



Department of Defense Military Health System (DOD MHS)

GreenGov Symposium

Economic Value of Green Facilities

November 02, 2011



Report Documentation Page

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Introduction – Many Delivery Platforms





Introduction – Many Locations

Pick a location...

DoD's MHS has likely provided care there:

- Direct Patient Care of Service Members & Families
- Veterans
- Humanitarian Aid
- Disaster Relief
- Infectious Disease Response
- War Zone Casualty Care
- Etc.

DoD Military Health System (MHS)

- Approximately 77million GSF of facilities:
 - Hospital Facilities – 59
 - Medical Clinic Facilities – 364
 - Dental Clinic Facilities – 282
 - Veterinary Facilities – 288
 - Multiple Medical Research Laboratories



DoD Strategic Sustainability Performance Plan (SSPP)

“Sustainability” and “sustainable” mean to create and maintain conditions, under which humans and nature can exist in productive harmony, that permit fulfilling the social, economic, and other requirements of present and future generations of Americans.

— *Executive Orders 13423 & 13514*

DoD Priorities:

1. Energy and Reliance on Fossil Fuels
2. Chemicals of Environmental Concern
3. Water Resources Management
4. Maintaining Readiness in the Face of Climate Change



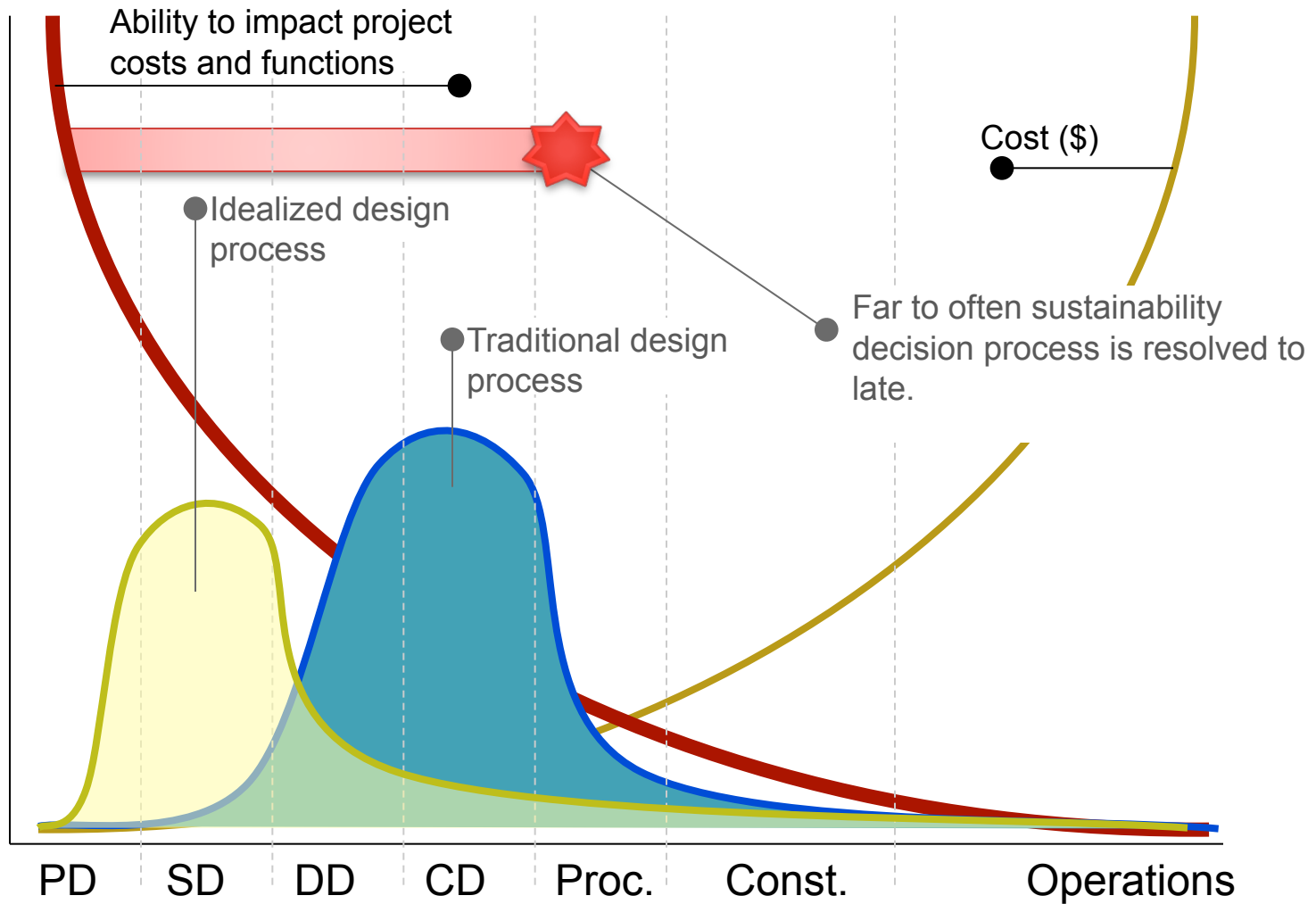
DoD Energy Security

“Energy security for the Department means having assured access to reliable supplies of energy and the ability to protect and deliver sufficient energy to meet operational needs. Energy efficiency can serve as a force multiplier, because it increases the range and endurance of forces in the field and can reduce the number of combat forces diverted to protect energy supply lines, which are vulnerable to both asymmetric and conventional attacks and disruptions.”

— *DoD Quadrennial Defense Review, 2010*



Making decisions sooner = higher probability of good implementation.





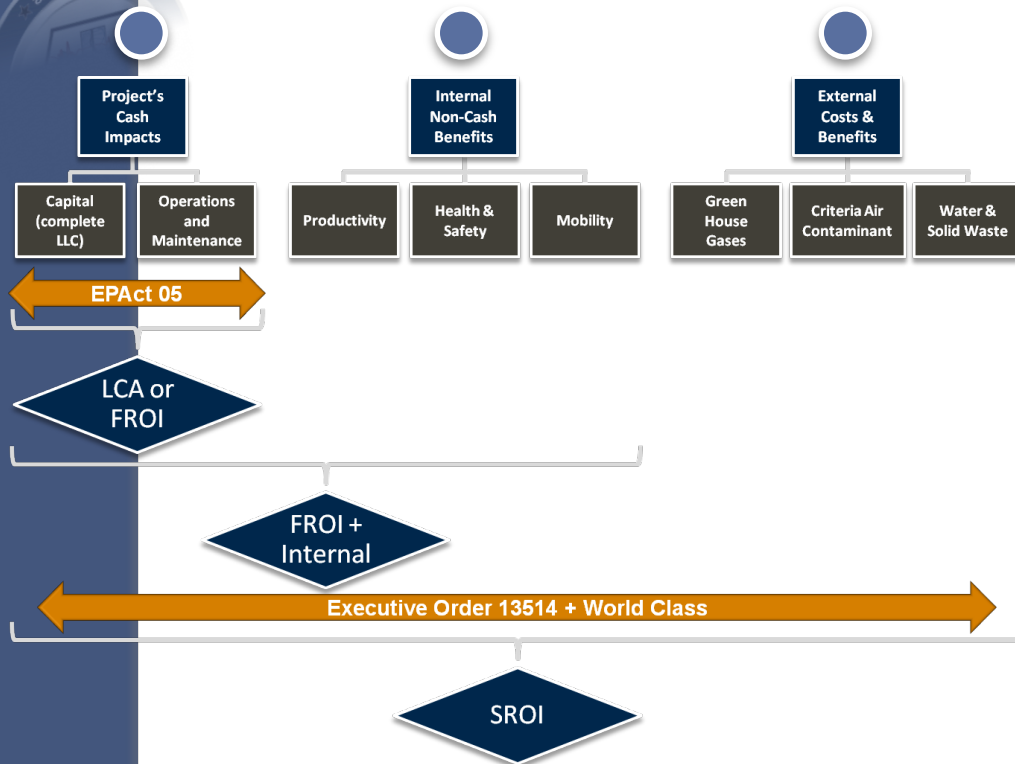
Bringing the discussion to the board room. Using the fundamentals of economics to bring transparency, objectivity, scalability to the table plus addressing variability.

HOW DO WE HAVE AN EFFECTIVE DIALOGUE?



