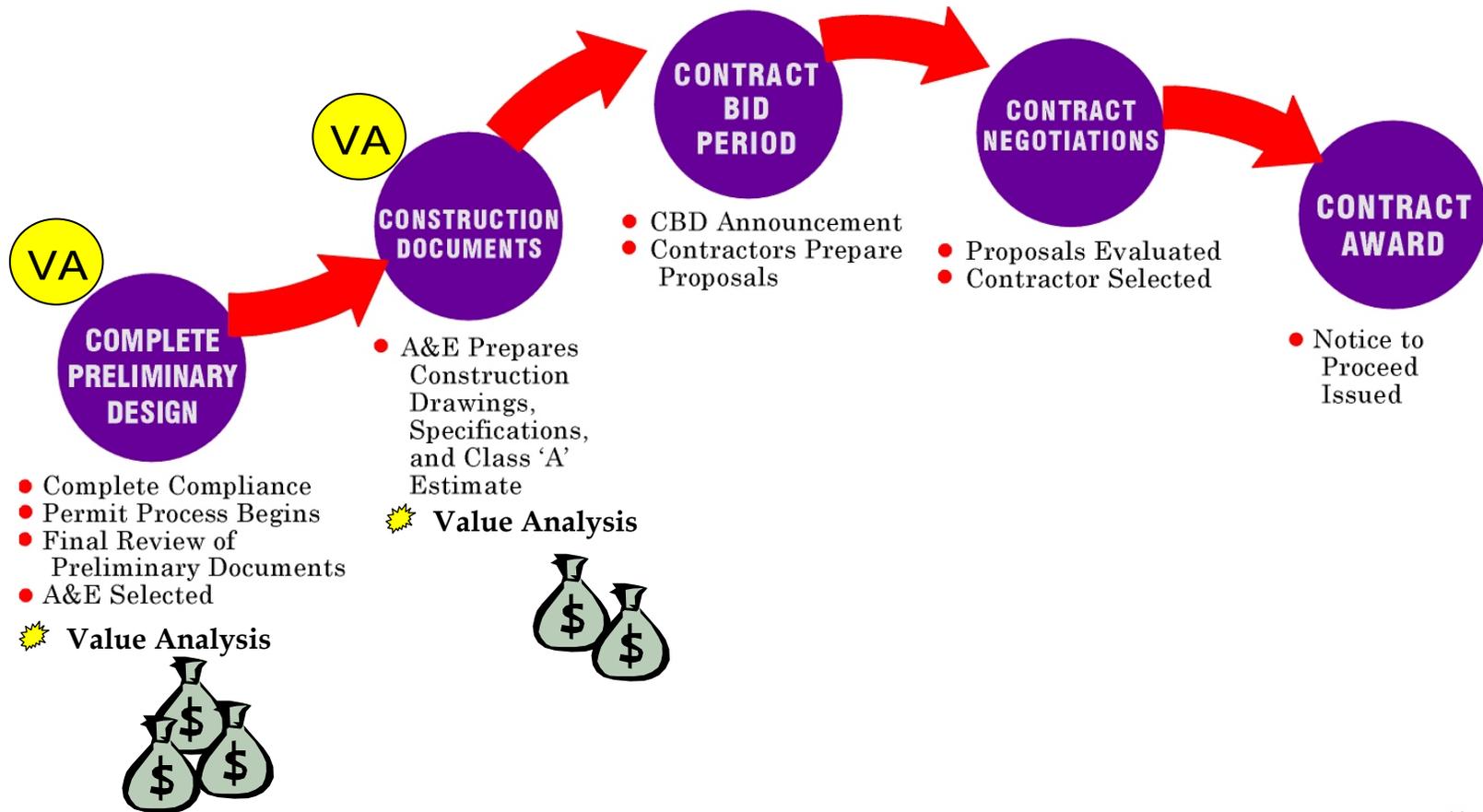
July 2000



# 3

# DESIGN

## DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO



July 2000



# 3

## DESIGN

DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO



### ■ DESIGN DEVELOPMENT

- Conduct mini-VA studies
- Study systems
- Study materials
- Class B+ estimate
- Good savings can be found





# 3

## DESIGN

DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO



### ■ CONSTRUCTION DOCUMENTS

- Improvements can still be made
- Class A estimates
- Costs of changes may exceed savings and should be included in the decision making



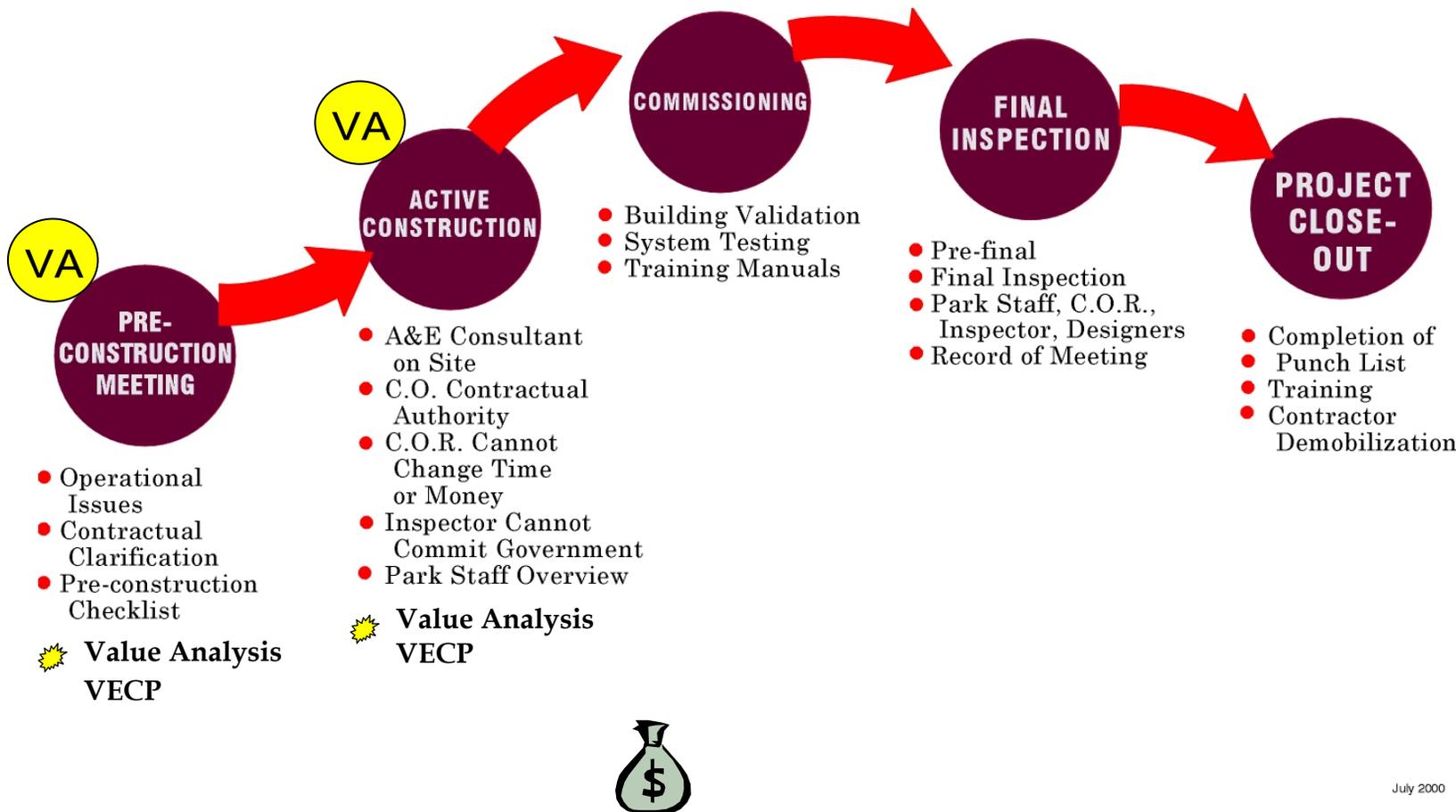
July 2000



# 4

# CONSTRUCTION

## DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO



July 2000



## 4

**CONSTRUCTION**

DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO

**VALUE ENGINEERING CHANGE PROPOSAL (VECP)**

- Submitted by contractor to COR
- Proposal to improve design/cut cost of construction
- Park and Design Review (AE or NPS) must review and evaluate if proposal is “equal” and provide rationale for action
- If accepted, contractor entitled to 55% of savings to government
- Director has a renewed interest in this program



