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Cost Analysis within Strategic Stationing Studies: The European Infrastructure Consolidation (EIC)

ASMC PDI Orlando
June 3, 2016

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Topics

- Strategic stationing analysis and cost context

- Current cost models

- EIC application

Strategic Stationing Cost Analysis Context

- BRAC and EIC are Sequestered processes
  - "Trusted agents" are free to discuss possible closure and realignment scenarios amongst their group.
  - They rely on Service databases that provide facilities information and use data calls to confirm that information and fill in data gaps.

- COBRA
  - First four rounds of BRAC used **COBRA, Cost of Base Realignment Actions**, to add structure and comparable data fields to each BRAC action studied.
  - Ensures recommendations are analyzed on a level playing field.
  - BRAC commissions use the estimates to compare scenarios.

- BCAT: EIC used a scaled down version of COBRA to meet their cost-model requirements.

- Challenge: The comparative estimates are used as initial budget estimates.

Stationing Cost Concepts

- Supply-demand relationship drives all analysis
  - Supply – what the location has to offer
  - Demand – what the units need to complete their missions

- Multiple costs
  - Fixed – the cost if the location is open regardless of population changes
  - Variable – the cost given a change in population
  - Mission – the cost of operating a unit on an installation

- Timing is a factor
  - Implementation
    - Needed investment to complete a scenario
    - Transportation, MILCON, information technology, severance…
  - One-time – the cost for a stationing action that does not reoccur
  - Recurring – costs that repeat overtime
  - Steady state – costs after all implementation actions are completed

Cost and Benefit Trade-off

- Stationing analysis tries to minimize costs while maximizing benefits
- Costs
  - Financial costs (e.g., implementation and mission costs)
  - Other costs that impact units involved in a move (e.g., lost training, disruption, family considerations) or costs within the local area (e.g., environment, schools, transportation systems)
- Benefits
  - Lower operating costs
  - Greater military value based on supply-demand improvements or the capabilities that a location offers
  - Other (e.g., smaller inventory of installations and the ability to manage the inventory, consolidated training, joint opportunities)

Strategic Stationing Analysis Leads to "Real Savings"

EIC Actions w/AF Ownership or Equity	(2015-2021) O&M / MILCON	Est. Total Cost	Est. Annual Savings
------	$--	$--	$--
Total	**$406M / $657M**	**$1.1B**	**$283M**

Scenario	Description of Scenario	One Time Cost	Annual Recurring Savings	Payback Period	6-yr Savings (Cost)	20-yr NPV (Cost)
--	-----	$--	$--	--	$--	$--
	TOTALS	**$57.87**	**$57.63**		**$263.88**	**$960.64**

Scenario	Description of Scenario	One Time Cost	Annual Recurring Savings	Payback Period	5-yr Savings (Cost)	20-yr NPV (Cost)
--	--	$--	$--	--	$--	$--
	TOTALS	**$300.0**	**$105.36**		**$26.58**	**$1,339.90**

- Greatest potential savings from scenarios with a closure (personnel, sustainment)
- BRAC 2005: $3.8B savings a year (GAO 2012)

Cost Model History (COBRA)

- **Before 2001 – DOS based system**
- **2001 – UCRM for the QDR**
  - Center for Army Analysis review
  - Moved to Windows environment
  - Revised algorithms
- **2003 – BRAC 2005**
  - Revised algorithms
  - Verified and validated model inputs / outputs
- **2013 – BCAT for EIC**
  - Used a "simplified" COBRA
  - Excel based
  - Updated for EIC application

- **2016 – Cost comparison analysis for strategic stationing analyses**
  - Define requirements
  - Improve analytics
  - Revisit algorithms and address shortcomings
- **20?? – BRAC 20??**
  - Update COBRA
  - Use the model for strategic studies and the next BRAC

