USDA FOREST SERVICE

VALUE ANALYSIS

STUDY WORKBOOK

Lava Lands Visitor Center V.A.

Study Name

Deschutes Naional Forest

Organizational Unit

Mon. Jan. 23 2006 through Fri. Jan. 27, 2006

Dates of Study

Value Analysis

Study Workbook

Table of Contents

VALUE ANALYSIS...

An Organized Method for Evaluating
an item, 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.

CREATIVITY AND SPECULATION

Brainstorming and developing alternative ways to meet the primary function(s).

EVALUATION

Identifying and choosing the best alternatives.

DEVELOPMENT

Forming complete descriptions of the best alternatives.

PRESENTATION

Presenting findings, alternatives, and recommendations to management.

A VALUE ANALYSIS
OF

Lava Lands Visitor Center
Study Title

Deschutes National Forest – Region 6
Organizational Unit

Mon. Jan. 23 2006 through Fri. Jan 27 2006
Dates of Study

THE TEAM

	NAME	DISCIPLINE	UNIT	PHONE & E-MAIL
1.	Donna Wians (Team Leader)	R6 – Asst. Env. Eng.	R6 R.O.	503-808-2526 dwians@fs.fed.us
2.	Lou Janke	Asst. RELM Staff	Colville N.F.	509-684-7230 ljanke@fs.fed.us
3.	Jann Bodie	Landscape Arch	Colville N.F	509-684-7190 mbodie@fs.fed.us
4.	Kathie Snodgrass	Architect	WO-MTDC	406-329-3922 ksnodgrass@fs.fed.us
5.	Thomas Torres	Civil Engineer	R5 - LTBMU	530-543-2696 ttorres@fs.fed.us
6.				
7.				
8.				

THE STUDY SUBJECT

(General Description, reason for selection, and requirements)

Project Scope/Limits:

This Value Analysis (VA) includes a review of the building modifications and new interpretative displays for the Lava Lands Visitor Center (LLVC), along with an upgrade to the existing water system. The building modifications include additional area, elimination of deferred maintenance, electrical and mechanical upgrades, with a significant component being the addition of fire protection sprinkler system. The LLVC is a "Key distribution and contact point" for the Newberry National Volcanic Monument with an average use of 375 people per day and 1,000 people per day in peak use.

The project was originally conceived in 2003 at an estimated cost of $1.1 mil. The project (without the associated water system upgrades) was advertised in 2005 but not awarded because the only bid was more than 2 times the government estimate.

The VA does not include analysis of Alternative site locations, wastewater modifications, recently completed site improvements, and future small projects.

The current plan by the forest is to re-advertise the bldg modifications solicitation w/o interpretive displays and 8 additive bid items in February 2006. Pending successful award of the bldg modifications contract, a second contract will be advertised and awarded for the interpretive displays followed by a third contract for the water system upgrades. Additional small projects will be implemented for the identified additive bid items as local funds allow.

The current estimate for the project is broken down as follows:

The current budget breakdown for the project is as follows:

FY 2006 Cost Pool 9 (Fac Mtce) – DNF allocation = $489,000 w/o LLVC sq.ft. considerations
(Funds planned for LLVC = $20,587 – salary + supplies)
$265,000 is available for other DNF def. mtce projects
$65,000 of the $265,000 is earmarked for HVAC upgrades at LLVC
$3,000 of the $265,000 is earmarked for Septic Tank Scrubbers

Rec Fee Dollars - $160,000 might be available for operations

CMFC – DNF Allocation = $179,200
NFRW – DNF allocation = $???? could go towards operations

FY 2006 CIP Dollars -

FY2006 CMFC – Zero Dollars allocated for LLVC

The current building size is 4,690 sq.ft. The proposed building modifications would add 1,504 sq.ft..

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.

PHASE I: INVESTIGATION

Step 1: Collect information needed for the analysis.

LIST OF PLANS, REPORTS, STUDIES, AND DOCUMENTS USED FOR THE STUDY.

Title	Prepared By	Date
Interpretive Plan		
Bldg Design Prospectus		
Transition Plan – Accessible Developed recreation…. A Strategy for te Deschutes Natl. Forest		April 2000
Budget Break –out w/ Sources		
Site Development Plan		
Engineering Report (for water sys)		
Visitor Data		
Bldg Plans and Specifications		
Bldg Const. Estimate		
Org. Charts		
Sanitary Suvey and Condition Survey		
Interpretive display data		
Bid Tab (Summary) for last bidder		
NEPA Document (DID NOT RECEIVE)		
Luahn Simms Code Interpretation for Sprinkler Sys		
Comparability Study for Water Sys. Alternatives	PSOMAS	
IBC 2003		
NFPA Ch. 13 (Sprinkler Sys)		
Original CIP Project Proposal	DNF	2002
Newberry Natl Volcanic Mon. Business Plan 2004		
Lava Lands Rec Area Visitor Survey (Preliminary)		Jan. 2003
Lava Lands Visitor Center Design Guidelines	Robin	11/20/2003

PHASE I: INVESTIGATION

Step 2: Read, study, explore, and interview.

LIST OF PEOPLE INTERVIEWED FOR THE STUDY.

Name/Title	Notes
Mark Christensen – Recreation Program Manager	(Tues. Morn.) - Monument is a "District Operation", New Ranger – Mike Cruz (new since last July), Robin ? (LA at Dist) is project lead at dist. level, Interp. Plan – we want to capture "existing customer" and provide quality experience, new facility to serve as "orientation point" for rest of monument, design parameter - bldg was congested – not enough room for interpretive led progams, level of excitement "generally good" – Larry Pratt (seasonal empl) manages the day to day operation when open May thru Oct, High Desert Museum (HDM)– what is our role in relation to HDM? – can't afford to duplicate HDM, coordination has occurred (exchange of artifacts, etc…, other museum – Warm Springs Museum, no signed agreements between other museums but there is cooperation, Federal Highway Enhancement money – has not been sought,
Bob Deane – Forest Eng.	Main drivers for project - Room to do presentations, more admin space (offices), new entry was NOT part of original "driver", Would like team to consider phasing project as one alternative.
Bob Gibbs – Contracting Officer	• CO is Vicki Veeder on the DNF • Need strong COR on the project • Can do sole source contract – has to be justified via C.O. based on superior knowledge and previously knowledge • Should be put on acquisition plan
Gail Throop – R6 Rec	• $250,000 FEDPLAN is available for the Water Sys • Funds can be used for water/wastewater items in the buildings if needed
Luahn Simms – R6 Mech Engineer	• LLVC is a visitor's center and has no requirement for card readers • Bldg should be secured with Heavy Duty non-FS locks • Alarm system to local police or security business

Robin Gyorgyfalvy - Director of Interpretive Services - DNF	(Tues. Afternoon) • Exhibits – existing exhibits are oiginal 30 years old • Stay low tech is a goal (maintenance and cost considerations) • Architect designed Warm Springs Museum and other in Portland • Integrated dedsign of Interpretation and architecture is very important • Face of bldg with lava rock is important as a “sense of arrival” and is shown as alternate bid item • The existing design seperates the uses in a better manner (seperates lobby, gift shop, etc…) • Gift shop is seen as the attraction by some users • Interpretative goal should stress “Interconnectedness between geology, ecology, climate and culture” • Lots of coordination between resource specialists on the forest (w/o formal funding) • Trail improvements have been completed recently • The sequence of improvements is a bit dis-connected and probably not as efficient asa could have been • Design charrette was completed – used to help develop “design guidelines” • Other funding sources? – Gift Shop Concession helps pay for NWIA employees in the LLVC – helps provide better program but can’t contribute to const. cost • Business Plan provided by Robin (dated 1999) • Recent decline in uses in recent years? See visitor data sheet provided by Robin (e-mail from Lary Pratt dated 10/13/2006) - market analysis in interpretive plan gives estimate of future uses – more locals (recent locals) are visiting the site • Road construction – some sidewalk and curb replacement has been completed? Paking lot repaving has been completed recently. • $8-$10 admission at High Desert Museum • $5 per car for LLVC admission currently – future fees are not anticipated to increase – rec fee admission rules affect what can be charged • HDM – partnership exists with them and with Warm Springs Indian Museum – • Trying to get more community involvement – celebration event held for Indian Youth Art Exhibit – 3oth anniv. of the LLVC held w/ peformances – • Focus in the future – partnership/cooperation w/ other museums • Wians – does Winema provide $$$ to the HDM? They used to. 8 yrs. Ago