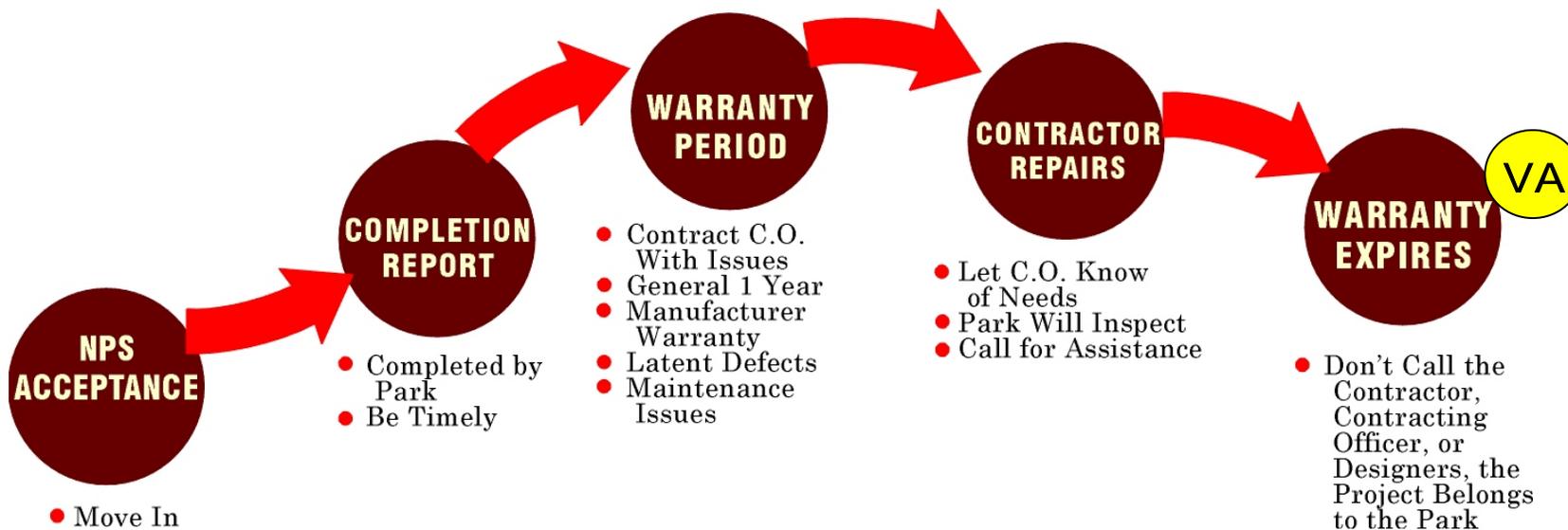
July 2000



# 5

# POST CONSTRUCTION

DIVISION OF CONSTRUCTION PROGRAM MANAGEMENT - WASO

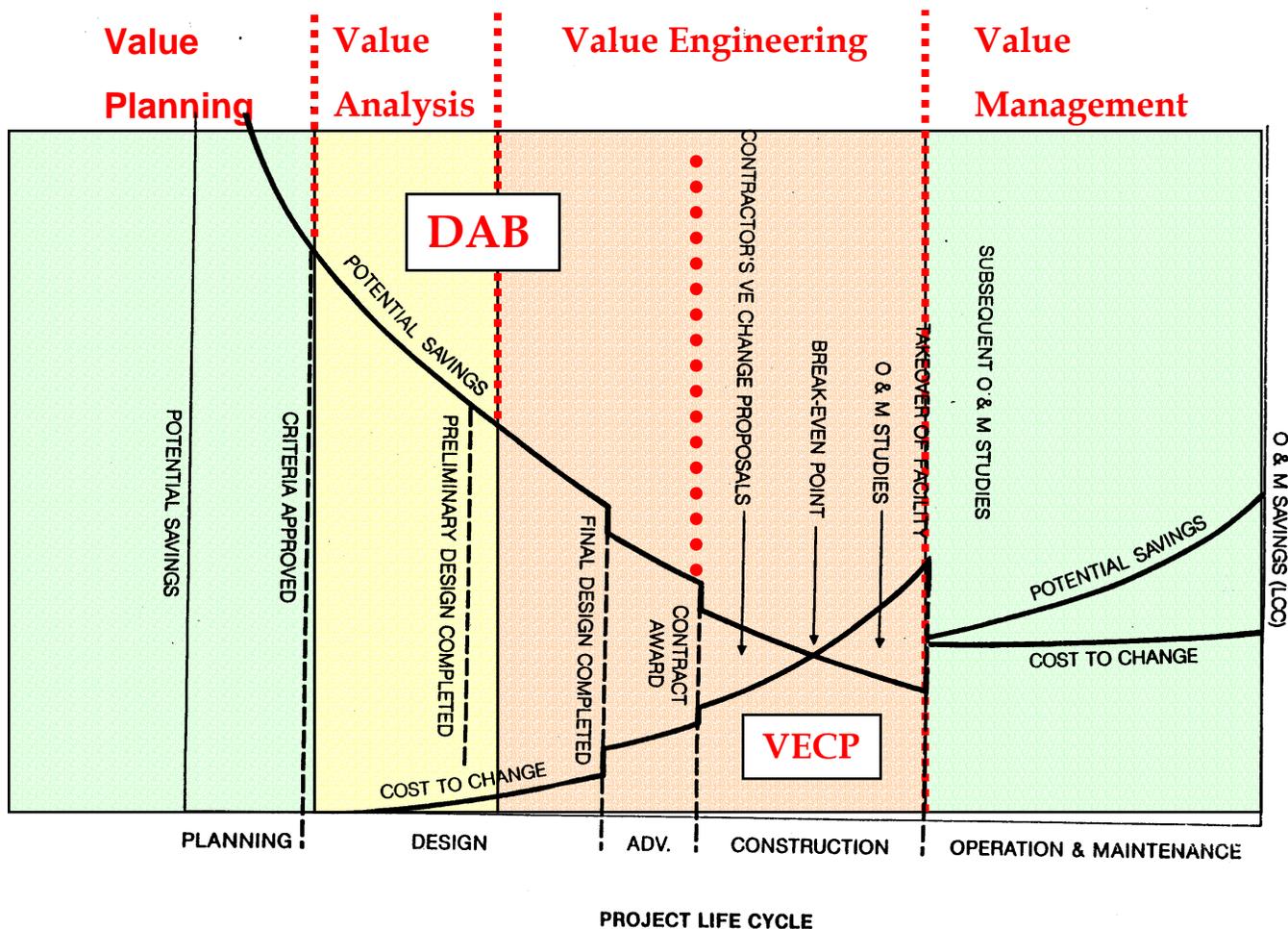


July 2000



# Value Analysis vs Value Engineering

(VE, VA, VM, or VP...)





# What does a good VA look like?

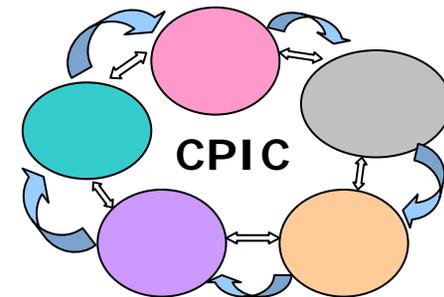
...a process guided by the Value Analysis Job Plan

- Information Phase
- Function Phase
- Creativity Phase
- Evaluation Phase
- Development Phase
- Recommendation Phase
- Implementation Phase



# Information Phase

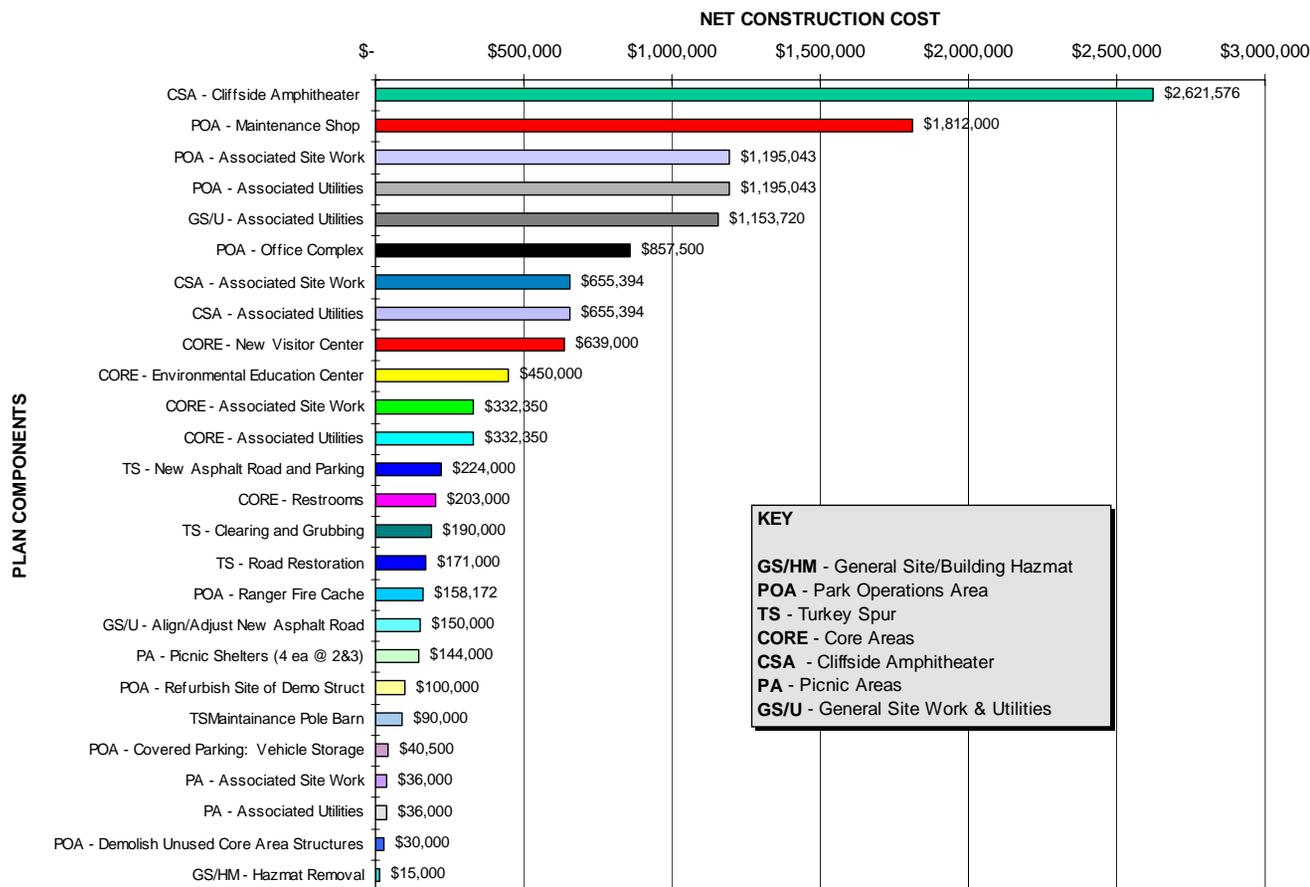
- Purpose and Significance of the Park
- NPS, Park and Project Objectives
- Constraints
- Modeling
  - Cost Models
  - Square Foot Models
  - Risk Models (CPIC and CAP)
  - Quality Models
  - Energy Models
  - Life Cycle Cost Model