Implementing a COBRA like Tool in the EIC: BCAT

EIC analytical process

BCAT

Figure from BCAT User's Manual
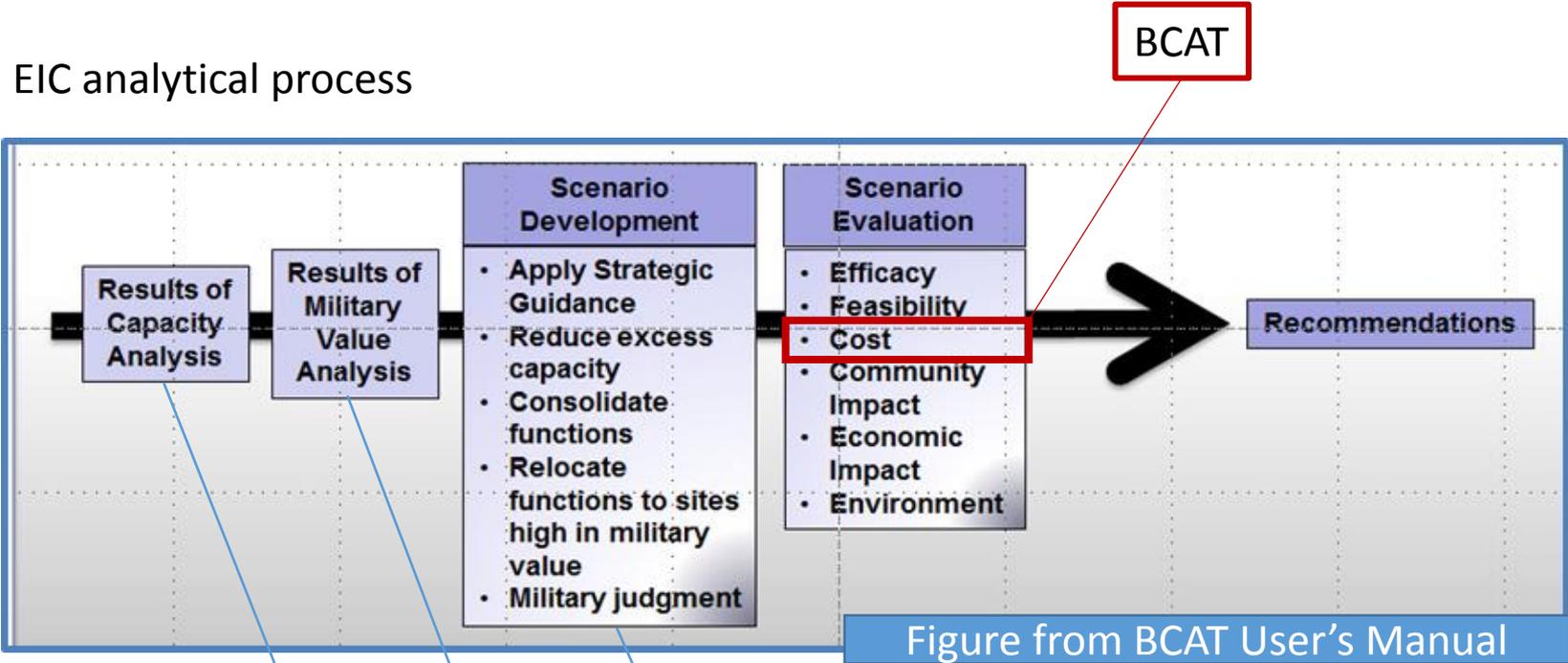
A BRAC like process

COBRA
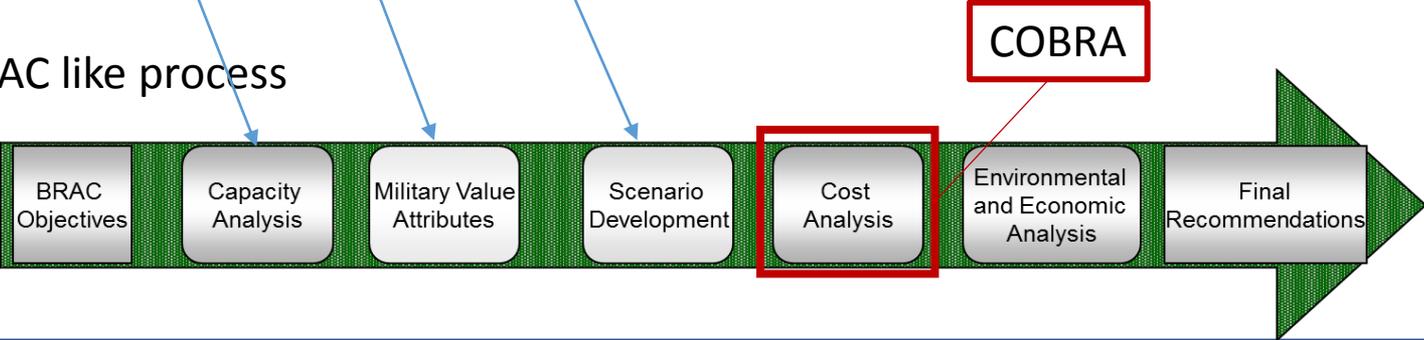
Costs Included Within EIC Using BCAT