Robin Gyorgyfalvy - Director of Interpretive Services – DNF (cont…)	• ODOT project suggests modifying entrance to the LLVC along frontage road. Robin wants to keep existing entrance off the highway – more efficient • Forest Hwy Dollars – Visitor Center does not compete well and interest from RO (Dave Sell) has not been encouraging – may be helpful to discuss again with the people in charge – never actually applied for grant funding • RAC funding – not explored to date. • Funding – recommendations on phasing? • Contractor constriants? Can they give Contractor full access to the site? • Was there a pre-bid showing? Ask doug? • Preference is to build and provide interpretive items at the same time. (of course) • Sequence – existing area 1st, exhibit area 2nd, lobby 3rd, • Contract Time? • Best shut down time? Can accommodate anything • Robin is willing to move operations out of site during construction. (including entire summer) Maintain gift shop is important to maintain some revenue - yurt in the parking lot? • Were other schemes/layouts proposed to eliminate new addition? – • Storage/IT/office needs – can this be seperated from the existing bldg.? this is mentioned in the planning documents • We are not accommodating large groups very well right now • Minor item priorities: Air conditioning went out last summer, bathroom fixtures, breakroom sink does not function, IT system is inadequate, • Lou's concern – coordinate with Forest IT people now!!!! Impress this on Doug • Project management – key contacts – Doug COR, Robin, Project Lead – Pratt, daily manager, decision maker, Ranger (Phil Cruz), • Summary of costs to date – how much has been spent to date? Ask Doug • Robin – very happy with design product!

Steve Sichau – R6 Elec Engineer	• Steve's first design job in Region 6 (way back when…) • Cat 5 wiring exists – specs say replace to Cat 6 – minor item – labor is the same • Govt furnished UPS – from Ochoco – tied to panel O • Project was underestimated from the start • Did'nt show a lot of detail for exhibit stuff • Already reduced quality of fixtures in the building • Already eliminated some exterior lighting requirements • FS IT personnel – have they been contacted? Steve has not initiated – It is Doug's/Forest's responsibility • Oregon energy code – requires flourescent lights to meet code requirements • Already changed track lights to minimize costs • UPS in Pine Room? – to move to rm 111 – might need to increrase air cond. to rm 111. • Best if UPS is near power panel – save cost of feeder conductors • Keep in mind the required clearances for elec. Equip if we move equip. to rooms • TVSS – can this be phased in future? – • No raceway/conduit legend – makes bidding dificult for contractors • Single IT room in main bldg? – give up real estate in main bldg for clearances and upgrade AC • A/E did'nt look at air cond requiements • Lou – new split AC - • TVSS – cost is $1,000 – so we will not save • Est $10k for elec redesign and additional cost for mech issues • Luahn – was actively working on HVAC system last summer • Option of using new Design team to complete some design for project?
Doug Seaman, Facility Engineer, COR - DNF	• Only one bid and came in too high. They did work with contractor and bidder came back with Value Engineering bid offer for much reduced price. • High bid could be attributed to 1) 30 day bid period; 2) Mixed specialties – including exhibits with building construction 3) Amount of information; 4) Time of year; 5) Lots of construction in area – not hungry for work; 6) Cost of materials has skyrocketed. • Many items dropped, along with the 8 optional items inculded in the contract.

Cynthia Hunter, R6 Eastern OR Water/Wastewater Eng	• Existing 4” gray piping has been investigated by PSOMAS and their opinion is it is “conduit” – it is thin walled • Standard fittings do not fit to 4” gray pipe • Color – shade of existing gray is lighter than what was used for “water” pipe • Size of 4” pipe? Is it too big? – domestic design flow = 90 gpm – probably – will be looked at during re-design of water system • Water rights – group “Domestic” allows 15,000 gpd withdraw • Bend Fire Dept / Sun River Fire Dept. are the responsible fire dept. – response time = 15 min. to 30 min. • We are not providing exterior fire hydrants - • Min size of sprinkler main is 5” per code • NFPA requirement for building connection – fire dept has said they would not use it so it is not in the existing bldg. design • Need an integrated approach to the water sys design and interior sprinkler system • Problem – we do not know what fire flow is required for appropriate fire pump design? Report assumes 250 gpm pump is adequate • Ground water source is good – deep 400’ – 20 hp existing pump • Fire sprinkler sys – do we have to comply with code as far as needing certified fire pump? Jerry C. says we should comply with NFPA code requirements • What info do you need to continue w/ water sys. Design? Answer on Fire Protection – if we need to povide sprinkler sys., Cynthia needs to develop new task order to add fire pump/controls to existing task order – will cost more $$$ • DEQ says we cannot use dry well to dispose of sink waste • Cynthia suggests using ejection pump system in basement to eliminate need for gravity sewer line which involves cutting concrete slab (pump is cheaper option) Tie into nearest drain line.

John Haswell – Architect - StastnyBrun	• validated occupancy loads as shown on the plans (plans are correct) • if seating remains in place 90% of time, could use 7 s.f./person for presentation hall • did not count fixed furniture in occupancy space calculations • assumed lobby doors were open 98% of the time • space south of title wall in rm 112 functions as part of the lobby • to reduce occupancy – change use or divide area with fire wall/doors
JoAnn Simpson, R6 architect	• She asked if the architect had included an allowance for the distance from any neighboring buildings. The west side would probably not get a credit, because it's too close to the rest rooms, but the exhibit hall probably would, possibly up to 25% reduction in that area. • She thought the new code may allow the space behind the reception area to be considered incidental, thereby excluding it from the A-3 SF. • Moving the eco exhibit out of the presentation hall may actually change that to an educational area. (E) • Will need separation walls between the A-3 and storage area and different class of areas. • All of this is dependent on the architect's interpretation, but she felt the reduction in A-3 space could be achievable.

PHASE I: INVESTIGATION

Step 3: Identify the project, its scope, and limits.

Team Questions:

Can we comply with CODE and not be required to install sprinklers?
Do we need to sprinkle the building?
What does our FS Policy State with regard to sprinklers?

What is the “level of excitement” for the project? What is driving this project?

Team Notes:

It appears that if we do not construct the addition, we would not need to install sprinkler system based on occupant load being less than 300. New addition adds occupant load of 178 to the building. Existing bldg. occupant load is 223 (which is less than 300). Ref Chapter 9 IBC.

It appears, the project scope has expanded beyond its budget – Is it realistic to pursue this expaned project scope or scale poject back to its original scope where it might be affordable with current funds.

Original Scope defined in: Original CIP Project Proposal, ….LLVC Design Guidelines

Can we solve more problems if we reconstruct versus remodel?

Other issues that might come up in a remodeled building: HVAC sys needs work, what is life of a remodeled bldg.

Can FHWA Enhancement funds be sought to augment existing funds?

Potential Cost Savings Proposals: 01100 – Construction Activities require significant controls – FS will occupy premises during entire project. Can we modify this to give Contractor greater freedom to work at the site? FS vacating bldg – is this an option?

Ocuupancy Loading:

Assumptions: Occupant load over 300 is the trigger for building sprinkler requirements

Given: Code = IBC 2003

Section 1004, Table 1004.1.2. Maximum Floor Area Allowances per Occupant

(Concentration)
Assembly w/o fixed seats = Concentrated (chairs only) = 7 s.f./occupant net
Standing Space = 5 s.f./occupant net
Unconcentrated (tables and chairs) = 15 net

Occupancy Group = A-3 Assembly

EXISTING DESIGN

Room	Area (sq.ft.)	Concentration	Occupant Load
Presentation Hall	991	5 (7? G-002)	198 (141)
Exhibits	1,237	15	82
Lobby	804	5	161
Gift Shop	260	15	17
Reception	88	15	6 .
			464 (407)

PHASE I: INVESTIGATION

Step 4: Identify the performance criteria.