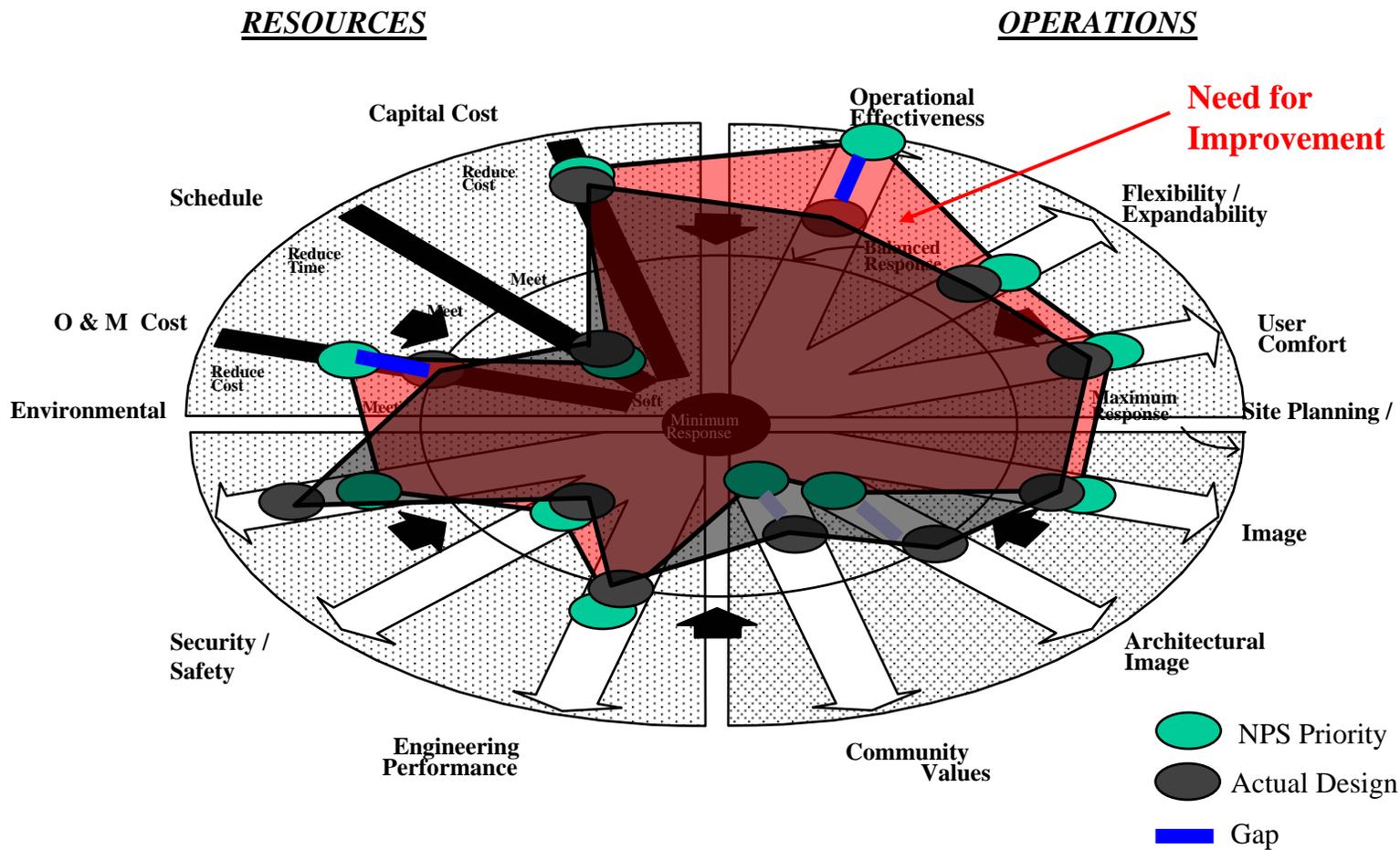
# Cost Model

PLAN COMPONENT COSTS - NEW RIVER GORGE NR DCP





# Quality Model



**TECHNOLOGY**

**IMAGE**



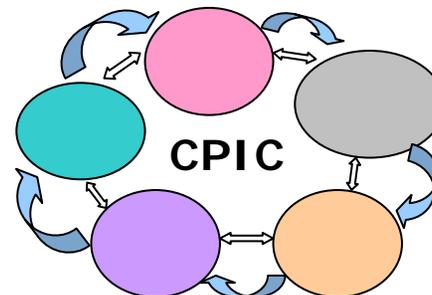
# Risk Model

Anypark NP

ELEMENTS	RISK AREAS	N/A	LOW	MEDIUM	HIGH
A. MANAGEMENT, FINANCIAL & ADMINISTRATIVE RISKS	1. Changing government regulations				
	2. Public and political perspectives (public watching project development)				
	3. Budget limitations, approvals process, & other constraints				
	4. Site acquisition - Adjacent site elements				
	5. Permitting delays				
	6. Agency jurisdictions and conflicts				
	7. Project mgt., organ., decision-making processes, info. flow				
	8. Labor issues				
	9. Other: Facility Management				
B. ENVIRONMENTAL, GEOTECHNICAL RISKS	1. Inclement weather, storms, floods				
	2. Hazardous waste disposals, site remediation				
	3. Environ. restrictions (air quality, noise, toxic mat., etc.)				
	4. Contaminated soils remediation				
	5. Groundwater remediation				
	6. Uncharted underground testing				
	7. Inadequate subgrade testing				
	8. Unanticipated archaeological or historical findings				
	9. Other: Condition of Previously Disturbed Permafrost				
C. TECHNICAL RISKS	1. Systems, processes, and material				
	2. New, unproven systems, processes and mat'ls (renewable/cutting edge)				
	3. Other: control of building to partially go cool				
D. IMPLEMENTATION RISKS I. Design	1. Design approvals and changes				
	2. Design errors and omissions				
	3. Untested and unproven design features and innovations				
	4. Insufficient design contingencies				
	5. Other: quality of aesthetics				
II. Contractor	1. Availability of qualified contractors or skills (competitive environment)				
	2. Construction material requirements (recycled content materials?)				
	3. Inadequate or unclear specs for mat'ls & workmanship				
	4. Labor negotiations/work stoppages				
	5. Operator training/certification				
	6. Management of subcontracts				
	7. Low construction contingency				
	8. Other: bidding climate for favorable pricing				
III. Change Orders	1. Design Changes				
	2. Field Changes, owner directed				
	Other:				
IV. Equipment/Material	1. Availability				
	2. Rejects, defects (items shipped)				
	3. Malfunctions or failures				
	4. Other: AV equipment, control systems				

Anypark NP

ELEMENTS	RISK AREAS	N/A	LOW	MEDIUM	HIGH
V. Project Controls	1. Planning: space program				
	2. Scheduling (coordination between contracts and other projects)				
	3. Estimating (SD, DD, CD)				
	4. Other: Public and stakeholder involvement				
VI. Logistics, Transportation	1. Material staging areas limitations				
	2. Traffic congestion at site or access to site				
	3. Transportation difficulties for construction mat'ls				
	4. Other: Seasonal Logistics				
VII. Interference and Maintenance of Services	1. Interference with other work				
	2. Maintenance of certain essential services during construction				
	3. Tie-ins/cutovers with utilities				
	4. Other: Tour Arctic and other operational uses temporarily displaced				
VIII. Condition of Existing (For renovation, rehab. repair projects)	1. Interim changes to Building (if applicable)				
	2. Condition of existing structure and material				
	3. Tie-ins				
	4. Removals or restoration				
	5. Temporary storage of existing materials, artifacts, etc.				
IX. Safety and Hazards During Construction	1. Safety to contractor personnel				
	2. Safety to owner and non-project personnel				
	3. Safety to public				
X. Process start-up and Commissioning	1. Testings and test planning and scheduling (commissioning)				
	2. Malfunctions and failures (telecommunications)				
	3. Inadequate documentation and/or training				
	4. Other: Maintaining period of facility commissioning before occupancy				



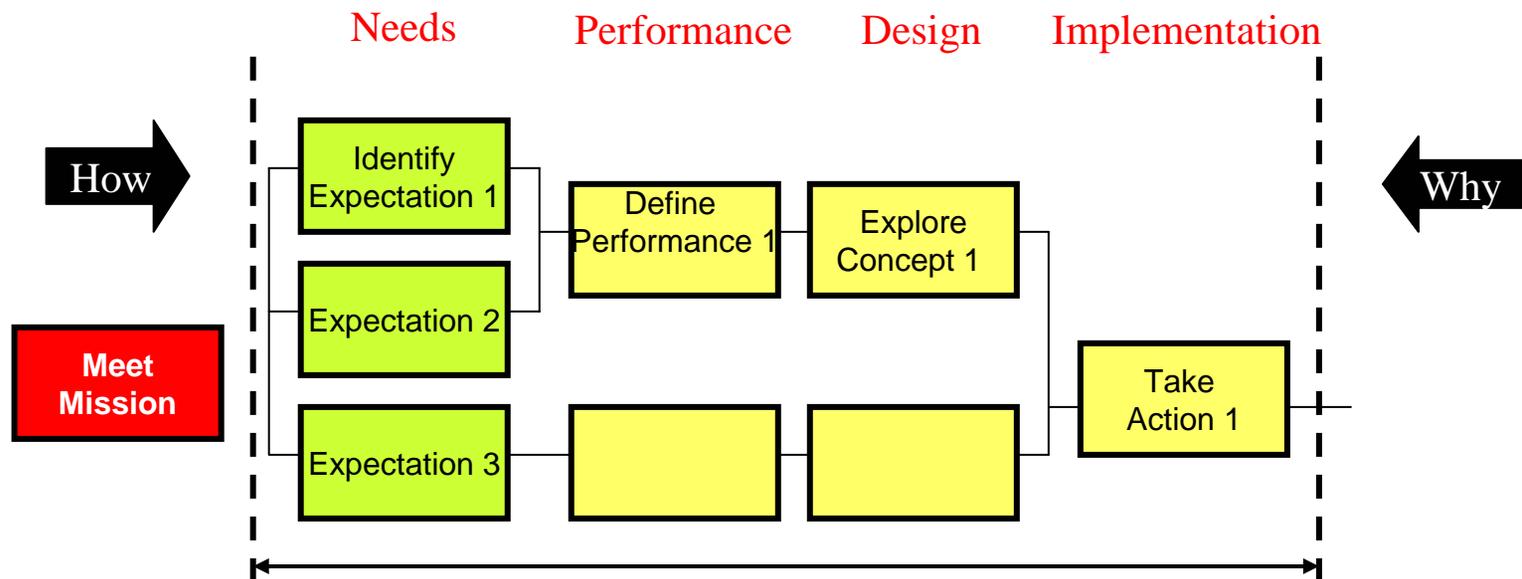


# Function Phase

## (Expectations)

### What do they really need?

- Why do they want it?
- How should it be done?

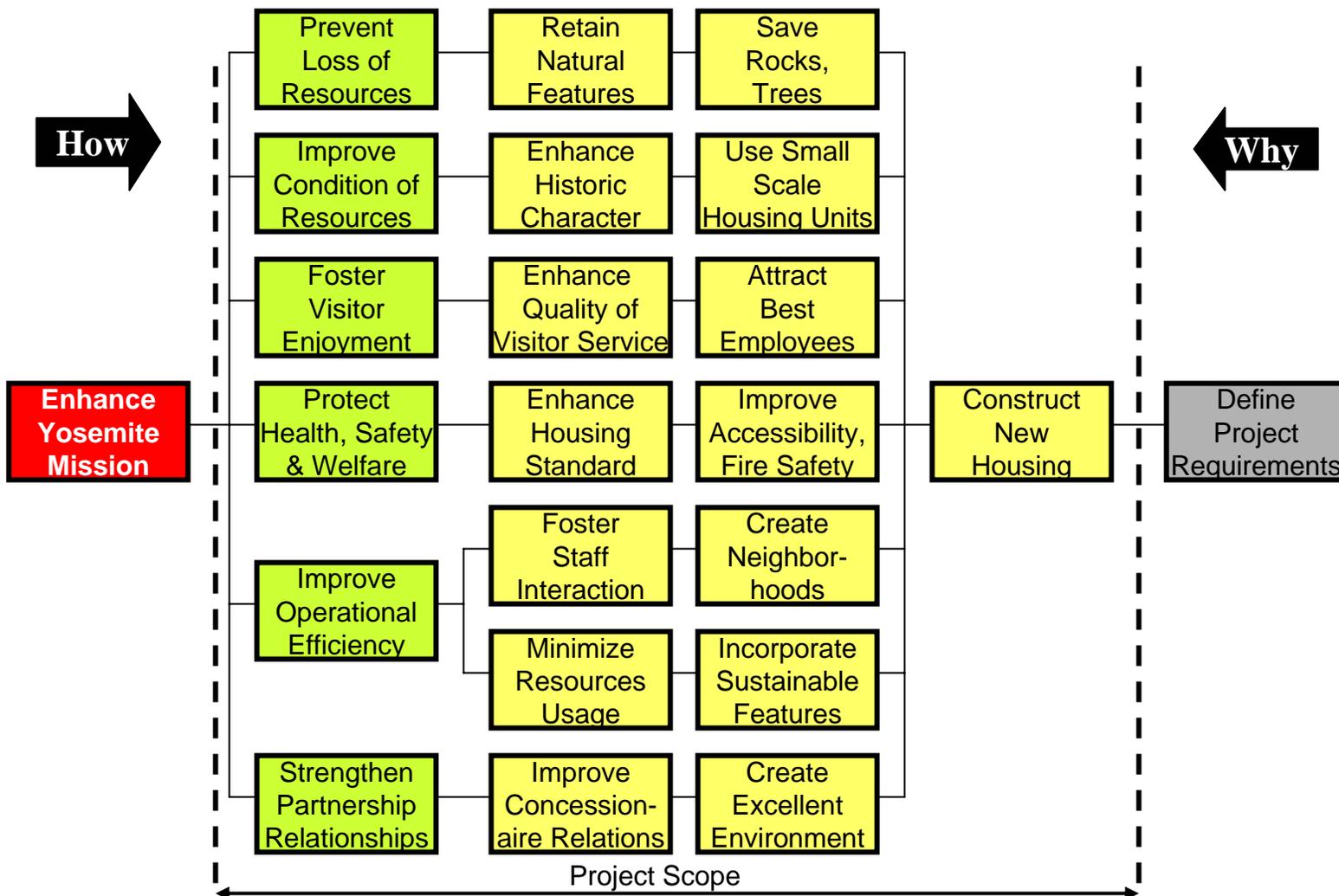


- TOOL: Function Logic Diagram or Function Analysis System Technique (FAST) Diagram, Verb Noun Pairs



# Function Logic Diagram

Yosemite Concessionaire Employee Housing





# Creativity Phase

- Don't constrain the team!!!!
- Test Assumptions
- Team **freely** brainstorms ideas. (Don't judge ideas yet – that's the next phase)
- Take a fresh look at **old ideas previously dismissed** (Full range, think out of the box)
- Study should contain a **wide range** and a **large number** of alternatives
- Study must **document** this information
- Meet functional requirements



Tools: Brainstorming, Use of models and FAST



# Alternatives

**90% and 75%** of net available funds

- Alternatives considered must be **viable** and **meet** the scope and address functional needs established in PMIS
- These must be **valid** alternatives that (you can't just chop off 25% of square feet if it won't meet the programmed needs)
- Design Team may enter the study with a series of alternatives....Team brainstorms other options and improvements.



