

Table of Contents

Table of Contents.....	i
List of Figures	iv
Executive Summary	1
DOD Housing Goal	1
Objective	1
Requirements	2
Alternatives	2
Special Issues.....	3
Results	4
Recommendation.....	5
Privatization Alternative Development	6
Objective	6
Site Visits	6
Government Modeling Constraints.....	6
Requirements	7
Methodology	8
Resources.....	8
Privatization Proforma.....	8
Privatization Proforma Summary.....	10
Special Issues.....	11
Economic Analysis Overview.....	12
Project Parameters	12
Descriptions of Alternatives	12
Economic Indicators.....	15

Results	16
Assumptions and Ground Rules.....	17
Description of Costs and Expense Items.....	17
Time-Value of Money Assumptions	18
Construction/Design Criteria Assumptions	19
Cost Related Assumptions	19
Economic Life Assumptions	21
Sensitivity Analyses	22
Sensitivity Analysis Overview.....	22
Variance of BAH Expense Item.....	22
Variance of MILCON Expense Item.....	23
Variance of Routine O&M Expense Item.....	23
Discount Rate Sensitivity Analysis.....	23
Non-Monetary Benefits Analysis.....	25
Non-Monetary Benefit Criteria	25
Methodology for Evaluating Non-Monetary Benefits Criteria	29
Results of Non-Monetary Benefits Analysis.....	30
Results and Recommendations	32
Results	32
Recommendation.....	33
Appendix A—Proforma	A1
Appendix B—Proforma Source and Derivation of Costs	B1
Appendix C—Proforma Computation Spreadsheets	C1
Appendix D—ECONPACK Economic Analysis Report	D1
Appendix E—Economic Analysis Source and Derivation of Costs	E1
Appendix F—Economic Analysis Computation Spreadsheets.....	F1
Appendix G—List of Contacts.....	G1

Appendix I—ReferencesH1

List of Figures

Figure 1: Existing Housing at Little Rock AFB, AR.....2

Figure 2: Economic Analysis Alternatives3

Figure 3: Economic Analysis Summary4

Figure 4: Existing Housing at Little Rock AFB, AR7

Figure 5: Geographic Potential for Privatization.....8

Figure 6: Proforma Criteria Results 10

Figure 7: Economic Analysis Project Definition Sheet..... 12

Figure 8: Economic Indicators (NPV) 15

Figure 9: Feasible and Infeasible Alternatives 16

Figure 10: Non-Monetary Benefit factors, Benefits to the Member..... 26

Figure 11: Non-Monetary Benefit Factors, Benefits to the Air Force 26

Figure 12: Cost/Benefit Ratio for each Alternative 30

Figure 13: Economic Analysis and Summary..... 32

Figure 14: ContactsG1

Executive Summary

This economic analysis is in conformance with SAF/FM guidance for preparing Housing Privatization Preliminary Economic Analyses. Structure and content of this economic analysis is intended to facilitate SAF/FM review as a Preliminary Economic Analysis.

DOD Housing Goal

The Department of Defense (DOD) has established a goal of modernizing all military family housing by 2010.

Objective

The project objective is to provide suitable housing for a combination of 1,535 enlisted and officer military members. The objective of this analysis is to determine the economic feasibility of privatizing family housing assets as a means of meeting the DoD goal. The analysis compares privatization to several other alternatives, including the status quo and different government construction alternatives. The analysis varies several cost factors, including Basic Allowance for Housing (BAH), utilities, impact aid, military construction (MILCON) costs, operations and maintenance (O&M) costs, manpower impacts, real estate values and project management costs.

The June 1999 *Housing Market Analysis* (HMA) identified the need to provide suitable housing for a combination of 1,535 enlisted and officer members at Little Rock AFB. Under privatization, housing will comply with the building standards of the local community. Under the government construction alternatives, housing will comply with military construction standards. These standards include, but are not limited to size, style, energy and water consumption.