1. Improve LLVC employee conditions (W)
2. Enhance Interpretive Displays (M)
3. Upgrade Utilities (water distribution) (M if does'nt meet stds, W if meets stds)
4. Upgrade Utilities (fire protection / etc…) (M if code requirement, W if not required by code)
5. Upgrade Utilities (bldg elec, plumbing etc..) (M if code requirement, W if not required by code)
6. Enhance visitor experience (W)
7. meet accessibilty standards (M)
8. minimize O&M (W)
9. Improve energy conservation (W)
10. modernize visitor center (W)
11. fix structural problems (undersized beams and others…) (M)
12. extend life of building 20-25 years (W)
13. facilitate opportunities fo partnerships (W)

PHASE I: INVESTIGATION

COST DATA:

The current estimate for the project is broken down as follows:

Based on Cost Estimate (source: DMC Cost Consulting, 09/15/2005) (estimate is probably low in several items)

Base Bldg. + Alternate Items = $535,000
Exhibits = $299,169

Total = $805,000

BUDGET:
The current budget breakdown for the project is as follows:

FY 2006 Cost Pool 9 (Fac Mtce) – DNF allocation = $489,000 w/o LLVC sq.ft. considerations
(Funds planned for LLVC = $20,587 – salary + supplies)
$265,000 is available for other DNF def. mtce projects
$65,000 of the $265,000 is earmarked for HVAC upgrades at LLVC
$3,000 of the $265,000 is earmarked for Septic Tank Scrubbers

Water System Dollars – FY2006 - CMFC – Fed Plan dollars - $250,000 - CIP project – funding can be broken up for water system and improvements at the LLVC as verified by Gail Throop (Wed. Morn)-

Assume the cost for the comparability study and the new task order will come out of the existing $250,000. (Comparability Study cost = $4,500, Est. Cost of new Task Order $16,000) If FY 2005 carryover is available, then Comp. Study and new Task Order will be covered by carryover.

Estimated FY2005 carryover = $20,000 (of which $16,000 is needed for new task order)

Rec Fee Dollars on Forest (BLI Heading???) - $160,000 might be available for operations

CMFC – DNF Allocation = $179,200 FY2006 (CMFC – Zero Dollars allocated for LLVC)

NFRW – DNF allocation = some $$ could go towards operations

FY 2006 CIP Dollars – Ph. 2 $352,000 (verified by Gina Freel)
Ph 3 $340,000

CIP Dollars Available on Forest (Based on DNF Workplan) : $313,150 FY 2004 (after draw)
$340,000 FY 2005
Total available for Bldg/Exhibits Const. = $653,150

FY2006 CMFC – Zero Dollars allocated for LLVC

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)

PHASE II: ANALYSIS

Step 1: Establish the function(s) of the entire project.

(verb)	(noun)	
Educate	Public (Primary)	(some good verbs: amplify, apply, conduct, control, create, emit, enclose, filter, hold, impede, transmit, transport, interrupt, insulate, modulate, prevent, protect, provide, repel, shield, support)
Provide	shelter	
Facilitate	Interactions (Primary)	
Provide	water	
Protect	life	
Improve	communication	
Provide	comfort	
Provide	Accessibility	

Step 2: Divide the project into its major components.

1. Exhibits
2. Structural improvements in existing building
3. Improve function of space
4. Accessibility
5. Building systems
6. Exterior water system
7.
8.
9.

PHASE II: ANALYSIS

Step 3a: Determine the costs of each component.

The expected life span is 25 years.

COST COMPUTATIONS

(Life cycle cost is not expected to be a significant driver. Life Cycle costs not computed.)

Component # 1. : Exhibits

ITEM	UNIT	UNIT COST	QUANTITY	TOTAL
1. Furniture				97,145
2. Graphics				99,997
3. Audio Visual				38,000
4. Miscellaneous/shipping/installation				38,767
	Total Initial Cost			$273,909

Component # 2. : Structural improvements in exist.

ITEM	UNIT	UNIT COST	QUANTITY	TOTAL
1. Fix existing structural				$32,662
2.				
	Total Initial Cost			$32,662

Component # 3. : Improve function of space

ITEM	UNIT	UNIT COST	QUANTITY	TOTAL
1. Addition	SF	120	1500	$180,000
2. Demolition				20,000
3. Finishes to existing structure				22,000
	Total Initial Cost			222,000

Component # 4. : Accessibility

ITEM	UNIT	UNIT COST	QUANTITY	TOTAL
1. RR - door opener & swing				6,300
2. Accessible stalls – 1/side (stall + fixt)				2,400
3. Presentation hall door openers				4,600
4.				
	Total Initial Cost			$13,300

Component # 5. : Building systems

ITEM	UNIT	UNIT COST	QUANTITY	TOTAL
1. Fire sprinkler				$24,800
2. Electrical & telecom & alarms (16000)				94,300
3. HVAC (covered under DM)				
4. Plumbing – Main bldg sink & sump				3800
	Total Initial Cost			$122,900

Component # 6. : Exterior water system

ITEM	UNIT	UNIT COST	QUANTITY	TOTAL
1. Replace potable water system (4" dist., welhead imprv, new duplex pumps, domestic elec/control)				$99,000
2. Water supply for fire sprinkler				$129,000
3.				
4.				
	Total Initial Cost			$228,000

Select a component (or components) on which to concentrate.

	COMPONENT	COST	PRIMARY FUNCTION (VERB, NOUN)	WORTH	COST/WORTH RATIO
1.	Improve function of space	222,000	Improve function		
2.	Accessibility	13,300	Provide accessibility		
3.	Building Systems	122,900	Improve communication Protect life Provide comfort Provide security		
4.	Exterior Water System	243,000	Provide water		

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!

PHASE III: SPECULATION

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.

Note: The following shows both brainstorming and a quick evaluation - we didn't figure it was worth re-writing all the ideas. After brainstorming other ways to meet each primary function, we went back and did a quick evaluation of each idea using this quick feasibility rating:

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

Component **Improve function of space** Primary Function Improve function

Other ways to meet the primary function.

Delete addition (do w/out) (2,2,1,1) 6

Delay addition (2,1,2,1)6

Provide modular space for office functions(1,1,1,1)4

Eliminate admin space (office) at site and move to SO/RD(?,?,0,?)

Provide storage in other bldg (3,2,2,3)10

Move break room to storage rm in toilet bldg(?,?,0,?)

Eliminate "lump" in addition roof (redesign roof) (2,1,1,1)5

Make addition roof more conventional(2,1,1,1)5

Eliminate gift shop (2,1,1,1)5

Eliminate gift office (2,1,1,1)

Add janitor's closet (3,2,3,2)10

Minimize improvements to existing bldg – furring down nooks(0,?,?,?)

Do not move north windows in presentation room (cuts 48 sf in A-3 area)(2,2,2,2)8

Eliminate wood paneling in gift shop (3,3,2,2)10

Reduce breakroom inside add space outside (3,2,2,2)9

Reduce size of new addition to new lobby only(2,1,1,1)5

Eliminate redundant foundations (?,?,0,?)

Move break room outside (?,?,0,?)0

Move breakroom to other bldg(0,?,?,?)0

Salvaged existing wood shake siding and reuse on addition(0,?,?,?)

Eliminate custom cabinets in reception area– use pre-made cabs. (3,2,1,2)8

Eliminate custom cabinets in break room– use pre-made cabs. (3,2,3,2)10

Replace wood wall base w/ vinyl (3,2,3,3)11

Eliminate benches in front of new entry(3,3,2,3)11

Eliminate doors 11 and 12 presentation hall and lobby – do they meet code for egress(2,3,2,3)10

Change window E (corner window) add new window on flat wall(3,2,2,2)9

Redesign addition w/o diagonal wall to reduce const. costs(2,1,1,1)5

Place IT equipment in basement(?,?,0,?)0

eliminate display case in reception area) (?,?,0,?)0

Demo existing building and start over (?,?,0,?)0

Add door/wall between gift shop and lobby to change to group B(2,1,1,1)5

Reduce effective lobby size to no more than 50 occupants IBC 303.1 (2,1,2,1)

PHASE III: SPECULATION

Steps 2 & 3 continued

Component **Accessibility** Primary Function Provide accessibility

Other ways to meet the primary function.