SROI Methodology Applied

Enhanced LCCA w/Risk Analysis



Three Primary Perspectives

- Project Cash Impacts
- Internal Non-Cash Benefits
- External Cash & Benefits

Pilot Projects

- Fort Belvoir Community Hospital
- USAG Humphreys in Korea
- Fort Bliss Replacement Hospital





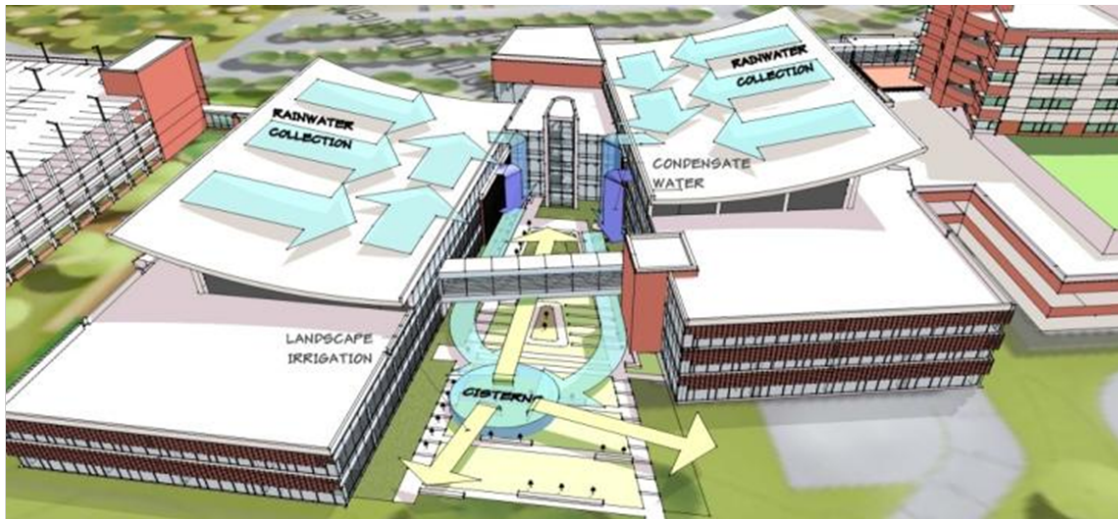
Water Efficiency

Rainwater Harvesting & Condensate Collection Fort Belvoir Community Hospital

Great idea and intent, but how do we evaluate if it makes sense from a facility life cycle management (FLCM) perspective?

Monetizing the attributes of the proposal

- Project Cash Impacts
- Internal Non-Cash Benefits
- External Cash & Benefits



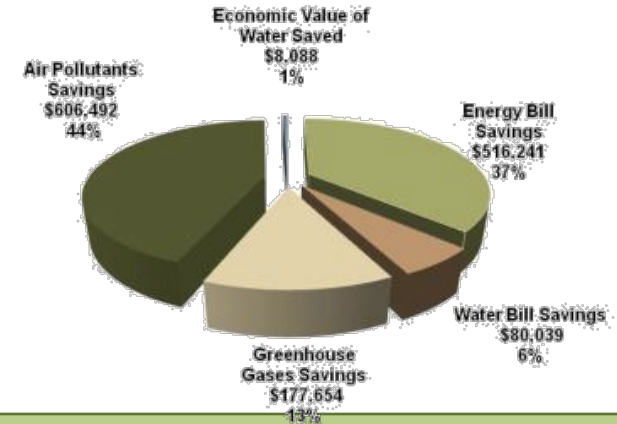
Irrigation	Irrigation Demand	Inflow	Savings
Permanent Irrigation (after first 2 years)	867, 444 gal	1, 640, 602 gal	100%

Compliments of HDR, Inc.