Requirements

Little Rock AFB's goal is to provide safe, quality, affordable, well-maintained housing for their military families in a community where they will choose to live. According to the 1999 *Family Housing Master Plan*, base housing, summarized in Figure 1, is generally well-maintained; however, it is aging and in need of renovations.

Existing Inventory	Number of Units
a. East Housing Area	922
b. West Housing Area	117
c. South Housing Area	496
d. Total Existing Inventory (a+b+c)	1,535
e. Family Housing Requirement ¹	1,535
f. Surplus (d-f)	0
g. Units requiring Type One (Major) renovation	1,201
h. Units requiring Type Two (Minor) renovations	334

¹ Source: *Housing Market Analysis*, June 1999

Figure 1: Existing Housing at Little Rock AFB, AR

Note: HQ AETC and Base Leadership decided to base the housing requirements for Little Rock AFB on actual assignments rather than the HMA requirements. This resulted in more enlisted personnel being housed than what the HMA called for. We used the requirements that were identified in the HMA.

Alternatives

Figure 2 summarizes the alternatives evaluated in this economic analysis. The alternatives are described in greater detail in "Economic Analysis Overview".

Alternative	Variables
1. Status Quo	AF Retains Housing Units AF Retains GSHP AF Retains Utilities Tenant Surrenders BAH AF Pays Utilities AF Executes Only Funded MILCON
2. Privatization	Convey Housing Units GSHP obligation assumed by developer Convey Utilities from Housing Unit to the Main for Water and Sewer and to the Meter for Electric and Gas Member Receives BAH Member Pays Rent Equal to BAH less Utilities Allowance Member pays utilities (natural gas and electricity) Assets conveyed as a Debt Deal
3. Identical MILCON	AF Retains Housing AF Retains GSHP AF Retains Utilities Member Surrenders BAH AF Pays Utilities AF Executes Privatization Scope Using MILCON
4. Constrained MILCON	AF Retains Housing AF Retains GSHP AF Retains Utilities Member Surrenders BAH AF Pays Utilities AF Executes FHMP Scope Under MILCON
5. Current BAH	AF Convey Housing Units and Land Members Live Off-Base Member Receive Current BAH Rates Member Pays Market Rent Member Pays Utilities
6. Full BAH	AF Convey Housing Units and Land Members Live Off-Base Member Receive Current BAH Rates +23% (no out-of-pocket) Member Pays Market Rent Member Pays Utilities

Figure 2: Economic Analysis Alternatives

Special Issues

Little Rock AFB is currently studying the feasibility of privatizing the electric, natural gas, water and sanitary wastewater systems for the entire base, in a separate on-going Utilities Privatization analysis. Included in the Utilities Privatization analysis are those portions of the electric, water, and sanitary wastewater systems that serve the family housing areas; there is no natural gas service for family housing. This Economic Analysis was conducted independently of the Utilities Privatization analysis.

Under the Privatization alternative, the private developer will be responsible for providing utility services; water and sanitary wastewater service will be included with unit rent, and the military member will be

responsible for directly paying the electricity providers. The developer will not be responsible for maintaining utilities infrastructures within the housing areas, except for storm drains, but will maintain such things as roads, utilities billing and collection of payments from the residents. In the Status Quo, Identical MILCON, and Constrained MILCON alternatives, the Government will retain all utilities. However, in the Current BAH and Full BAH alternatives the utilities will be conveyed with the houses, under the assumption that the government will divest itself of housing.

HQ AETC and base leadership elected to include the storm sewer system in the housing privatization package to be conveyed to the Successful Offeror, along with the associated required improvement projects.

HQ AETC and base leadership elected to include the financial obligation for the Ground Source Heat Pumps (GSHP) in the housing privatization package.

Results

The economic analysis was performed using ECONPACK for Windows, an economic analysis software package developed by the US Army Corps of Engineers. Figure 3 summarizes economic indicators from the ECONPACK analysis.