Wire for future door openers (install at a later date) (3,2,1,2)8	
Delay all door openers (including wiring) (3,2,1,2)8	
Remove interior airlock toilet door(3,3,2,3)11	
Eliminate motor actuated doors – provide doors w/ less than 5 lbs opening force(3,3,1,3)10	

PHASE III: SPECULATION

Steps 2 & 3 continued

Component **Building systems**

Primary Function
Communications
Protect life
Provide comfort
Provide security

Other ways to meet the primary function.

Make mgmt decision not to sprinkler the bldg. as designed (0,?,?,?)

Move fire alarm to basement – if no addition(3,3,2,3)11

Move security/PA/fire alarm to basement/breakroom and telecom to IT room(2,2,2,2)8

In IT room (111) exhaust to exterior , not attic(3,2,3,2)10

Use romex where allowed (?,?,0,?)

Consider ejector – pump in basement for kitchen sink(3,1,1,1)6

Eliminate automatic flushers(3,3,2,2)10

Install xcellerator hand dryers insead of towel holders(3,2,2,2)9

Delete UPS system (?,?,0,?)0

Reduce size of presentation hall for estimated 50-60 persons (3,1,2,1)7

relocate UPS to main bldg (3,2,3,2)10

Defer replacement of light fixtures in toilet bldg(3,3,2,3)11

Eliminate card lock system – secure bldg w/ Heavy Duty Non FS locks (3,3,2,3)11

Increase size of storage (rm 111) room / reduce size of break room and locate all items in one IT room(2,1,2,1)6

Phase 1 – Only build exhibits with required supporting systems (2,1,2,1)6

Use all water system sprinkler system instead of “anti-freeze” (3,1,1,1)6

Use dry type fires suppresion system(1,1,1,1)4

Redesign portions of bldg to get occupant load under 300 in Occupancy A-3(2,1,3,1)7

Provide false wall in presentation area/exhibit area to provide access to IT/Elec equip, (2,1,2,1)6

For new wiring – use flexible metal conduit (3,2,3,2)10

install 750 gal septic tank/leach line for kitchen sink gray-water(2,1,2,1)6

install ? gal holdng tank for break room sink gray-water(2,1,2,1)6

install conduit for future card reader(3,3,2,3)11

eliminate card reader system(0,?,?,?)0

Eliminate wall washer fixtures above door between reception and presentation room (3,2,2,2)9

Consider injection well waiver for break-room sink(?,?,0,?)0

Provide storage for chairs/tables in presentation room (per Robin's note) this would lessen A-3 area(3,1,2,1)7

PHASE III: SPECULATION

Steps 2 & 3 continued

Component **Phasing/contracting issues** Primary Function

Other ways to meet the primary function.

Revise contract timing requirements – let Contractor have full access to the site w/o FS interference(3,3,3,3)12

Design Fire Sprinkler System prior to bidding project again(2,1,1,1)5

Delete note J on sheet E2.2(3,3,2,3)11

Use savings from water system (if any) for water/wastewater improvements in LLVC(3,3,3,3) 12 B

Clearly define and specify parameters for sprinkler sys design/build including supply connections, controls to pump, blow-off, testing/monitoring, etc… (3,2,3,3)11 B

Bid exhibits mfg. and exhibit installation seperately (supply contract vs. const – prevail. Wages - expertise) (3,1,2,1) 7

Remove cut sheets from Div. 16 specs that are'nt used in project(3,3,3,3)12 B

Delete 'Energy Conservation Officer" and "Waste Management Coordinator" I Spec 01310(3,3,3,3) 12 B

Allow generous time for completion of contract work(3,3,3,3)12 B

Delete requirements for "licensed Exterminator" in Spec. 01310

Allow 6 weeks for bid period(3,3,3,3)12 B

Ensure contractors are aware of project (other than just fed biz ops) (3,3,3,3) B

PHASE III: SPECULATION

Steps 2 & 3 continued

Component **Water System Supply** Primary Function Provide water

Other ways to meet the primary function.

Eliminate need for fire sprinkler supply by reducing occupancy load (less than 300 group A-3) (3,3,3,3) 12

Evaluate need for 4" domestic supply, if smaller pipe, push through existing 4" line rather than new trench(3,3,3,3)12

Complete potable water system re-design(3,3,3,3) 12

Provide alternate well closer to LLVC for fire supply(?,?,0,?)0

Use surplus control panel(2,1,1,2) 6

Use telemetry for controls if no other trenching(3,1,2,2)8

Use industry standard control panel(3,3,3,3)12

Eliminate booster pumps (use alt. 2 of comparability study) (3,3,3,3)

Put control wires in conduit to LLVC from water well area (if needed) – in same 4" ex. pipe as water line (2,3,3,3)11

Use non -NFPA fire pump(0,?,?,?)

If addition delayed, Install 6" line for future sprinkler supply(3,3,1,2)9

Eliminate Backflow Preventer in Pine Room if fire supply not required(3,3,3,3) 12

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

PHASE IV: EVALUATION

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

FEASIBILITY RATING

Component: _____ Primary Function: _____

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. See pages 24-30					
2.					

PHASE IV: EVALUATION

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

LIST OF SELECTED BEST ALTERNATIVES

Alternative:	**ONE** - Update existing foot print only (no addition) – focus on updating exhibits first and bringing bldg. to current standards
Notes:	Advantages: • conforms to original CIP Proposal to stay w/in exist. Bldg. foot print • emphasizes updating exhibits • w/in existing budget • implementable w/in one year • no need for sprinkler sys • no need fire supply • corrects Deferred Mtce deficiencies • centralizes IT room for greater efficiency • corrects accessibilities deficiencies • extends life of building • more consistent with objectives of strategic budget • least O&M costs • upgrades potable water system •

Alternative:	**TWO** - Redesign Structure to reduce square footage (area) and occupant load and eliminate sprinklers Focus – allows for more re-design effort
Notes:	**eliminated from detailed consideration because of probable excessive cost and untimely implementation**

Alternative:	**THREE** - Maintain existing design with minimal changes but phased to accommodate existing funding and actively pursue additional funding for future phase Focus – develop phasing for building exhibits first – providing building improvements second Concern – Phase I may be all the LLVC ever sees due to funding constraints
Notes:	Advantages • emphasizes updating exhibits • Phase 1 can be completed w/in existing budget • corrects Deferred Mtce deficiencies • centralizes IT room for greater efficiency • corrects accessibilities deficiencies • extends life of building • upgrades potable water system • improves function of the LLVC once all phases are completed • fire sprinkler provided for life safety when phase 2 completed • minimizes re-design costs • If phase II is not constructed, LLVC is functional

Alternative:	**FOUR** - Maintain existing design but phased to accommodate existing funding and actively pursue additional funding Focus – building improvements including addition first - building exhibits second
Notes:	Advantages • emphasizes building w/ addition completion • Phase 1 can be completed w/in existing budget • corrects Deferred Mtce deficiencies • corrects accessibilities deficiencies • extends life of building • upgrades potable water system • improves function of the LLVC once all phases are completed • fire sprinkler provided for life safety after Phase 1 completed • minimizes re-design costs • exhibits may be more competitive/appealing for additional funding from partners than bldg.

Alternative:	**FIVE** - Reconfigure existing design to reduce occupancy load thereby eliminating sprinkler system: Focus – providing for all functional requests w/o sprinkler system requirements
Notes:	Advantages: • may be phased as in Alts. 3 & 4 • no need for sprinkler sys • no need fire supply • corrects Deferred Mtce deficiencies • centralizes IT room for greater efficiency • corrects accessibilities deficiencies • extends life of building • upgrades potable water system • provides more storage in main bldg and pine room • when all phases complete, improves bldg function • improves viewability of exhibits by moving exhibits out of presentation hall • better utilization of space • provides storage for chairs/tables in presentation area

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?

