

Army Sustainability Committee (ASC)  
Meeting Minutes

26 April 2007

**Welcome and Opening Remarks**

COL Phillips (ODEP) began by welcoming members to the meeting and reviewing the agenda (Enclosure 1). He noted that this would be his last official ASC meeting as Chair. He will be reassigned to HQ, NGB-ARNG-ARE on 15 Jun 07, replacing COL Jerry Walter. His farewell luncheon will be held on 21 Jun 07, and he invited everyone to attend. He emphasized that it has been good working with everyone and that we have done great things together. MAJ Gregg Hadlock will most likely attend future meetings on his behalf. Doug Warnock (ODEP) asked everyone to mark the attendance sheet (Enclosure 2), and make necessary corrections to the listed contact information if needed.

**Review 27 February 2007 Meeting Minutes**

COL Phillips next asked the group if any changes were needed to the minutes from the 27 Feb 07 meeting. No one had any comments at this time, so he asked that any changes be forwarded to either Doug Warnock or Chris Werle (LMI) within the next week. LMI will ensure that the final minutes are posted to the Army sustainability website.

At this point, COL Phillips introduced MAJ Chris Tatian, who recently came to ODEP from a tour in Afghanistan. MAJ Tatian will replace LTC Mike Speth (ODEP) as ACUB Program Manager. LTC Speth will be reassigned as the Military Assistant to Mr. Tad Davis, DASA (ESOH). COL Phillips also introduced Kelly Dilks (DAIM-FAF), who will be representing the ACSIM Facilities Division, and who will also serve on the Army's internal sustainability facilitation team.

Other ASC members then updated the group as listed on the agenda: old business, new business, and wrap-up.

**Old Business**

**Darden IV Update**

John Fittipaldi (AEPI) provided a short update on the status of Darden IV planning. The next session will be held 11-15 June 2007 at Carlisle Barracks and will target Garrison Commanders (GCs) (NOTE: subsequent to the meeting the course was postponed until next Fall due to VCSA travel/training restrictions). He noted that Karen Baker (AEPI) wanted to emphasize that all nominations for attendance need to go through COL Phillips for review. Given the recent VCSA supplemental funding memo and related travel restrictions, the travel issue is being worked by Michael Cain (Dir, AEPI) and Mr. Davis. COL Phillips noted that most of Darden IV will be centrally funded. The

only expenses participants have are their round trip travel and one meal per day. Mr. Davis has indicated that he will try to centrally fund that as well; otherwise installations may not be able to attend.

COL Phillips stressed that we want to get IMCOM, NGB, AMC, special installations, etc. to participate via GC, Deputy GC, and/or PAIO (Plans, Analysis, and Integration Office) attendance. He has briefed LTG Robert Wilson (ACSIM and Cdr, IMCOM), BG(P) John Macdonald (Deputy Cdr, IMCOM), and Mr. Phil Sakowitz (Executive Director, IMCOM), and all three are very supportive. COL Phillips also intends to brief IMCOM regional planning, operations, and facilities staff. Memos will go out to all commands soon so they can begin the process of getting the workshop scheduled on various calendars. The curriculum for the course will include relevant practical exercises so that attendees gain an understanding of what an installation-level sustainability workshop is like. He also wants to ensure we share lessons learned from the sustainability workshops that have already been conducted.

UVA will post the schedule and curriculum on their website in the near future. It will focus on sustainability from various perspectives (e.g., academia, industry) and scheduled speakers will include several heavy hitters in the sustainability arena. The course has a total of 45 slots available, which have already been allocated by command.

### **Strategic Plan Update**

John then updated the ASC on the status of the ASE Strategic Plan. A formal SECARMY memo is currently being staffed. The memo will designate the ASA (I&E) as proponent for the strategic plan, and will also state that EO 13423 requirements are to be integrated with the plan. John emphasized that AEPI has already completed a crosswalk between the EO and strategic plan, and the strategic plan will be the vehicle for implementing the EO. Once the SECARMY memo is signed, the ASA (I&E) will have 60 days to formally issue the strategic plan (currently planned for release by Memorial Day). A team will be established to oversee implementation and manage/track goals, objectives, etc.