# Evaluation Phase

- Quantify non-monetary advantage or benefit
  - How well does an alternative meet the functional requirements?
  - How do other alternatives compare?
  - How large a difference are you making? What areas are affected?
  - How important is that difference to the various Stakeholders?
  - What are the benefits to the NPS?
  
- Who has heard of CBA?

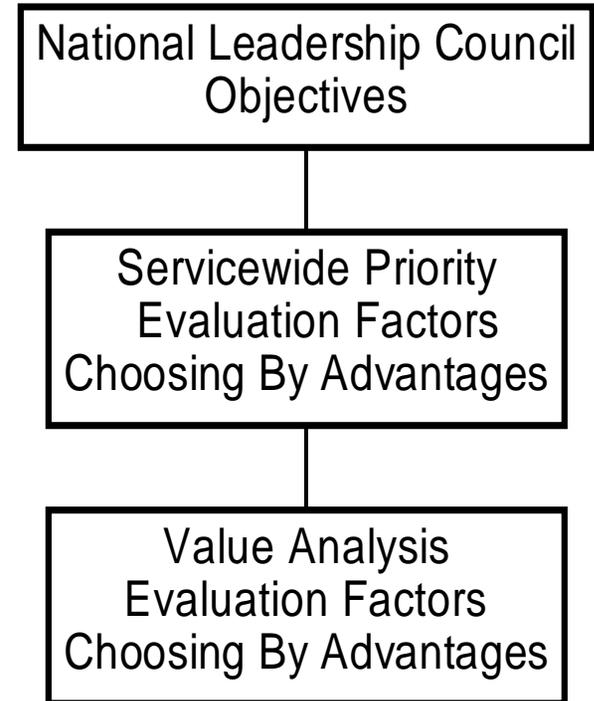
Tools: Factors, Choosing by Advantages, Weighted Factors,



# NPS Evaluation Factors

(FY 2003 Call)

- **Protect Public and Employee Health, Safety and Welfare**
- **Protect Natural and Cultural Resources**
- **Provide for Visitor Enjoyment through Improved Educational and Recreational Opportunities**
- **Improve Operational Efficiency, Reliability and Sustainability**
- **Provide Other Advantages to the National Park System**

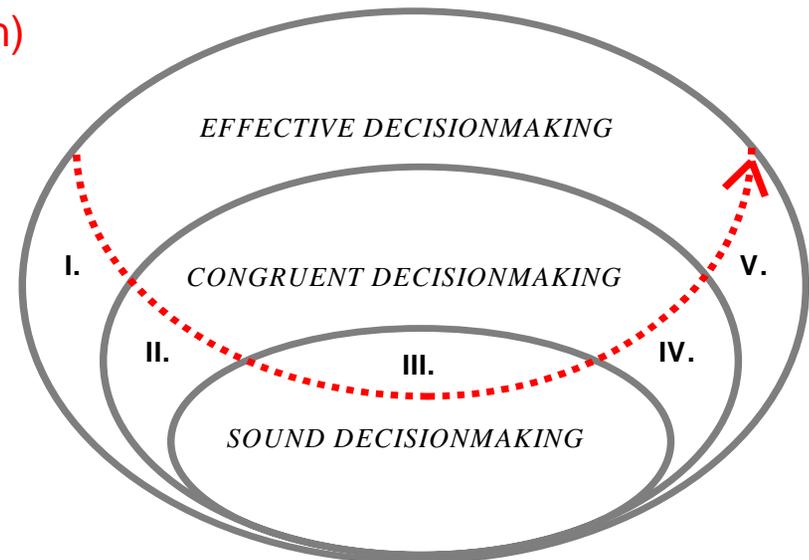




# Choosing By Advantages

VA? CBA? What's the difference?

- **CBA measures non-monetary benefit!!!**
- Process parallel to VA Job Plan:
  - I. Stage Setting (*Information & Function*)
  - II. Innovation (*Creativity*)
  - III. Decision Making (*Evaluation*)
  - IV. Reconsideration (*Recommendation*)
  - V. Implementation (*Implementation*)





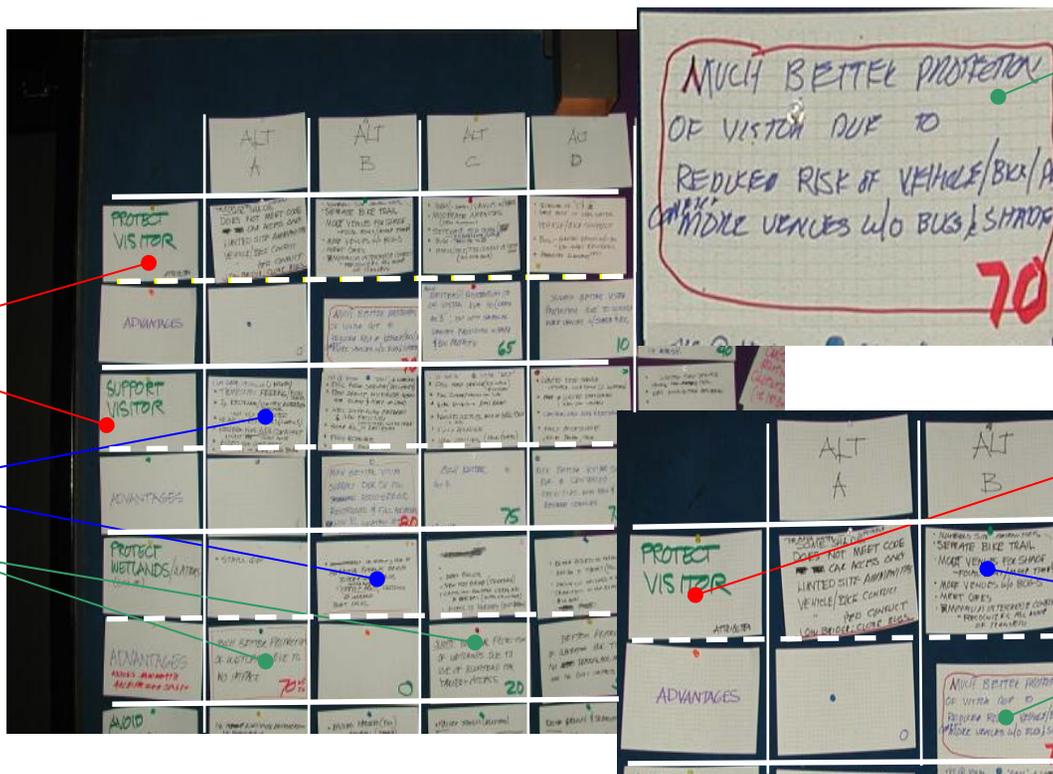
# In many cases it will look like this....





# CBA DEFINITIONS.....

- **Factor**
- **Attribute**
- **Advantage**



■ **Advantage**

- **Factor**
- **Criterion**
- **Attribute**
- **Advantage**



## A **FACTOR** is . . .

- An **element**, or a component, of a decision
- A **container** for three kinds of data
  - Criteria
  - Attributes
  - Advantages
- An area where there is **a difference**, an advantage, between two alternatives



## A **CRITERION** is . . .

- A **decision-rule**, or a **guideline**. (Some guidelines are “musts;” others are “wants.”)
- Any standard on which a judgment is based
- Any decision that guides further decisionmaking

**“A ‘must’ criterion is an absolute decision rule --  
Be careful not to rule out the BEST  
alternative.”**



## An **ATTRIBUTE** is . . .

- A characteristic or consequence of **ONE** alternative

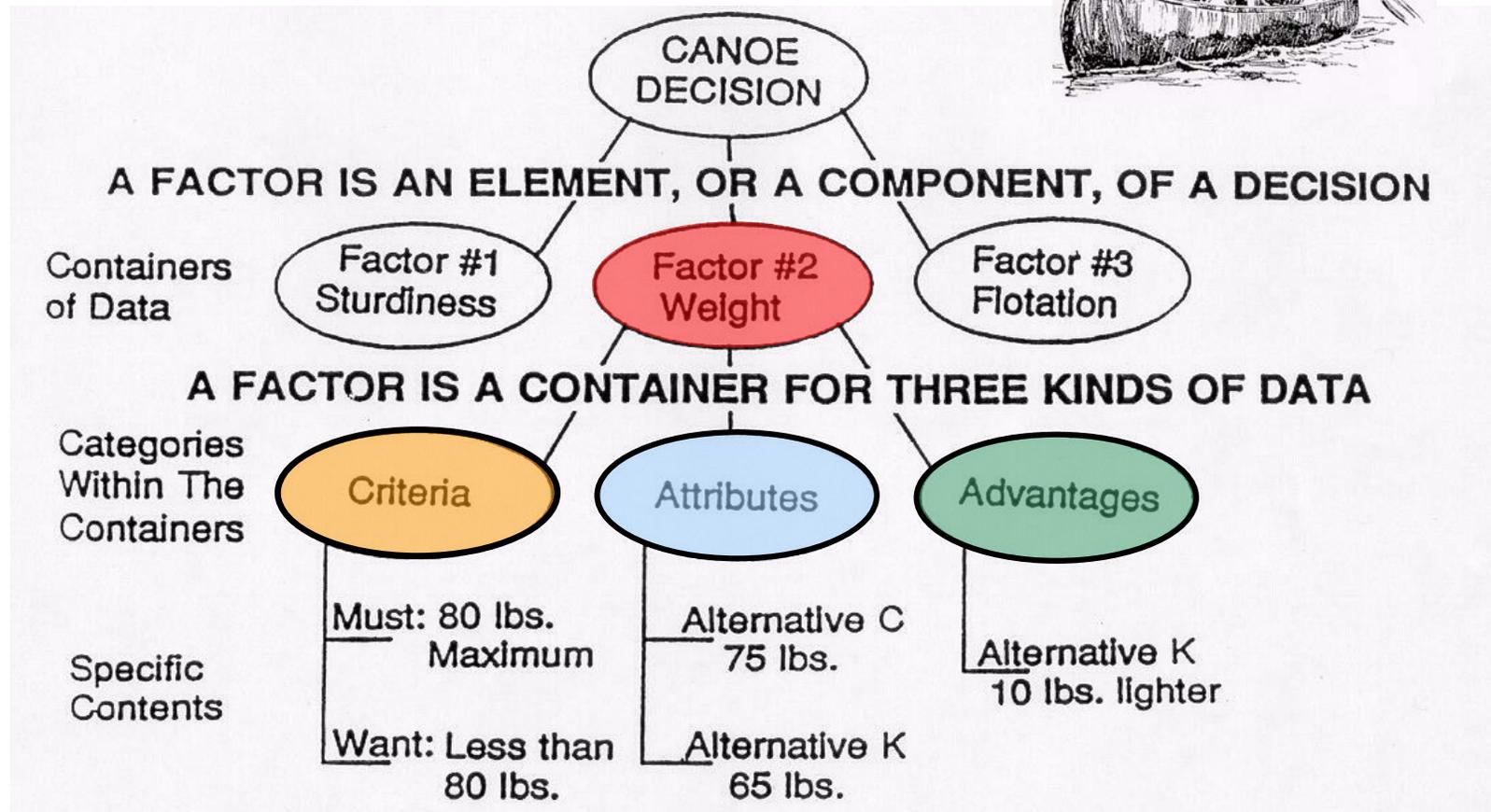


## An **ADVANTAGE** is . . .

- A **favorable difference** between the attributes of **TWO** alternatives.