PHASE V: DEVELOPMENT

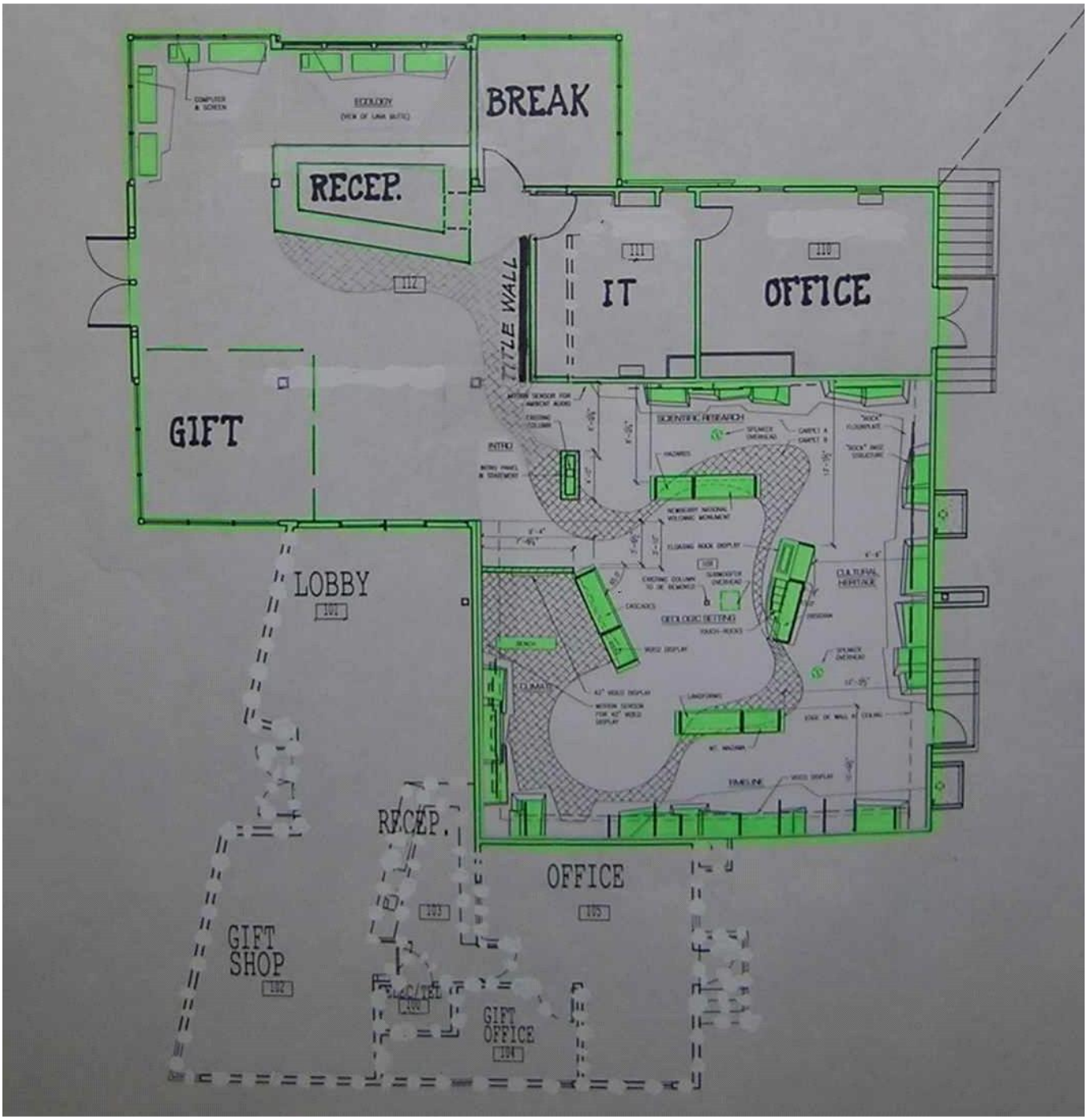
NARRATIVE DESCRIPTION OF ALTERNATIVE # **ONE**

Step 1: Describe the selected alternative.

Update existing foot print only (no addition) – focus on updating exhibits first and bringing bldg. to current standards

- this is consistent with original CIP proposal
- includes new exhibits and support systems as designed in exhibit hall
- Separate contract for exhibits mfg/supervise install
- includes fixing structural problems
- includes accessibility improvements
- include janitor's closet
- includes reconfiguration of reception and gift area
- reception/gift area would impact room 112 as designed
- main storage would be accommodated in another bldg.
- reduce break room size/expand Storage (rm 111) to accommodate IT equip
- no need for sprinkler system
- eliminate custom cabs in break room
- provide break area outside
- replace wood wall base w/ vinyl
- wire for future door openers
- remove air lock bathroom interior doors
- eliminate motor actuators for doors by adjusting exist. Doors to less than 5 lbs.
- fie alarms/security panels in basement or rm 111
- rm 111 – exhibit controls panel "O" and UPS, light dimmers, etc… Radio, intercom,
- allow for office space by utilizing portion of room 112 or modular bldg.
- install conduit for future card reader
- eliminates presentation room
- upgrades potable water sys.
- Provide holding tank for break room sink
- Use flexible metal conduit
- Move north window as designed in room 112

Step 2: Show a map, drawing, or diagram.



Step 3: Develop Costs

Major Item	Cost	Source
Existing Building Reconstruction	$384,000 (410,000 (@ $100/s.f. minus $26,000 for sprinkler sys removal)	Experience
Furnish / Install Exhibits	$300,000	Designer Estimate
Upgrade Potable Water System	$100,000	Comparability Study
Re-design Costs		
Elec/IT Room Reception/Gift Area Break-room	$10,000 $10,000 $2,000	Experience
TOTAL	**$806,000**	
Forest Def. Mtce. Program – HVAC / Air conditioner for IT Room – design & construction	$65,000	

Notes:

1. Maximum worth of remodel to the government should not exceed $800,000
2. Assumes no additional Project Management costs to Forest
3. Opportunities to reduce cost include:
    a. Use flexible metal conduit
    b. replace wood wall base w/ vinyl
    c. wire for future door openers
    d. remove air lock bathroom interior doors
    e. eliminate motor actuators for doors by adjusting exist. Doors to less than 5 lbs.
    f. install conduit for future card reader
    g. eliminate custom cabs in break room
    h. install new water service inside existing 4” water service line
    i. Use Sump Pump Basin to handle sink gray water

PHASE V: DEVELOPMENT

NARRATIVE DESCRIPTION OF ALTERNATIVE # **TWO**

Step 1: Describe the selected alternative.

Redesign Structure to reduce square footage (area) and occupant load and eliminate sprinklers

Focus – allows for more re-design effort

- **eliminated from detailed consideration because of probable excessive cost and untimely implementation**

Step 2: Show a map, drawing, or diagram.

N/A

Step 3: Develop Costs

N/A

PHASE V: DEVELOPMENT

NARRATIVE DESCRIPTION OF ALTERNATIVE # **THREE**

Step 1: Describe the selected alternative.

Maintain existing design with minimal changes but phased to accommodate existing funding and actively pursue additional funding

Focus – develop phasing for building exhibits first – providing building improvements second