SROI Results

Fort Belvoir Community Hospital



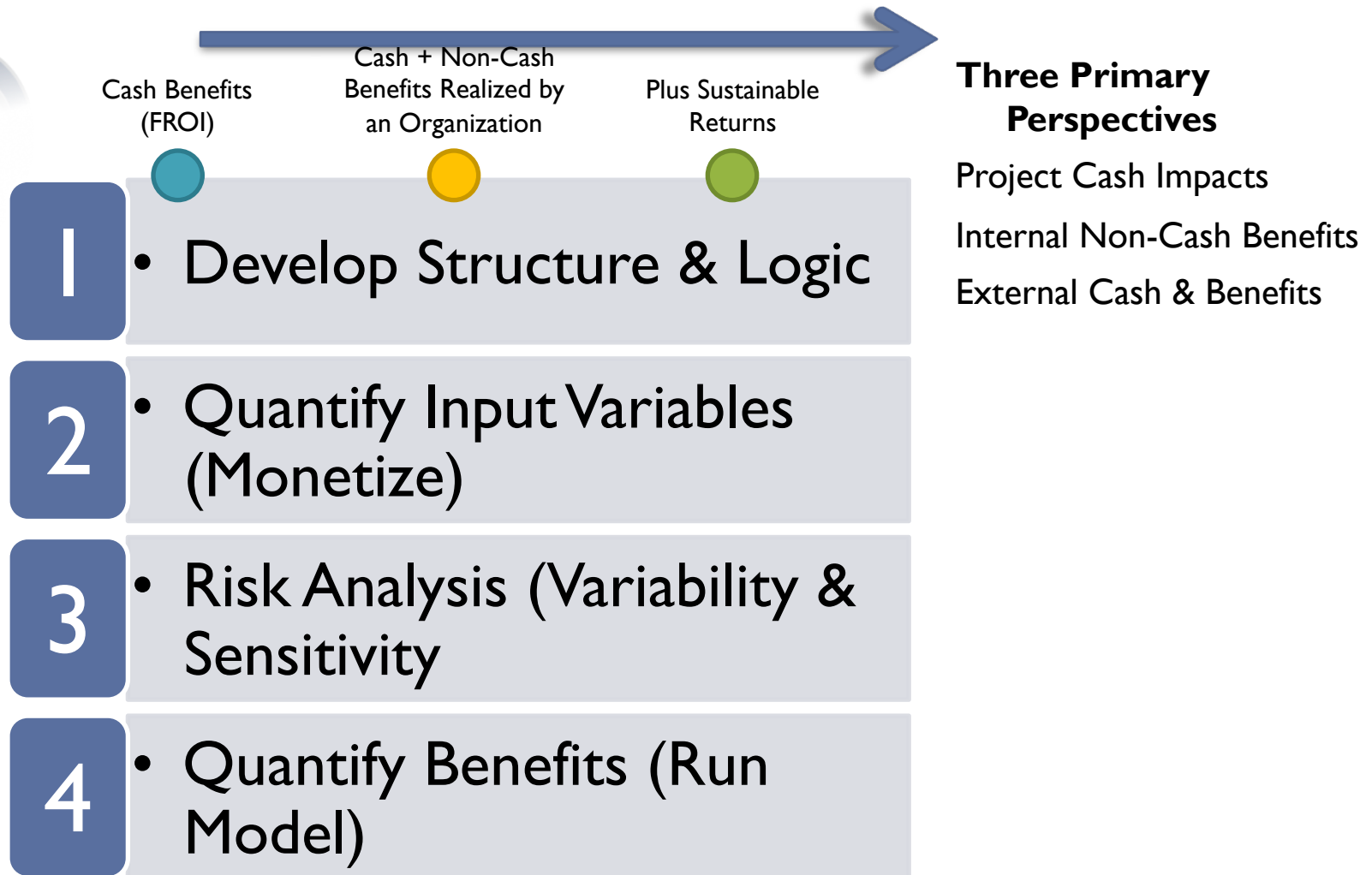
Metrics in (\$000 USD)

SROI	Current Design	Alternative	Notes
Annual Value of Benefits	\$1,284,097	\$1,388,514	The total value of the benefits in one year
<i>Energy Reduction</i>	\$474,470	\$516,241	Cash benefit
<i>Water Reduction</i>	\$80,039	\$80,039	Cash benefit
<i>Greenhouse Gases Savings</i>	\$163,461	\$177,654	Non-cash benefit
<i>Air Pollutants Savings</i>	\$558,039	\$606,492	Non-cash benefit
<i>Savings From Reduced Water Use</i>	\$8,088	\$8,088	Non-cash benefit
Net Present Value	\$15,773,620	\$13,798,340	PV Benefits / PV All Costs
Return on Investment	39.3%	18.0%	Average Rate of Return on Capital Investment
Discounted Payback Period	4.6	7.7	Time in years + discounted cash flow
Internal Rate of Return (%)	31.0%	18.1%	Discount rate making NPV = 0
Benefit to Cost Ratio	4.7	2.8	PV Benefits / PV Costs