**“ Without exception, a Disadvantage of one alternative is an Advantage of another. ”**

# Definitions (an example)





# Fundamental Rule of Sound Decisionmaking

**Decisions must be based  
on the  
Importance of  
Advantages**



# Development Phase

- Develop Alternatives
- Test technical viability
- Establish Cost
  - Initial
  - Life Cycle

Tools: LCC Templates, Present Worth



# Life Cycle Cost is....

“Life cycle costing is the development of all **significant cost** of ownership of an item, system, or facility, over a **specified length of time**”

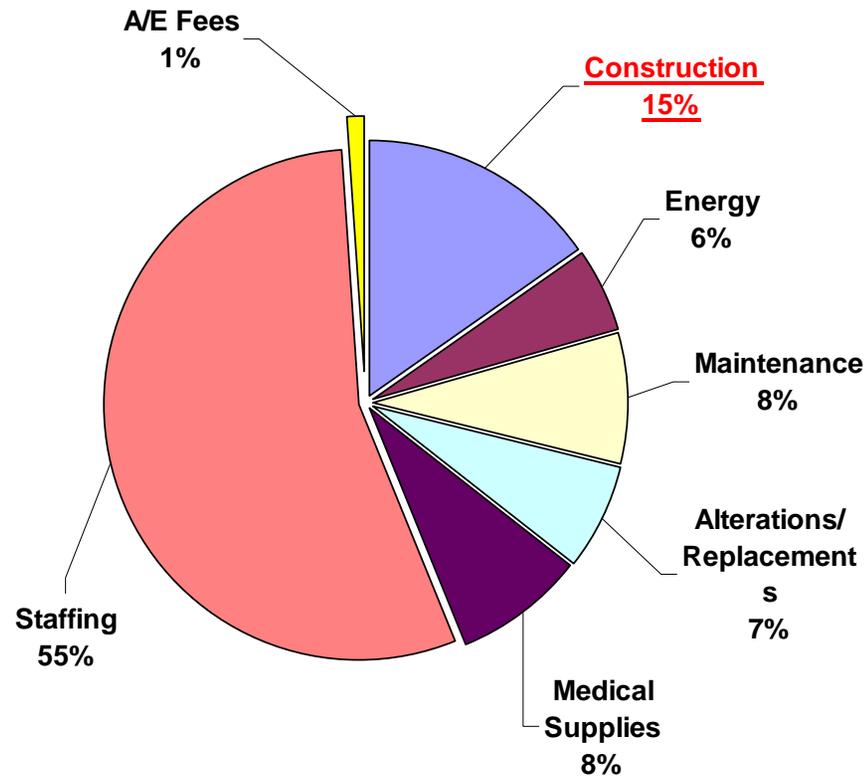
SHG Inc, Mod I Course



# Facility Operating Costs

## Hospital Life Cycle Costs

(\$ PW/GSF)  
(25 years, 10% discount rate)





# Types of LCC Cost

## ▪ Initial Cost

- Cost associated with initial development of a facility, including project costs as well as construction costs.

## ▪ Recurring/Cyclic Costs

- Costs that recur on a periodic basis throughout the life of a project.

## ▪ Annual Cost

- Operations
- Maintenance
- Staffing
- Energy

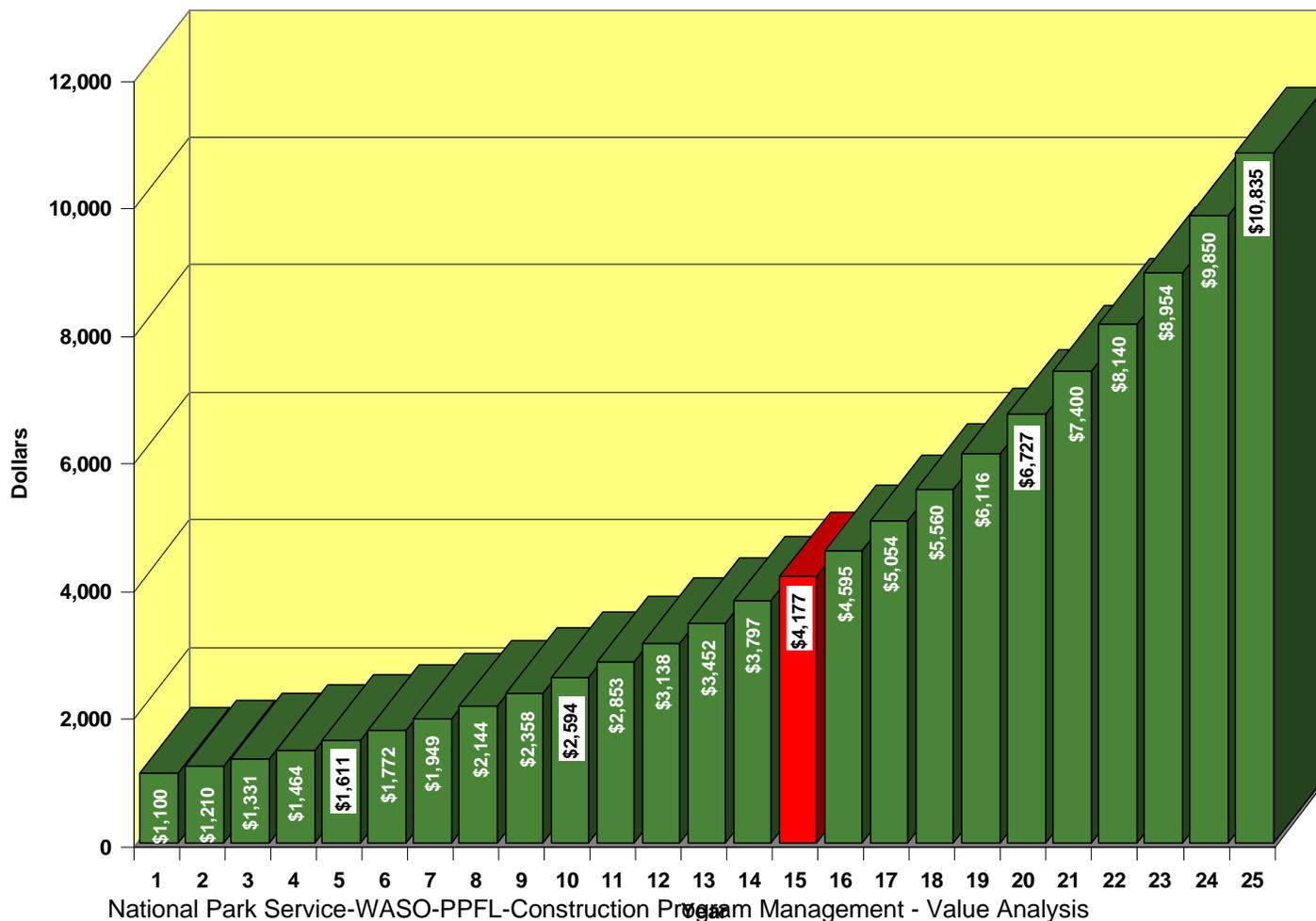


# Present Worth

(Comparative Decision-making not budgeting)

## COMPOUNDING INTEREST

Discount Rate 10%    \$1000 Invested

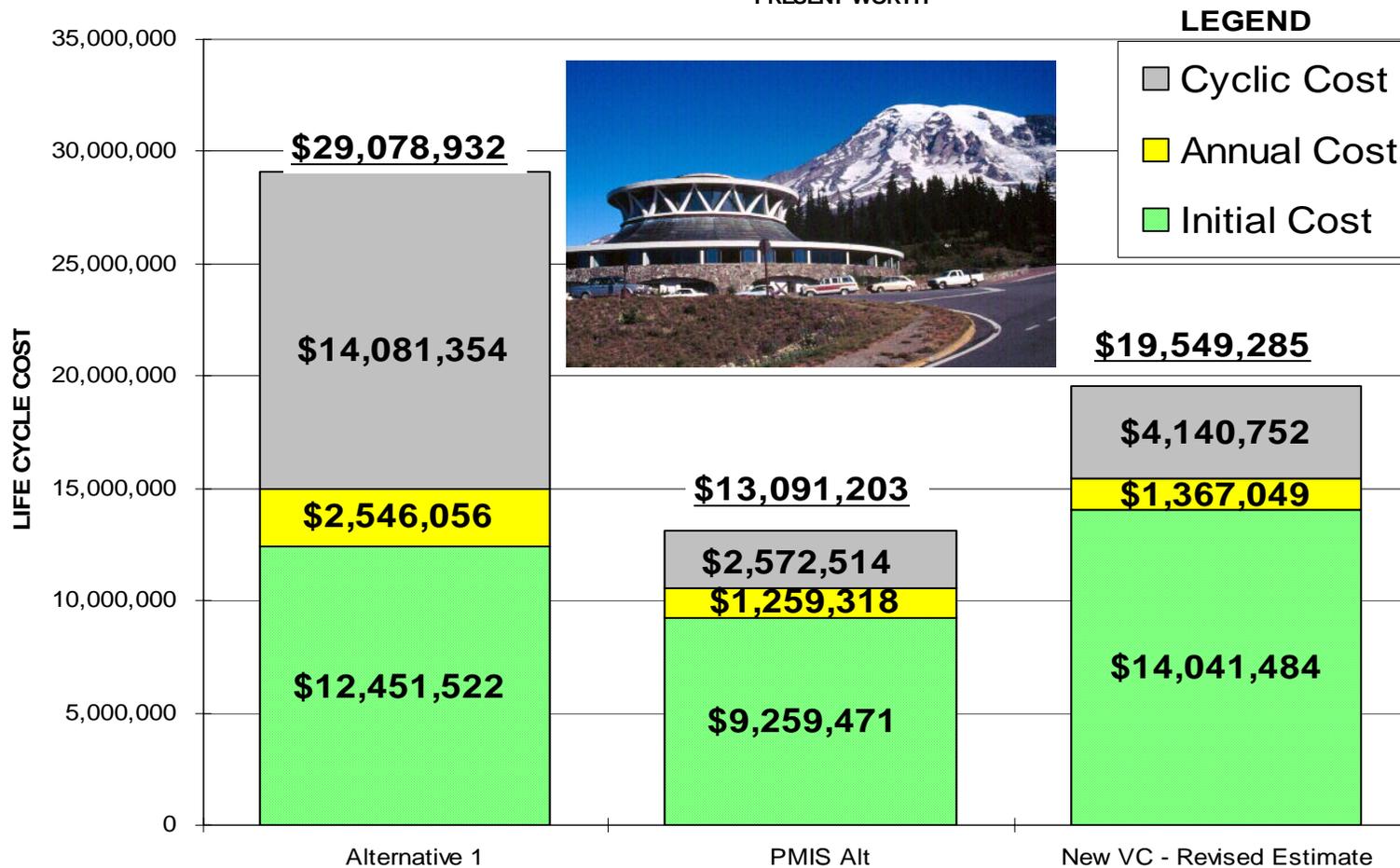




# Life Cycle Cost

## Jackson Visitor Center

### LIFE CYCLE COST ANALYSIS PRESENT WORTH





# Recommendation Phase

- Prepare “Relative Cost” comparisons
- Importance to Cost Ratios
- Benefit to Cost Trade-offs
- Analyze and respond to the differences in **benefits and costs** for each alternative considered
- Document rationale



# Money Decisions Use Special Methods

- In many cases, money decisions are more complex than non-money decisions
- **Money is an official message that serves as a medium of exchange**
  - “A dollar” is not “a dollar.”
  - A dollar, itself, has no value.