Concern – Phase I may be all the LLVC ever sees due to funding constraints

Phase 1 – exhibits, exhibit hall, structural, single IT room, accessibility

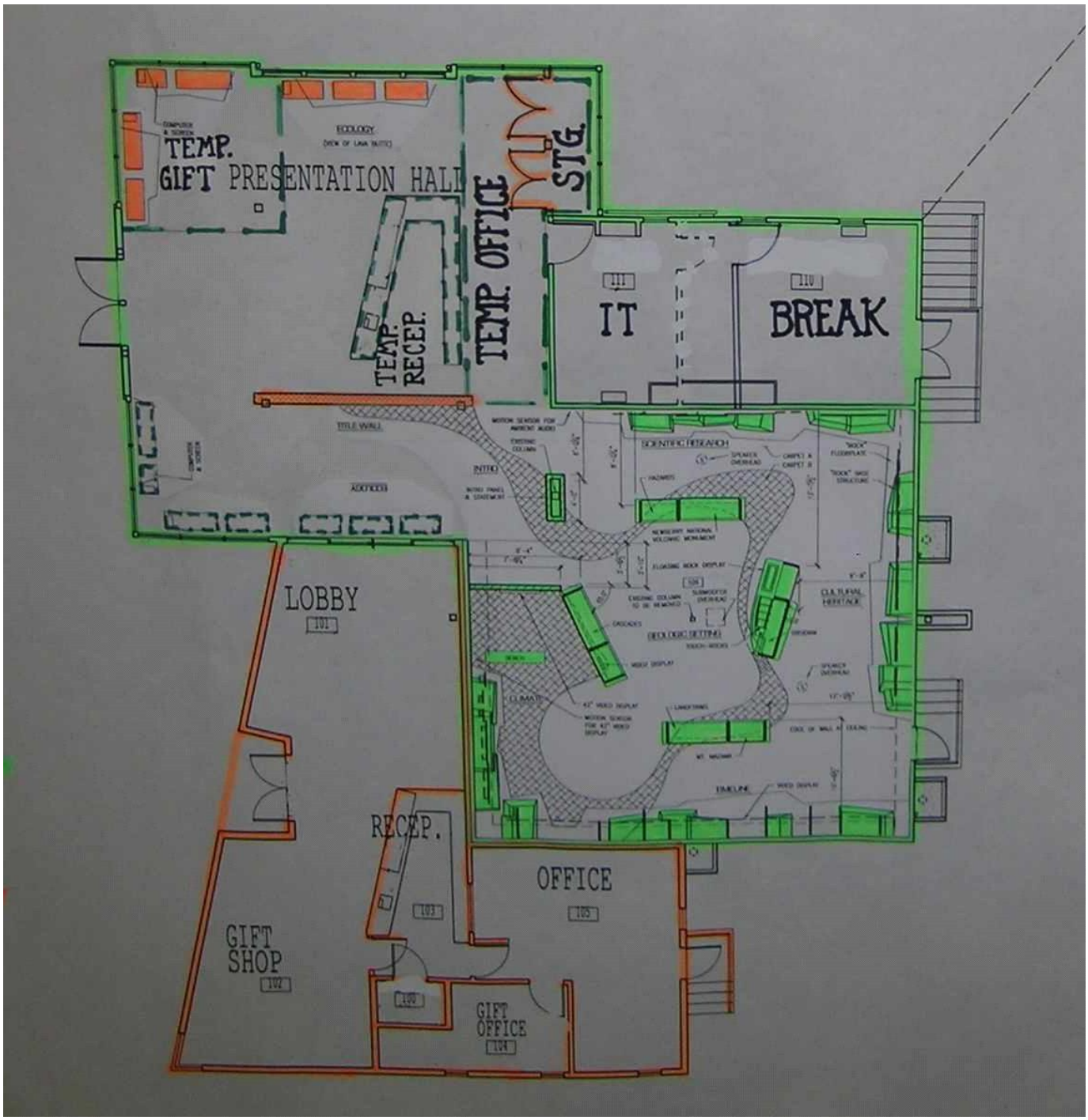
- includes new exhibits and support systems as designed in exhibit hall
- includes fixing structural problems
- includes accessibility improvements
- includes major reconfiguration of existing reception and gift area (temporarily)
- expand Storage (rm 111) to accommodate IT equip
- no need for sprinkler system at this time
- eliminate custom cabs in break room
- replace wood wall base w/ vinyl
- wire for future door openers
- remove air lock bathroom interior doors
- eliminate motor actuators for doors by adjusting exist. Doors to less than 5 lbs.
- fire alarms/security panels in rm 111
- install conduit for future card reader
- upgrade potable water sys.
- Separate contract for exhibits mfg/supervise install
- Eliminate doors 11 and 12
- Move UPS to rm 111
- Provide holding tank for break room sink
- Use flexible metal conduit for new wiring
- Title wall will not be constructed this phase
- Ecology exhibit will not be constructed this phase
-

Phase 2 – secure additional funding, construct addition

- include janitor's closet in pine room (rm 113)
- main storage would be accommodated in another bldg.
- add sprinkler system
- construct new fire supply system
- eliminate motor actuators for doors by adjusting new doors to less than 5 lbs.
- install conduit for future card reader in new addition
- Eliminate benches in front entry
- Consider eliminating corner window
- Consider provide storage for chairs/tables in presentation room

- Use flexible metal conduit for new wiring in new addition
- Eliminate wall washer light fixtures above door 10
- Title wall will be constructed this phase
- Ecology exhibit will be constructed this phase
- Construct storage for chairs/tables I presentation room

Step 2: Show a map, drawing, or diagram.



Phase 1 **Phase 2**

Step 3: Develop Costs

Major Item	Cost	Source
PHASE 1 Existing Building Reconstruction	$384,000 (410,000 (@ $100/s.f. minus $26,000 for sprinkler sys removal)	Experience
Furnish / Install Exhibits	$300,000	Designer Estimate
Upgrade Potable Water System	$100,000	Comparability Study
Re-design Costs		
Elec/IT Room Reception/Gift Area Break-room/office	$10,000 $10,000 $ 5,000	Experience
PH 1 TOTAL	**$806,000**	
PHASE 2 Bldg Addition Construction	$180,000 (@$120 / s.f.)	Experience
Fire Supply	$129,000	Comparability study
Sprinkler System	$ 26,000	
PH 2 TOTAL	**$355,000**	
Project Total	**$1,144,000**	
Forest Def. Mtce. Program – HVAC / Air conditioner for IT Room – design & construction	$65,000	

Notes:

1. Maximum worth of remodel to the government should not exceed $800,000
2. Assumes no additional Project Management costs to Forest
3. Opportunities to reduce cost include:
   a. Use flexible metal conduit
   b. replace wood wall base w/ vinyl
   c. wire for future door openers
   d. remove air lock bathroom interior doors
   e. eliminate motor actuators for doors by adjusting exist. Doors to less than 5 lbs.
   f. install conduit for future card reader
   g. eliminate custom cabs in break room
   h. install new water service inside existing 4” water service line
   i. Use Sump Pump Basin to handle sink gray water

PHASE V: DEVELOPMENT

NARRATIVE DESCRIPTION OF ALTERNATIVE # **FOUR**

Step 1: Describe the selected alternative.

Maintain existing design but phased to accommodate existing funding and actively pursue additional funding

Focus – building improvements including addition first - building exhibits second