Figure from BCAT User's Manual
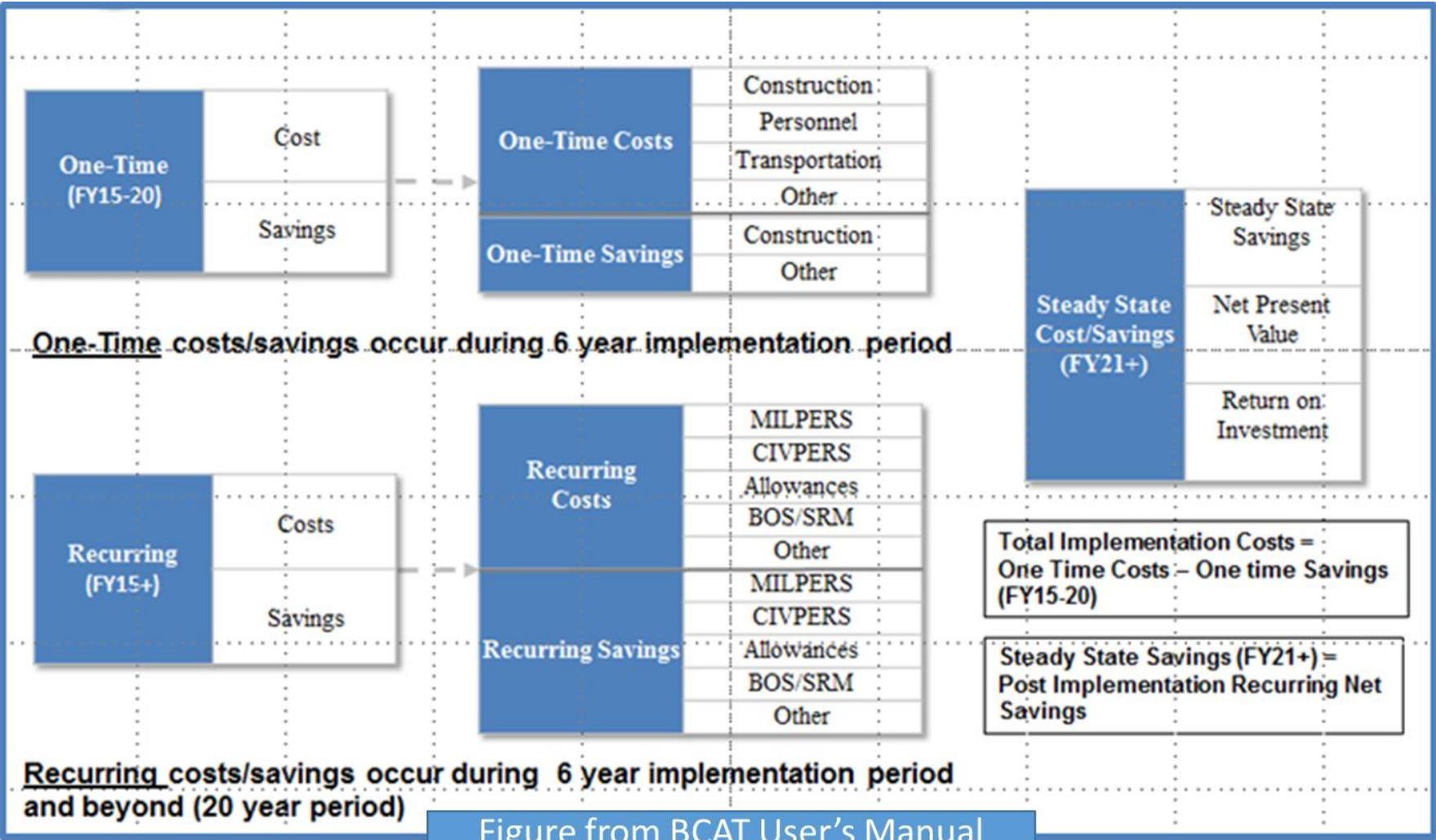
MILCON is Usually the Largest Cost
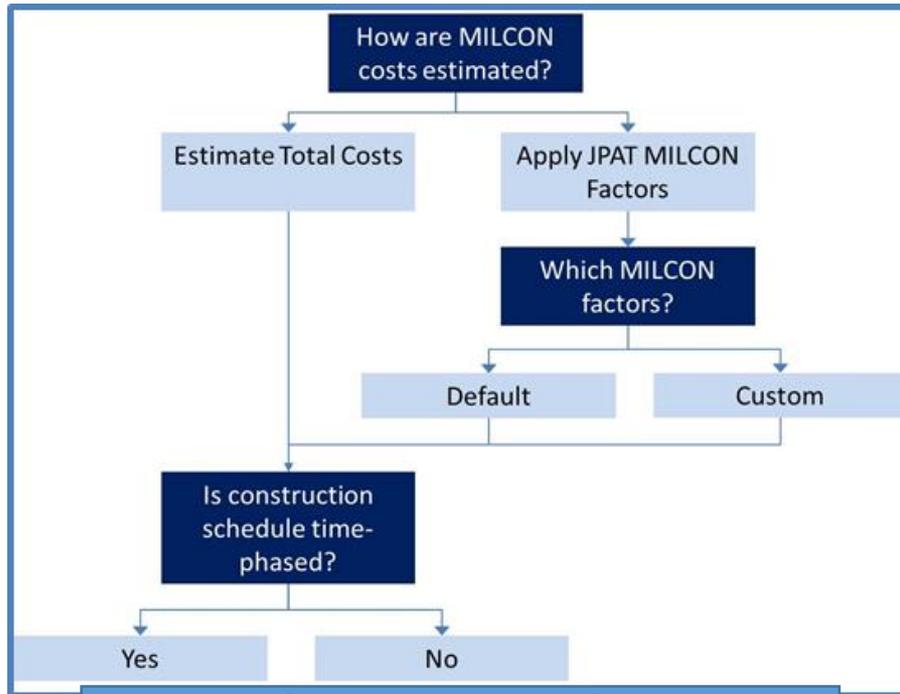
Figure from BCAT User's Manual