# Money Decisions Require Special Methods

- Money must be included as a **special factor**, not a regular factor.
- Any judgments about the importance of so-called “money advantages” would be **unanchored judgments**.



# Money Decisions Require Special Methods

- **The Principle of Interdependency:** A dollar spent for one purchase is not available for another
- **Wellington's Rule:** “No increase of expenditure over the unavoidable minimum is expedient or justifiable, however great the probable profits and value of the enterprise as a whole, unless the INCREASE can with reasonable certainty be counted on to be, in itself, a profitable investment.”



# Recommendation Phase

- Evaluate benefits and costs together
- Select/Identify the alternative which best meets the function at the least cost
- **RECONSIDERATION**
- **Create and Refine Preferred Alternative**
  - Continued evaluation of benefits and costs
  - Include elements of other alternatives
  - Make sure VA team understood purpose and constraints
  - Make sure VA meets requirements



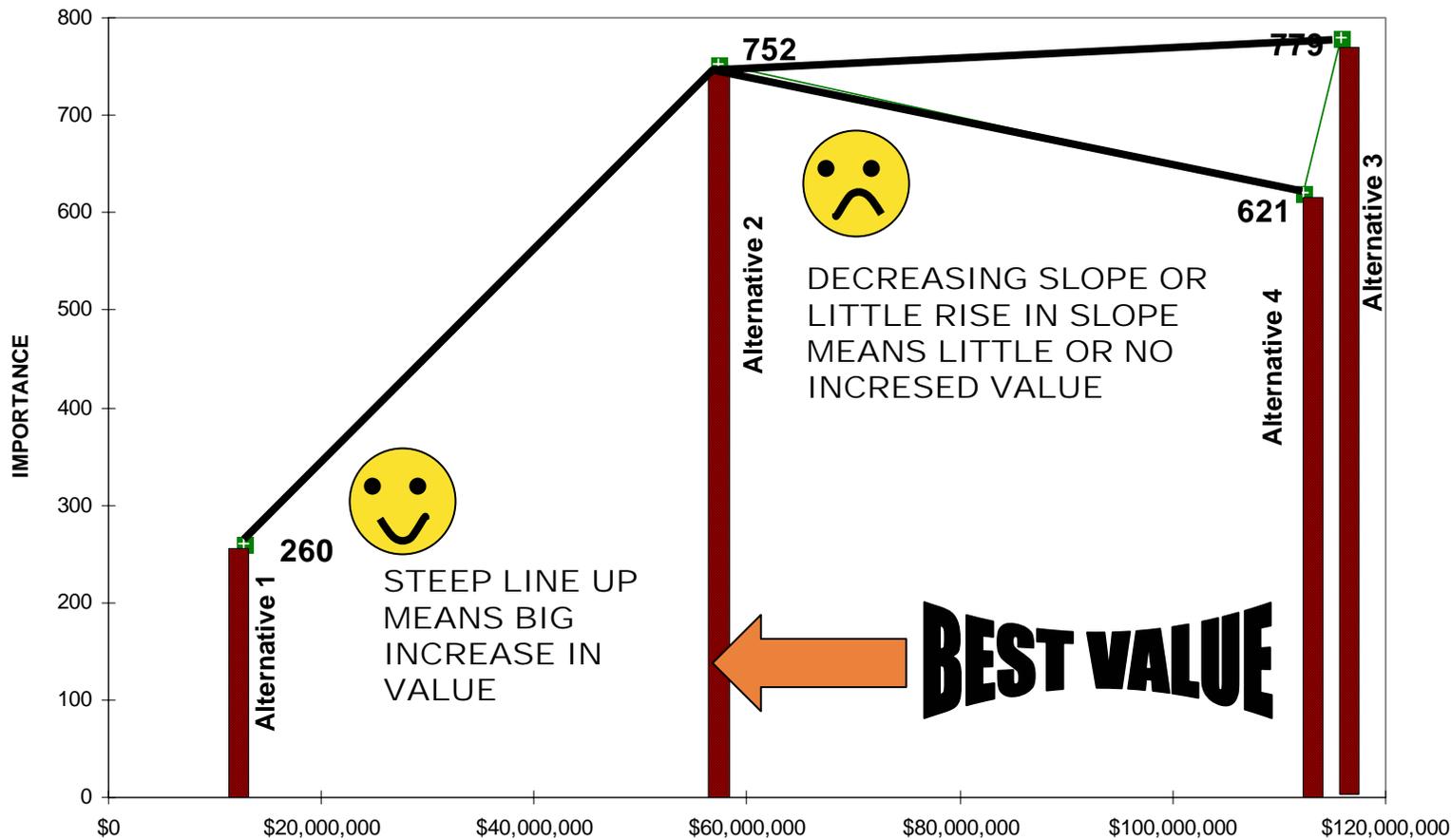
# Money Decisions Require Special Methods

- An **increment** is increase in cost, coupled with an increase, a decrease, or no change in total importance of advantages, or benefits.



# Importance to Cost Graph

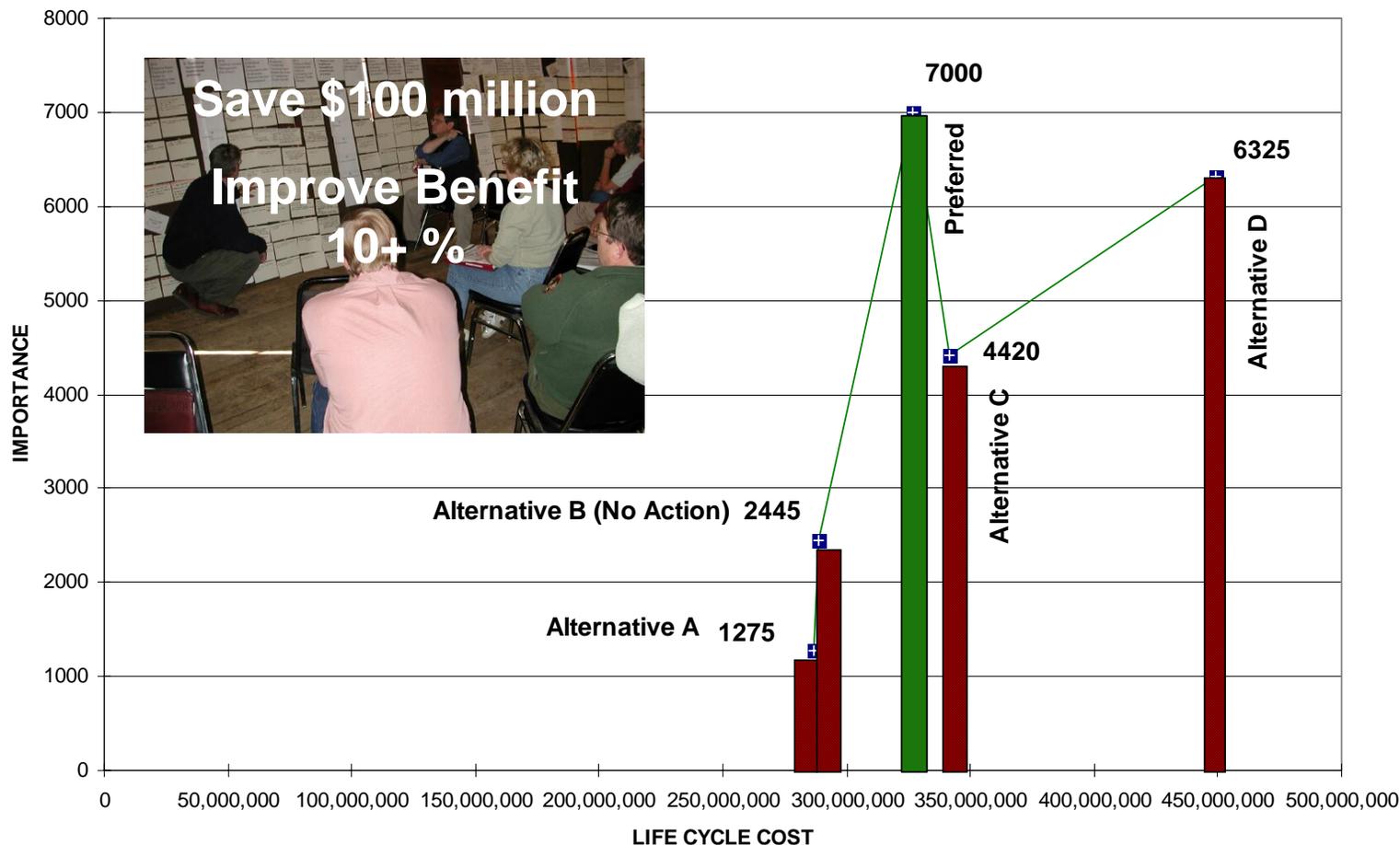
IMPORTANCE TO COST



# Sequoia NP - GMP

## Crafting a Preferred Alternative

### SEQUOIA NP - GENERAL MANAGEMENT PLAN





# Implementation Phase

- Thoroughly review the team value analysis study and recommendations
  - Be sure it contains all of the steps above
  - **You can accept, study further, or reject proposals**
    - Any substantial part of VA study not accepted must be justified and have supporting statement from Regional Director
- Documentation:
  - Record the **results, process, and rationale**
- Revise and develop Preferred Alternative
- Prepare Class “B” estimate incorporating implemented VA proposals



# A good VA will allow you to see all the steps of the VA Job Plan!!!

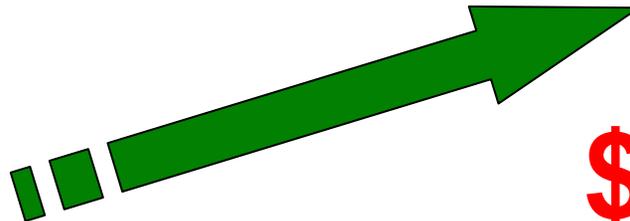
- Information Phase
- Function Phase
- Creativity Phase
- Evaluation Phase
- Development Phase
- Recommendation Phase
- Implementation Phase