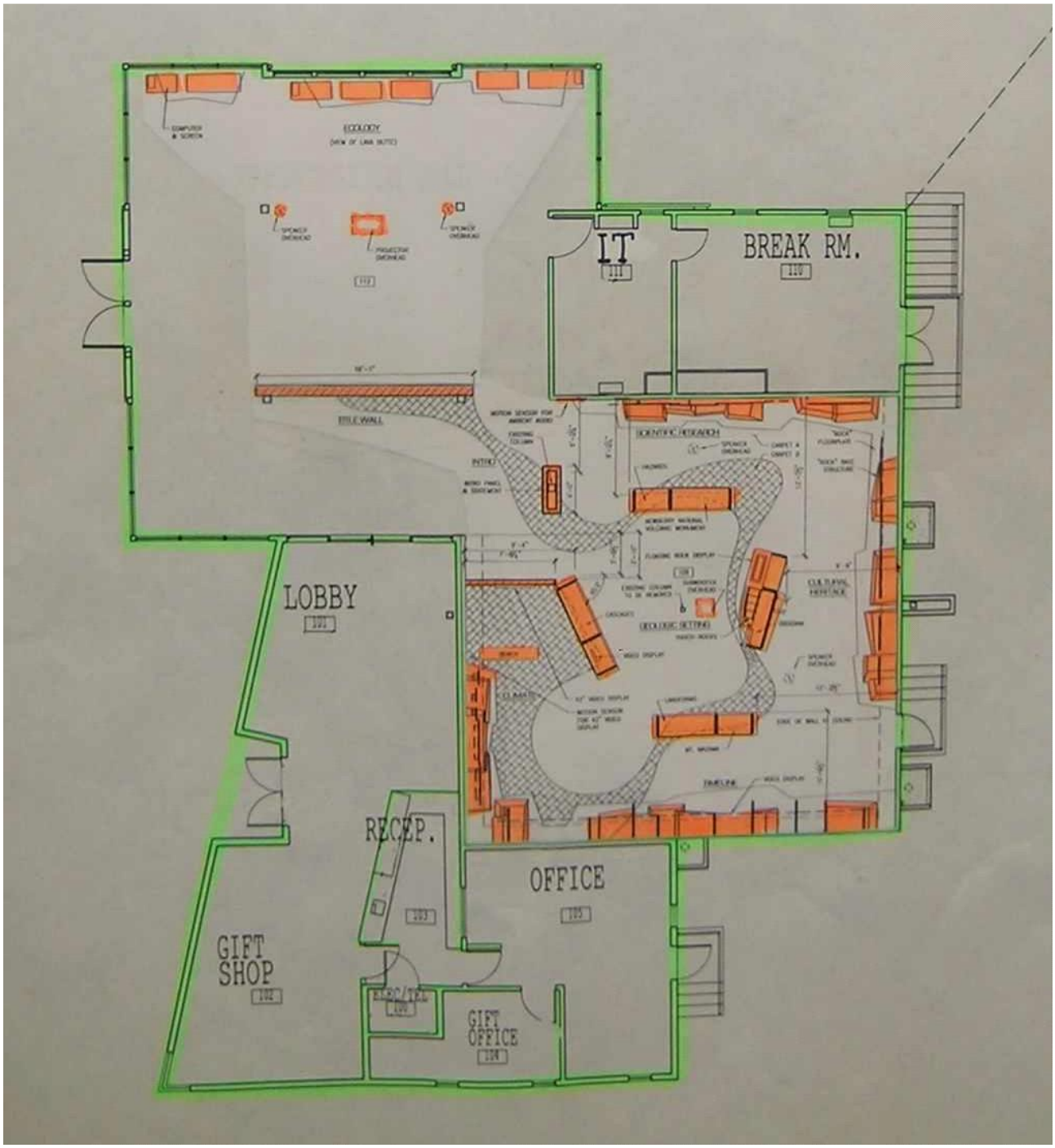
Phase 1 – all building construction first including new addition

-
- includes fixing structural problems
- includes accessibility improvements
- leave IT space as designed in contract
- add sprinkler system
- upgrade potable water sys
- construct fire supply system
- eliminate custom cabs in break room
- replace wood wall base w/ vinyl
- wire for future door openers
- remove air lock bathroom interior doors
- eliminate motor actuators for doors by adjusting new doors to less than 5 lbs.
- fire alarms/security panels in rm 111
- install conduit for future card reader
- Eliminate doors 11 and 12
- Provide holding tank for break room sink
- Use flexible metal conduit for new wiring
- Eliminate wall washer light fixtures above door 10
- Eliminate benches in front entry
- Consider eliminating corner window
- Consider provide storage for chairs/tables in presentation room
- main storage would be accommodated in another bldg.
- construct rough-in for exhibit support systems
-

Phase 2 – secure additional funding, construct exhibits

- includes new exhibits mfg and installation -
- finish exhibit support system (i.e. lighting, etc…)

Step 2: Show a map, drawing, or diagram.



Phase 1 **Phase 2**

Step 3: Develop Costs

Major Item	Cost	Source
PHASE 1 Existing Building Reconstruction	$385,000 (410,000 (@ $100/s.f. minus $25,000 for exhibit AV equip)	Experience
Bldg Addition Construction	$180,000 (@$120 / s.f.)	Experience
Upgrade Potable Water System	$100,000	Comparability Study
Fire Supply	$129,000	Comparability study
Re-design Costs		
Elec/IT Room Break-room/office	$10,000 $ 5,000	Experience
PH 1 TOTAL	**$809,000**	
PHASE 2		
Furnish / Install Exhibits	$300,000	Designer Estimate
Install exhibit lighting A/V equip	$25,000	
PH 2 TOTAL	**$325,000**	
Project Total	**$1,134,000**	
Forest Def. Mtce. Program – HVAC / Air conditioner for IT Room – design & construction	$65,000	

Notes:

1. Maximum worth of remodel to the government should not exceed $800,000
2. Assumes no additional Project Management costs to Forest
3. Opportunities to reduce cost include:
    a. Use flexible metal conduit
    b. replace wood wall base w/ vinyl
    c. wire for future door openers
    d. remove air lock bathroom interior doors
    e. eliminate motor actuators for doors by adjusting exist. Doors to less than 5 lbs.
    f. install conduit for future card reader
    g. Use Sump Pump Basin to handle sink gray water
    h. eliminate custom cabs in break room
    i. install new water service inside existing 4” water service line
    j. eliminate corner window
    k. eliminate benches in front of addition
    l. eliminate wall light washers
    m. construct rough-in for exhibit support systems in phase 1
    n. Eliminate doors 11 and 12

PHASE V: DEVELOPMENT

NARRATIVE DESCRIPTION OF ALTERNATIVE # **FIVE**

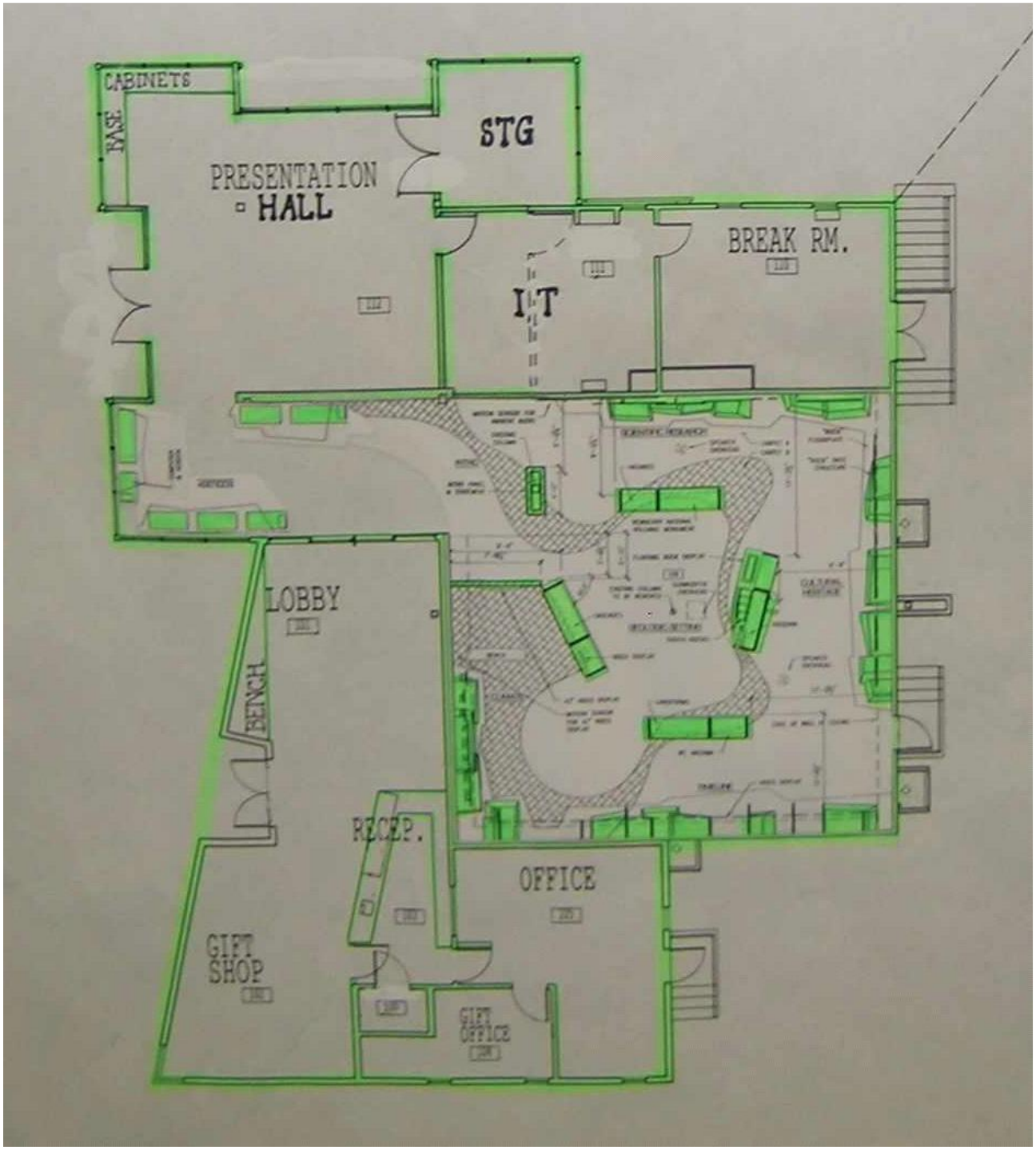
Step 1: Describe the selected alternative.