- Users determine MILCON cost
  - From prior estimate
  - Or use JPAT process

- EIC standard factors
  - Design rate: 4%
  - Supporting facilities (site preparation, IT, etc.) rate: 33%
  - Supervision, inspection, and overhead (SIOH): 5.7%
  - Contingency: 5%

- Users select new construction or renovation at given quality for existing facilities.

- User assumes a timing to distribute MILCON costs.

Other Costs

- BOS: change in populations drives a change in BOS.
- Personnel actions: one time costs (severance, relocation) and recurring (location, salaries)
- IT: marginal for person ($1250) and incremental ($87,000 per 100 relocated)
- Sustainment:
  - Savings due to closure
  - New costs due to MILCON
- Transportation costs for relocated personnel and equipment
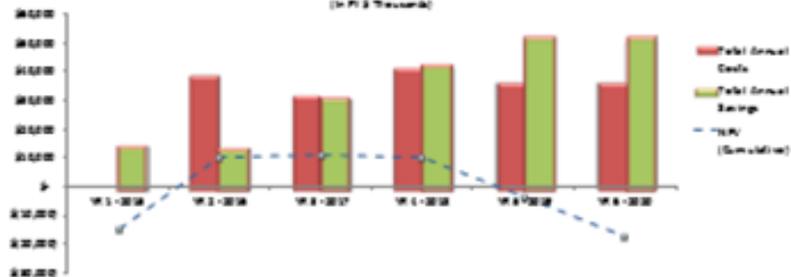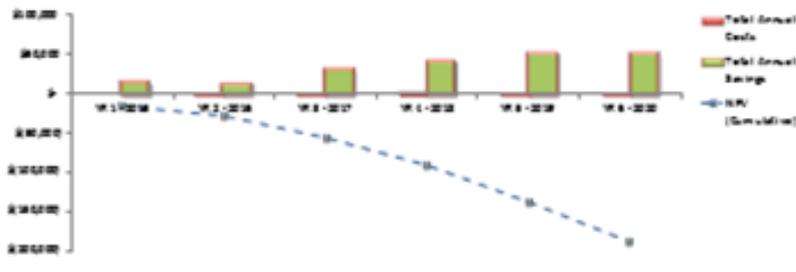
Outputs

- BCAT (COBRA) summarizes costs and savings estimates

- Produces graphics from the combined, receiving or losing installations' perspective

- Same information in tables

Figures from BCAT User's Manual

COBRA and EIC Cost Lessons Learned

Lessons Learned

- Expansion needed in the areas of **project management, construction, information technology, and environment**.

- Does not include cost **uncertainty** or risk considerations.

- Cost and payback estimation capability adequate for comparing alternative courses of action, but **inadequate for program and budget levels of implementation planning**.

Recommendations

- Expand cost factors in cost models, especially in the areas of project management, construction, information technology, and environment.

- Include cost uncertainty and cost adjustments based on a risk analysis.

- Reconsider what and how scenario financials should be calculated.

- Redesign output to facilitate the transition from estimate to execution level budget and business plan.

We are working on it!