FROI	Current Design	Alternative	Notes
Annual Value of Benefits	\$554,870	\$596,193	The total value of the benefits in first year
Net Present Value	\$4,353,935	\$1,391,047	PV Benefits / PV All Costs
Return on Investment	15.9%	5.5%	Average Rate of Return on Capital Investment
Discounted Payback Period	12.9	25.0	Time in years to + positive discounted cash flow
Internal Rate of Return (%)	14.2%	6.8%	Discount rate making NPV = 0
Benefit to Cost Ratio	2.0	1.2	PV Benefits / PV Costs



Three Perspectives Analyzed





Analysis Results

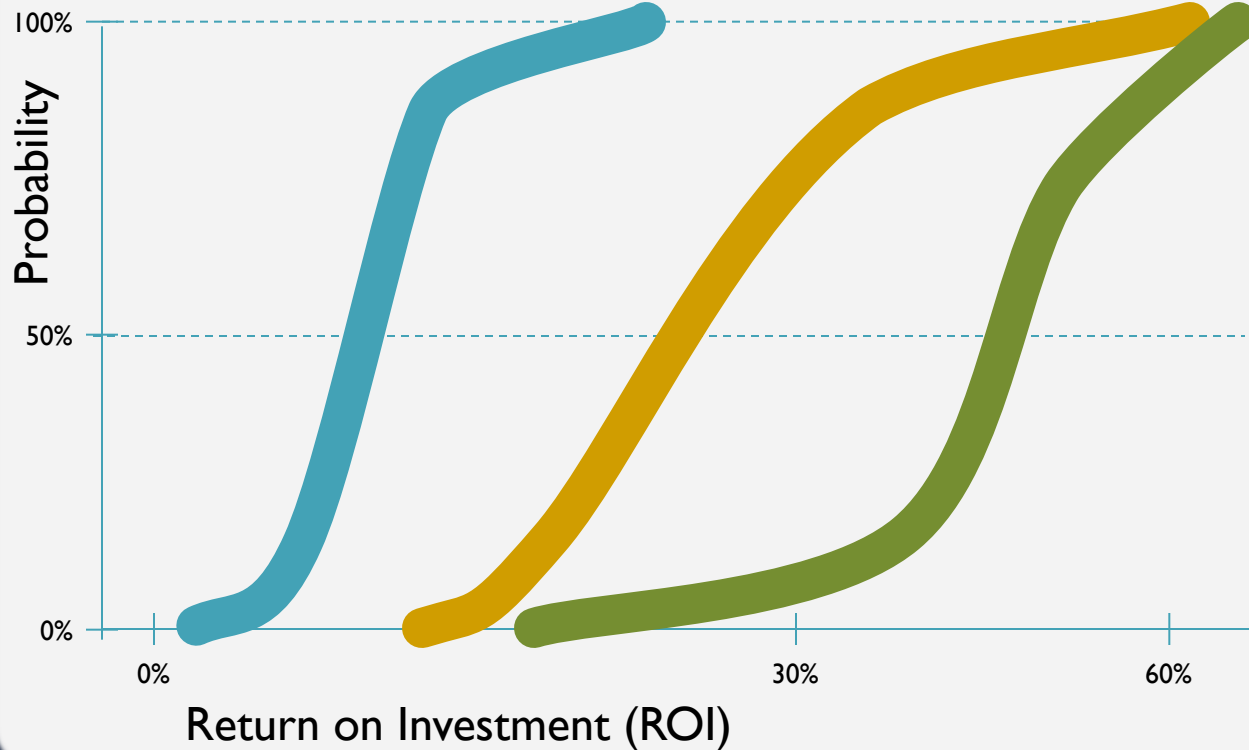
Cash Benefits
(FROI)



Cash + Non-Cash
Benefits Realized by
an Organization



Plus Sustainable
Returns



✓ Monetizing the variables provides ROI for the three perspectives

✓ Analyzing the potential variability of the input variables yields probability to address risk and identify sensitivity of your results to changes in key variables