# What type and size VA?

**Tailor the VA to the scope and scale of the project**

**\$500K  
Project**



**\$6M**

**Project**





# Three types of Value Analysis...

- **1. Integrated Value-Based Decision**
  - Part of the Design Process
    - Concept proposed by Federal Facilities Council
    - Pre-design, Design VA maybe required
  - VA Job Plan Followed
  - Value Methods at key decision points
    - Life Cycle Costs, Choosing by Advantages
  - Range of Alternatives (Responsibility)
    - Creativity Phase tests range w/ Independent Perspective



# Three types of Value Analysis...

## ■ 2. Project Validation

- Preferred Concept Identified
- Classic VA - Second Opinion
- VA Job Plan Followed
- Creativity Phase
  - Complete Alternatives
  - VA Proposal to improve design or reduce cost
- Higher Team Independence - Testing



# Three types of Value Analysis...

- **3. Select Preferred Alternative**
  - Team develops alternatives
  - CBA evaluates alternatives
  - Team crafts a preferred alternative using components of various alternatives
  - Rescore Preferred



# What scale of study should I use, and what will it cost?

## ■ Traditional VA study

- Planning, Pre-design or Design
- Larger Project or Complex Decision
- 3 – 5 days
- 5 – 7 member team
- Average study cost \$25,000
- Cost range \$10,000 – \$70,000
- A/E study (fully independent) \$30,000 – 50,000
- May include project decision making



# What scale of study should I use, and what will it cost?

## ■ **Mini VA study**

- Pre-design, Design Development, Design
- Smaller projects or less complex decision
- Specific project components
- Small group or even an individual
- Second opinion
- 2 hours to ½ day to a Day
- Multiple studies may be required
- Cost range \$1,000 - \$10,000



# What scale of study should I use, and what will it cost?

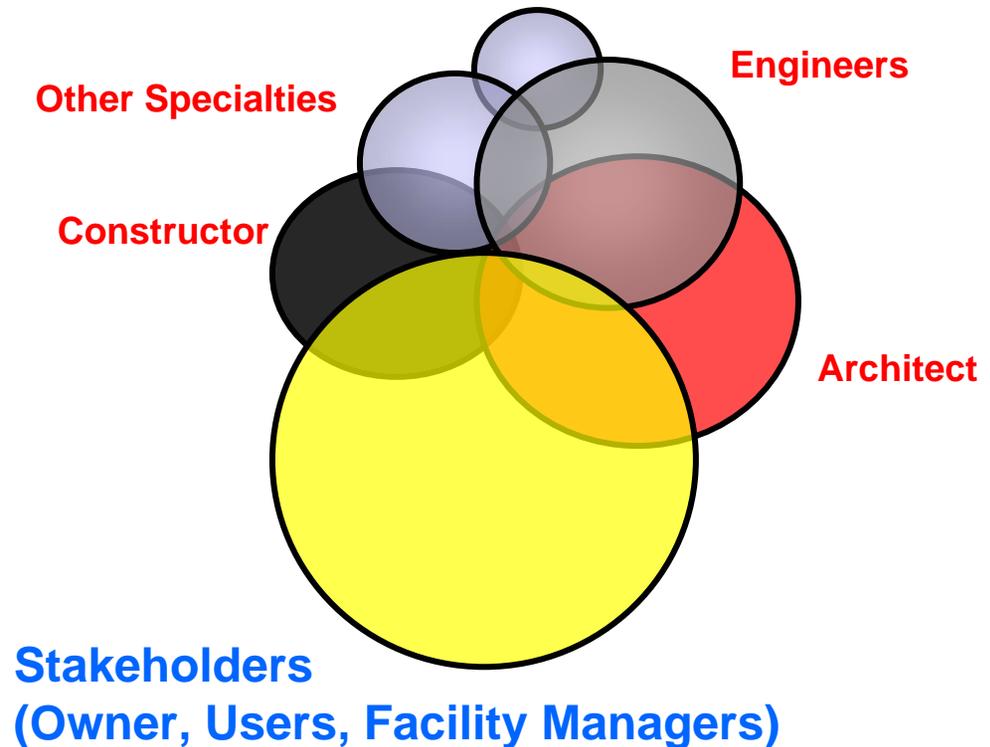
- **Value-based Decision Inventory (this may work when you screw-up!!!)**
  - Don't try it on a large project!!!
  - What value-based decisions have you made?
  - Cost Model - Have those decisions addressed the high cost centers from the model?
  - Mini-VA on any high cost centers not studied
  - Cost range \$1,000 - \$5,000 w/ a lot of begging



# Who should be on the VA/Decision Team?

- Who is on the decision team?
- What skills, knowledge, expertise are needed?
- When do we need them?
- Independence?

**Independent Perspective!!!!**





# What is the right team?

The most critical decision!!!

- Qualified Facilitator
  - Certified Value Specialist or equal
- Independent perspective – **MUST HAVE**
- Technical expertise - Sustainability
- Stakeholders
- Open, unbiased people familiar with project
- People who work well in a group and charette process



# Where can I find team members?

- Park staff (representing park values)
- Designers previously involved (A/E or NPS)
- Designers who will be involved (A/E or NPS)
- A/E expertise
  - Design
  - Cost estimating
  - Constructability
- Concessionaires
- Partners
- State Historic Preservation Offices



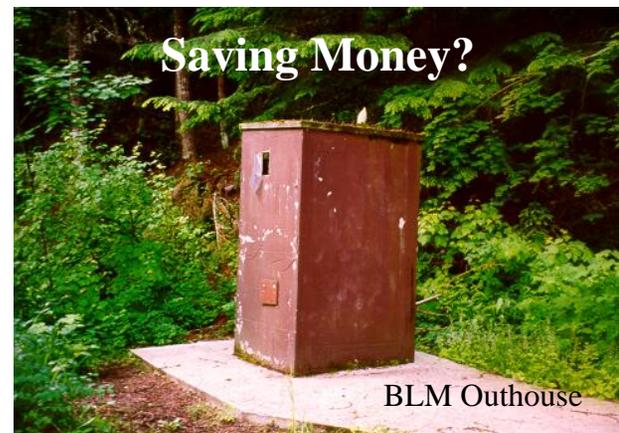
# Where can I find team members?

- Community representatives
- Cooperating associations
- Staff from other parks
- Regions/support offices
- Denver Service Center
- **Sister Agencies** e.g. Bureau of Reclamation, Bureau of Land Management, Forest Service, Department of Energy, National Renewable Energy Lab, GSA, etc..



# WHY DO A VALUE ANALYSIS?

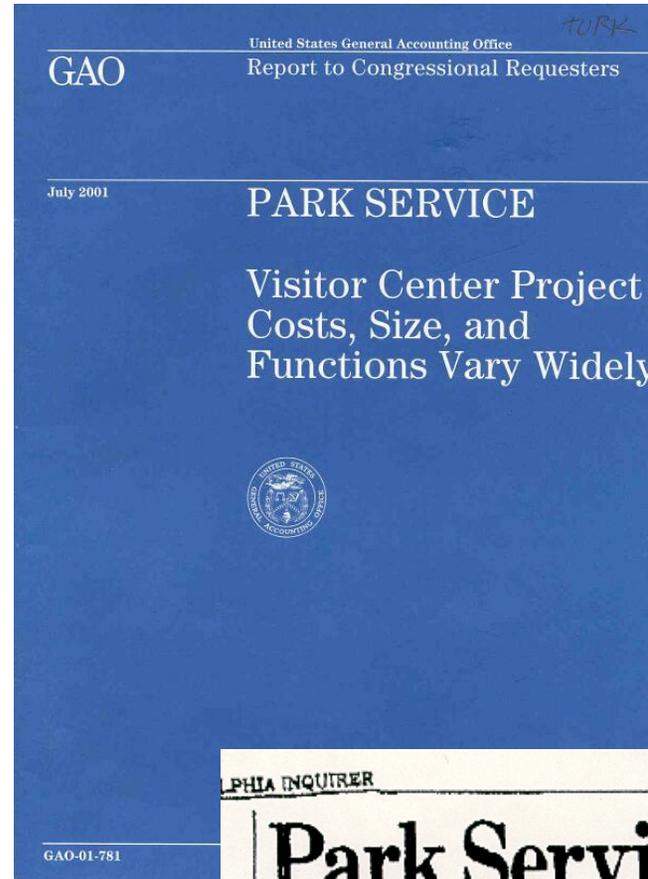
## *Better Projects*





# Congressional Perceptions.....

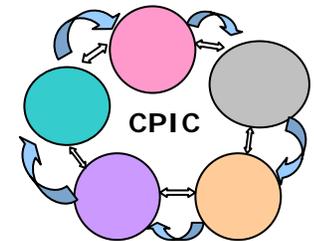
- “The Committee is upset that GMP’s are still **unrealistic**, despite it previous admonitions, when it comes to the size of facilities and development that is recommended”
- “Several recent proposals recommend visitor type facilities that were totally **unacceptable and unrealistic**”
- The Washita multi-use facility in planning is **too large**. Construction should cost **no more than \$4 million gross** including exhibits, office, public and maintenance space and everything else.





## *You have to.....*

- *It is not new!! Require since 1988 w/ NPS in 1991*
- *We told Congress we would!! DOI Task Force 1995 - Cost/benefit assessments*
- *We told DOI we would!!! National Leadership Council emphasized cost-effective and environmentally responsible projects to implement DOI task force recommendations*
- *DOI told us we had to!!! Capital Planning and Investment Control (CPIC) requires risk analysis and value analysis.*
- *Congress told us we had to!! 1996 Public Law 104-106 Requires VA*
- ***No D.A.B. approval without a VA!!!***