Reconfigure existing design to eliminate occupancy load thereby eliminating sprinkler system:

Focus: providing for all functional requests w/o sprinkler system requirements

- includes new exhibits and support systems as designed in exhibit hall
- includes fixing structural problems
- includes accessibility improvements
- include janitor's closet
- add bench in lobby (to occupy space)
- main storage would be accommodated in another bldg.
- consider expanding Storage (rm 111) to accommodate IT equip
- no need for sprinkler system
- eliminate custom cabs in break room
- replace wood wall base w/ vinyl
- wire for future door openers
- remove air lock bathroom interior doors
- eliminate motor actuators for doors by adjusting exist. Doors to less than 5 lbs.
- fire alarms/security panels in basement or rm 111
- install conduit for future card reader
- upgrade potable water sys.
- Eliminate benches in outside front entry
- Consider eliminating corner window
- Separate contract for exhibits mfg/supervise install
- Consider provide storage for chairs/tables in presentation room
- Eliminate doors 11 and 12
- Move UPS to main bldg
- Consider options for reconfiguration of presentation area to allow 50-60 persons
- Provide holding tank for break room sink
- Consider options for reconfiguration of lobby area to allow 50 persons
- Use flexible metal conduit for new wiring
- Eliminate wall washer light fixtures above door 10
- Adjustments for reducing occupant loading
    - Move ecology exhibit to SW corner of Presentation Hall – which changes the area to exhibit area allowing a use rate of 15 s.f./person in adjacent area
    - Presentation use rate becomes 7 s.f./person due to moving ecology unit
    - Pursue reclassifying to group B from A-3 for reception area
    - Do not move north windows in presentation room
    - Install permanent bench on west side of lobby north of entrance
    - Install fixed base cabinets in NW corner of presentation hall

Step 2: Show a map, drawing, or diagram.



Step 3: Develop Costs

Major Item	Cost	Source
PHASE 1 Existing Building Reconstruction	 $384,000 (410,000 (@ $100/s.f. minus $26,000 for sprinkler sys removal	Experience
Bldg Addition Construction	$180,000 (@$120 / s.f.)	Experience
Upgrade Potable Water System	$100,000	Comparability Study
Furnish / Install Exhibits	$300,000	Designer Estimate
Re-design Costs		
Elec/IT Room Break-room/office Additional Re-design	$10,000 $ 5,000 $ 2,000	Experience
PH 1 TOTAL	**$ 981,000**	
Forest Def. Mtce. Program – HVAC / Air conditioner for IT Room – design & construction	$65,000	

Notes:

- Maximum worth of remodel to the government should not exceed $800,000
- Assumes no additional Project Management costs to Forest

1. Opportunities to reduce cost include:
    a. Use flexible metal conduit
    b. replace wood wall base w/ vinyl
    c. wire for future door openers
    d. remove air lock bathroom interior doors
    e. eliminate motor actuators for doors by adjusting exist. Doors to less than 5 lbs.
    f. install conduit for future card reader
    g. Use Sump Pump Basin to handle sink gray water
    h. eliminate custom cabs in break room
    i. install new water service inside existing 4” water service line
    j. eliminate corner window
    k. eliminate benches in front of addition
    l. eliminate wall light washers above door 10
    m. Eliminate doors 11 and 12
    n. Move UPS to main bldg.

Common Recommendations for all Alternatives

Specification Improvements

- Remove cut sheets from Div. 16 specs that aren't used in project
- Delete requirements for "licensed Exterminator" in Spec. 01310
- Delete 'Energy Conservation Officer" and "Waste Management Coordinator" I Spec 01310
- Clearly define and specify parameters for sprinkler sys design/build including supply connections, controls to pump, blow-off, testing/monitoring, etc…

Bidding Improvements

- better bid period
- Allow generous time for completion of contract work
- Allow 6 weeks for bid period
- Bid exhibits mfg. and exhibit installation separately (supply contract vs. const – prevail. Wages - expertise)
- Ensure contractors are aware of project (other than just fed biz ops)
- Acquisition Plan – Contact CO

General

- Revise contract timing requirements – let Contractor have full access to the site w/o FS interference
- Design Fire Sprinkler System prior to bidding project again
- Use savings from water system (if any) for water/wastewater improvements in LLVC
- Delete note J on sheet E2.2
- Coordinate with IT now!
- Develop Timeline w/ responsibilities

Messages: Management (Project/Timeline w/ responsibilities/Funding/Coordination)
Implementation (timeline/spec improvements)
Alternative Designs (uncertainties and trade-offs)

ALTERNATIVES COST COMPARISON TABLE

Alternative	Phase 1 Cost	Phase 2 Cost	Project Total
ONE – Update existing foot print only (no addition) – focus on updating exhibits first and bringing bldg. to current standards	$806,000	N/A	$806,000
TWO -	Eliminated from detailed study based on costs/time		N/A
THREE – Maintain existing design with minimal changes but phased to accommodate existing funding and actively pursue additional funding Phase 1-building exhibits first Phase 2 – providing building improvements second	$806,000	$355,000	$1,144,000
FOUR – Maintain existing design but phased to accommodate existing funding and actively pursue additional funding Phase 1 - building improvements including addition Phase 2 - building exhibits	$809,000	$325,000	$1,134,000
FIVE – Reconfigure existing design to eliminate occupancy load thereby eliminating sprinkler system:	$981,000	N/A	$981,000

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?

PHASE VI: PRESENTATION

Step 1: Develop a preliminary plan.

A. Clarify the purpose of your presentation (usually it is to present the results of your VA Study and to make recommendations).

present the results of the VA Study and to make recommendations

B. Identify your audience:

1. Number expected: 20-40
2. Organization levels: up to Forest Supervisor
3. Disciplines: multi
4. Special interests: varies
5. Reasons for attending: stakeholder, curiosity
6. Familiarity with project: varies

C. Brainstorm and list essential information the audience will need to know:

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

A. Introduction

1. Headline (A phrase or statement that captures the audience's interest and summarizes your results).

Use photos...

2. Purpose (Of your presentation):

Lavalands VA results

PHASE VI: PRESENTATION

Step 2: Develop an outline - continued.

SEE LAVALANDS POWERPOINT

VALUE ANALYSIS PROCESS OUTLINE

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."
Objective To gather information about the project that will be needed for the analysis; answers "What is the nature of the project?"	*Objective* To find the parts of the project that have the highest potential to reduce the cost or increase benefit, or both.	*Objective* To find alternative ways of meeting the primary function(s).	*Objective* To identify the best alternative(s).	*Objective* To develop the alternatives so they can be compared with each other and the original.	*Objective* To present findings, alternatives, and recommendations to management.
Steps 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.	*Steps* 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.	*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.	*Steps* 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.	*Steps* 1. Describe the selected alternative(s). 2. Show a map, drawing, or diagram. 3. Consider major components. 4. Determine costs.	*Steps* 1. Prepare a preliminary plan. 2. Develop the outline. 3. Prepare visuals and handouts. 4. Make final arrangements.
Key Questions 1. What is the project? 2. What are the major costs? 3. How much is it worth?	*Key Questions* 1. What does it do? 2. What must it do? 3. What does it cost? 4. What is it worth?	*Key Questions* 1. What else will perform the primary function? 2. Where else may the function be performed? 3. How else can it be done?	*Key Questions* 1. Is the idea feasible? 2. Is the cost too high? 3. Can it be made to work? 4. Is it acceptable?	*Key Questions* 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?	*Key Questions* 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?