Alternative ✓ = Recommended	Meets Goal, Objective and Requirements?	Net Present Value (NPV)	Non-Monetary Cost/Benefit ratio (\$M/score)
1. Status Quo	No. Does not achieve the 2010 DOD Housing Improvement goal of modernizing all military family housing by 2010	\$231,195,168	\$2.84
✓ 2. Privatization Option	Yes. Meets the DOD Housing Goal	\$354,021,912	\$4.72
3. Identical MILCON	Yes. Meets the DOD Housing Goal	\$423,551,404	\$5.26
4. Policy Constrained MILCON	Yes. Meets the DOD Housing Goal	\$332,512,059	\$4.37
5. Current BAH	No. Members would be expected to pay out-of-pocket expenses.	\$257,595,946	\$4.27
6. Full BAH	Yes. Would meet the 2010 DOD Housing Goal if BAH increased by 23%	\$308,285,809	\$4.88

Figure 3: Economic Analysis Summary

Taking into consideration only the alternatives meeting the DoD goal, objective and requirements (Privatization, Identical MILCON, Constrained MILCON and Full BAH), Full BAH is the least-cost alternative (i.e., lowest NPV) to the Government, followed by Policy Constrained MILCON, Privatization and Identical MILCON.

Sensitivity Analyses

Cost Sensitivity Analyses (CSA) were run to assess the impact of varying selected expense items over a specified range. For this analysis, BAH, MILCON and Routine O&M expense items were allowed to vary. The results of this sensitivity analysis show that an increase of about 24.69% or more in BAH will result in Identical MILCON having a NPV less than Privatization. A BAH increase of up to 24.69% is possible considering the Secretary of Defense's desire to increase Current BAH to Full BAH rates in order for military members to avoid out-of-pocket expenses. However, the windfall income clauses of privatization return substantial portions of such increased income to the government, so that actual results may not vary after all.

Non-Monetary Benefits

The Non-Monetary Benefits Analysis concluded that base personnel prefer the Status Quo alternative to other methods of achieving the 2010 DOD Housing Goal. Of the alternatives meeting the DoD goal, objective and requirements, Policy Constrained MILCON is the preferred, followed by Privatization, Identical MILCON and Full BAH.

Recommendation

The Economic Analysis concluded that four alternatives meeting the DoD goal, objective and requirements exist: Privatization, Identical MILCON, Constrained MILCON and Full BAH, although Full BAH meets goal only if BAH is raised by 24.69% so members will not have to pay out-of-pocket expenses. All four are also economically feasible.

Because it is unlikely that appropriations will be sufficient to fund either the Identical MILCON or Constrained MILCON alternative, neither of these alternatives is likely. The Non-Monetary Benefits analysis revealed a desire for the Air Force to maintain some measure of control over family housing.

HQ AETC and Base Leadership's recommendation is Privatization.

Some functional representation (e.g., legal, security police, financial, personnel, civil engineering, MWR, etc.) in the group, or providing input to the group, is recommended. At Little Rock AFB, inputs from four questionnaires were incorporated into the non-monetary benefits analysis.

The benefits are divided into two categories: member based benefits and Air Force based benefits. Each benefit is given a factor value from one (least important) to ten (most important). The computation spreadsheet normalizes the input values so that member benefits and Air Force benefits each have a maximum total factor value of 50 points. For each factor, the alternatives are given a score from 0% (does not achieve benefit) to 100% (completely achieves benefit). Each base develops factor point values for the member benefits and scores. Factor point values and scores for the Air Force benefits have already been input.

Appendix F, "Non-Monetary" tab shows detailed calculations for determining non-monetary benefits cost/benefit ratio. The cost/benefit ratio computes a weighted benefit or value, based on each alternative's net present value (NPV). The cost/benefit ratio is the NPV cost per benefit "point" for each alternative. Ordinarily, the alternative with the lowest cost/benefit ratio is the recommended alternative.

Results of Non-Monetary Benefits Analysis

Figure 12 summarizes the cost to benefits ratio for each alternative.