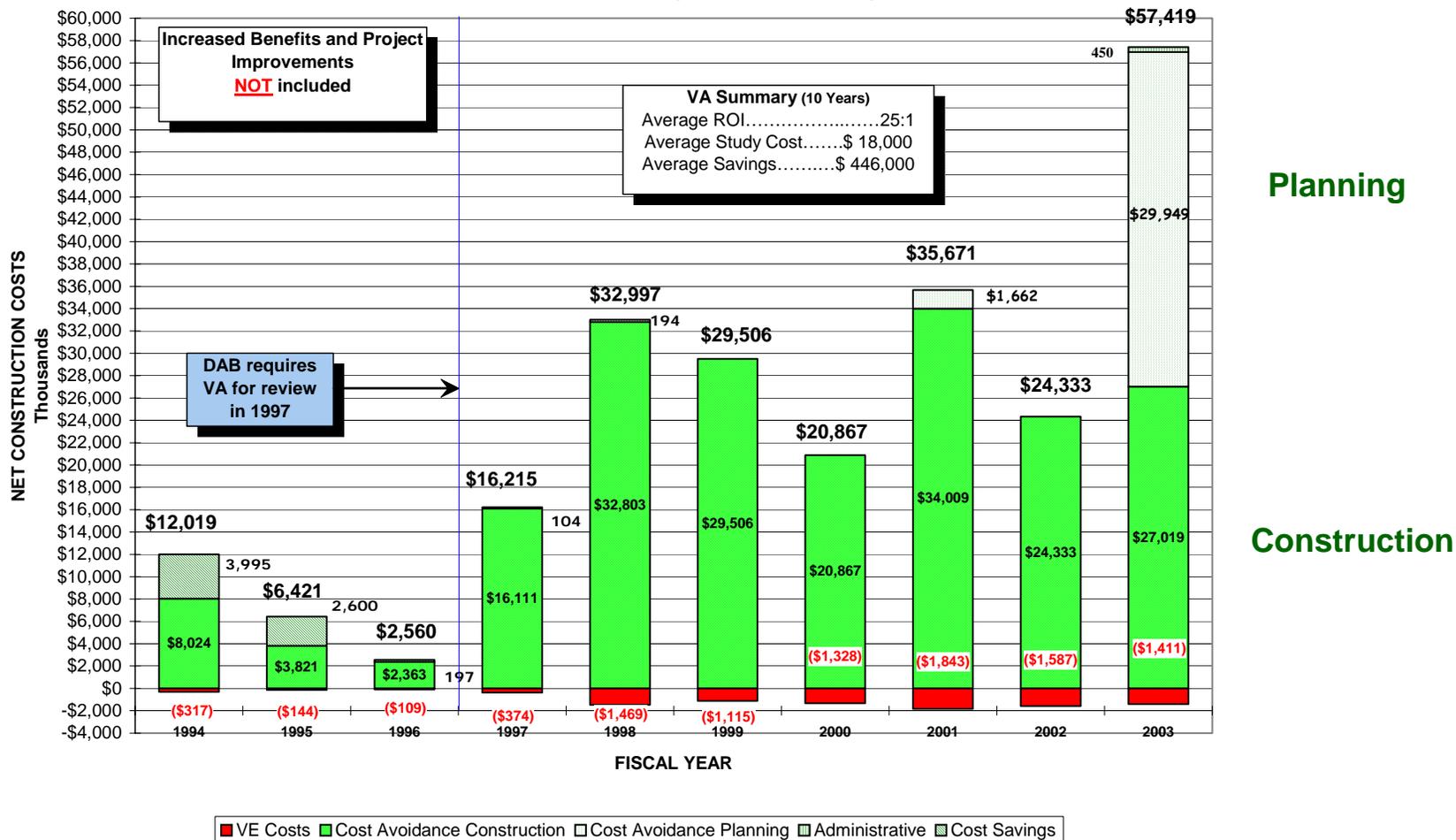




# Why VA?

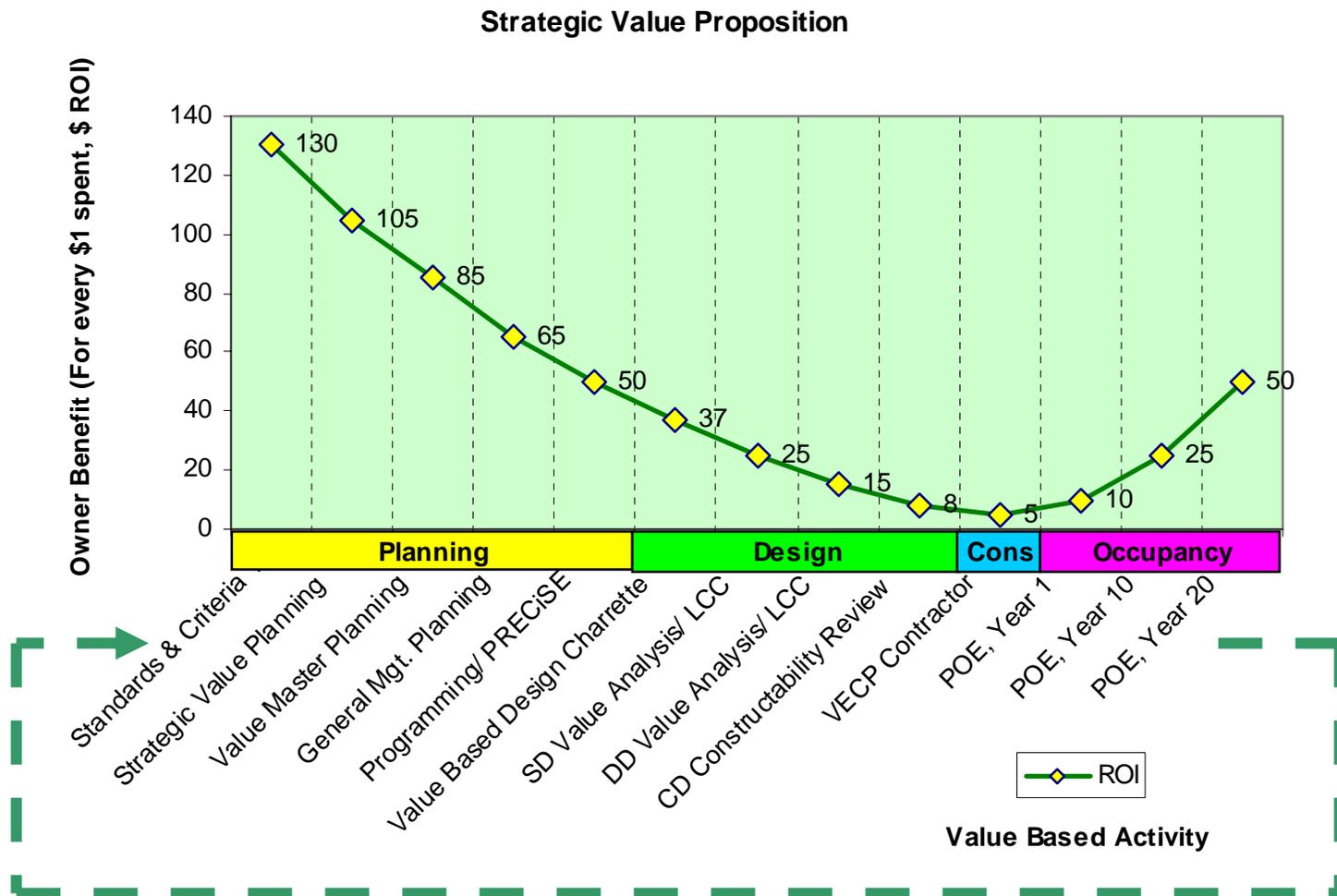
Look at the record!!!

## VALUE ANALYSIS PROGRAM COSTS AND SAVINGS Last Ten Years (FY 1994 -2003)





# Return on Investment

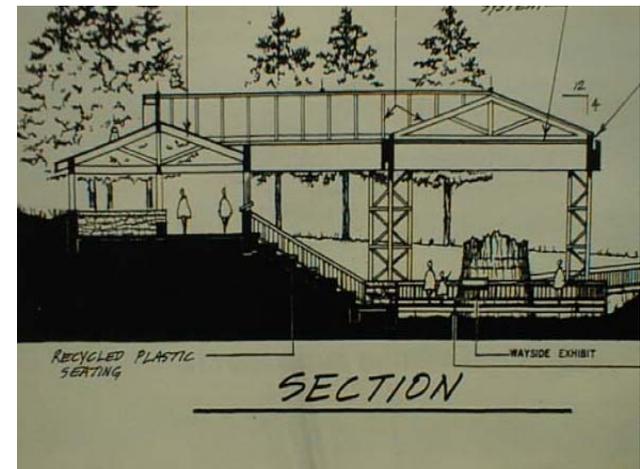




# Better Projects!!!!

## Florissant Fossil Beds Stump Shelters

- Changed from glass roof to metal deck of structures
- Improved resource protection
- Improved visitor experience
- Better fit with architectural theme
- Revised project 87% available funds





# Better Projects!!

## The Civil War Visitor Center, Richmond NBF at Tredegar Ironworks

- Build Team Relations
- Provide Independent Review of A/E proposals
- Improved protection and display of artifacts
- No cost reduction, Improved benefits
- 2001 John Wesley Powell Prize of the Society for History in the Federal Government

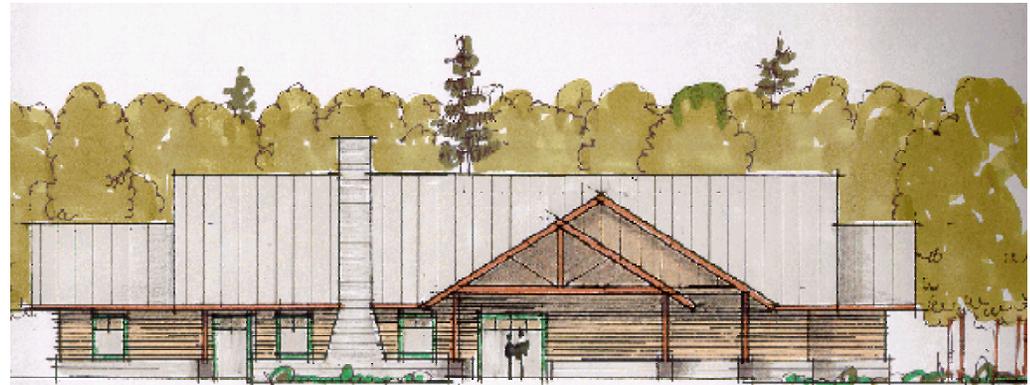




# Better Projects!!!!

## Wrangell-St. Elias Visitor Center

- Changed from one large structure to village concept
- Better scale and visitor experience
- Improved maintainability and sustainability
- More flexibility and adaptability
- Funded one year early
- Saved \$1.8 million



# National Park Service



EXPERIENCE  
YOUR  
AMERICA

**“ Our job is not to change anyone's minds. Our job is to make the agony of decision making so intense that you can only escape by thinking!!!! “**



Fred Friendly, CBS News  
<http://www.pbs.org/fredfriendly/epidemic/program/pages/fredFriendly.html>

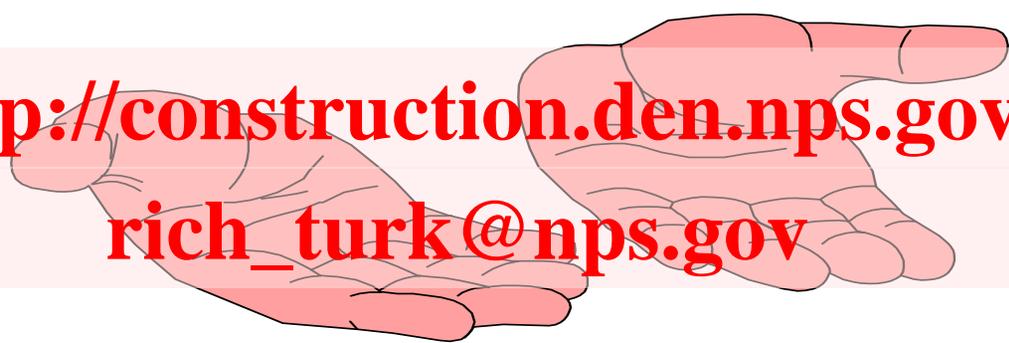
# THANK YOU!!!



# Where can I get help?

**Rich Turk (303) 969-2470**

Construction Management Program  
WASO Professional Services



**<http://construction.den.nps.gov>  
[rich\\_turk@nps.gov](mailto:rich_turk@nps.gov)**

ADVICE, TRAINING, POLICY DIRECTION  
FIND TEAM MEMBERS, FACILITATORS  
REVIEW

TEMPLATES FOR VA REPORTS