BENEFITS SUMMARY	ALTERNATIVES					
	STATUS QUO	PRIVAT.	IDENTICAL MILCON	POLICY CONST. MILCON	CURRENT BAH	FULL BAH
Benefits to Members	43.0	40.2	42.2	41.3	30.9	32.7
Benefits to USAF	38.4	34.8	38.3	34.8	29.5	30.5
Total Benefits Score	81.4	75.0	80.5	76.1	60.3	63.2
NPV (\$M)	\$231.2	\$354.0	\$423.6	\$332.5	\$257.6	\$308.3
Cost/Benefit Ratio	\$2.84	\$4.72	\$5.26	\$4.37	\$4.27	\$4.88

Figure 12: Cost/Benefit Ratio for each Alternative

The results of the benefits analysis show that, based on total benefits score alone, the Status Quo alternative provides the best non-monetary benefits for any of the feasible alternatives, according to the feedback from the base. The Identical MILCON alternative ranks second. The Privatization alternative ranks in fourth place.

Taking into consideration the cost/benefit ratio, which is the comparison of non-monetary benefits against each alternative's NPV, of the feasible alternatives (Privatization, Identical MILCON, Policy Constrained

MILCON, Full BAH), the Policy Constrained alternative provides the best cost to benefit ratio. The Privatization alternative provides the next best cost to benefit ratio, followed by the Identical MILCON alternative.

The Non-Monetary Benefits Analysis concluded that base personnel prefer the Status Quo alternative to other methods of achieving the 2010 DOD Housing Goal. Of the alternatives meeting the DoD goal, objective and requirements (Privatization, Identical MILCON, Policy Constrained MILCON, Full BAH), Policy Constrained MILCON is the preferred, followed by Privatization, Identical MILCON and Full BAH.

Results and Recommendations

Results

The economic analysis was performed using ECONPACK for Windows, an economic analysis software package developed by the US Army Corps of Engineers. Figure 3 summarizes economic indicators from the ECONPACK analysis.

Alternative ✓ = Recommended	Meets Goal, Objective and Requirements?	Net Present Value (NPV)	Non-Monetary Cost/Benefit ratio (\$M/score)
1. Status Quo	No. Does not achieve the 2010 DOD Housing Improvement goal of modernizing all military family housing by 2010	\$231,195,168	\$2.84
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6. Full BAH	Yes. Would meet the 2010 DOD Housing Goal if BAH increased by 23%	\$308,285,809	\$4.88

Figure 13: Economic Analysis and Summary

Taking into consideration only the alternatives meeting the DoD goal, objective and requirements (Privatization Identical MILCON, Constrained MILCON and Full BAH), Full BAH is the least-cost alternative (i.e., lowest NPV) to the Government, followed by Policy Constrained MILCON, Privatization and Identical MILCON.

Sensitivity Analyses

Cost Sensitivity Analyses (CSA) were run to assess the impact of varying selected expense items over a specified range. For this analysis, BAH, MILCON and Routine O&M expense items were allowed to vary. The CSA found that a BAH increase of 24.69% could make the Identical MILCON alternative more economically feasible than Privatization. However, the windfall income clauses of privatization return substantial portions of such increased income to the government, so that actual results may not vary after all.

Non-Monetary Benefits

The Non-Monetary Benefits Analysis concluded that base personnel *prefer the Status Quo alternative* to other methods of achieving the 2010 DOD Housing Goal. Of the alternatives meeting the DoD goal, objective and requirements, *Policy Constrained MILCON* is the preferred, followed by Privatization, Identical MILCON and Full BAH.

Recommendation

The Economic Analysis concluded that four alternatives meeting the DoD goal, objective and requirements exist: Privatization, Identical MILCON, Constrained MILCON and Full BAH, although Full BAH meets goals only if BAH is raised by 23% so members will not have to pay out-of-pocket expenses. All four are also economically feasible.

Because it is unlikely that appropriations will be sufficient to fund either the Identical MILCON or Constrained MILCON alternative, *neither of these alternatives is likely*. The Non-Monetary Benefits analysis revealed a *desire for the Air Force to maintain some measure of control over family housing*.

HQ AETC and Base Leadership's recommendation is Privatization.