Anne Johnson (OCPA/PAO) also noted that her office has developed a Strategic Communication Plan to help inform stakeholders and other interested parties about the strategic plan. The Director of the Army Staff authorized development of the communication plan. It is currently undergoing steering committee review, and will probably need some minor revisions to the events matrix (most of the events currently focus on Mr. Davis only). Implementation of the communication plan will leverage the Congressional angle to see how it can be integrated with what is being done on Capital Hill.

### **Sustainability Workshops Update**

COL Phillips updated the group on the status of installation sustainability workshops. He briefed BG(P) Macdonald and Mr. Sakowitz on 4 Apr 07 on installation sustainability and both were very supportive. V.J. Abdo from IMCOM Plans and Operations and Debbie Potter from the Installation Support Office also attended. During the briefing he

laid out a general timeline, what they have done, how they are going forward, and emphasized how BG(P) Macdonald can help. He stressed that with the IMCOM PARO and IMCOM-Europe workshops sustainability has now gone world-wide. Also, with PAARNG participation it has also gone Army-wide. He noted that PAARNG will include all ARNG facilities in the State. Dr. College (DACSIM) is already on board with resourcing the workshops and will build funding into the FY10-15 POM.

Looking at outcomes from the senior leadership meetings, BG(P) Macdonald told IMCOM Plans and Operations to develop a "1 to n" list of installations that will complete sustainability plans, and across IMCOM FY08 will be designated the Year of Planning (FY07 is designated the Year of Manpower). COL Phillips asked BG(P) Macdonald to include installation sustainability planning in his Command Bi-Weekly Updates, as well as in the Pre-Command Course. COL Phillips also briefed LTG Wilson on 23 Apr 07, and he was equally supportive of the effort. He also agreed that sustainability should be included in both the Garrison Command and Pre-Command courses. COL Phillips also wants to brief AMC G-9 (installation services), and the HQ, USACE installation services and support staff.

Overall, we are doing a good job of working Army leaders and installations into the workshops. Next we need to get the Regions on board. The NGB-ARNG already has NC, TX, and CA wanting to participate. Hopefully PA will become a model for sustainability planning for large states. We will also want to develop a model for small and medium states. The PAARNG workshops start 30-31 May 07.

Workshops for USAG-HI are currently underway and will be doing the planning and goal setting workshop the same week as JSEM (week of 21 May 07). There is a lot of political sensitivity in HI given the pending lawsuits against the Army. We are working the stakeholder piece. We are also gearing up to start USAG Wiesbaden (FRG), and IMCOM wants to do Alaska next. Anniston Army Depot will also participate but had to delay start up because of its heavy war support workload. Letterkenny Army Depot will conduct its scoping meeting on 8 May 07, and Fort Detrick is also scheduled to start soon.

Jim Ellor (ASA (ALT)) asked if we can get more detail on the content of the sustainability workshops. COL Phillips said that most of the workshops are done in the form of briefings. AMC can send people to the scheduled workshops to participate and learn more about the process. He also noted that Phil Jessup (IMCOM) helped develop the sustainability planning model and has some great briefings on it. Also, the guide to building a sustainable installation in 25 years or less is also available on the sustainability website. The guide has everything you need to develop an installation sustainability plan, but you still need a good facilitation team to help do it right. Doug Warnock indicated that he will include Jim Ellor when he briefs Joel Hager at AMC.

On a related note, COL Phillips stated that when he briefs LTG Wilson and BG(P) Macdonald on the new EO 13423 and EMS requirements, he will probably be required to use EMS to implement cross-functional sustainability. One challenge in this area will be to somehow link EMS to ARPIC, SMS, and other metrics the Army already uses. COL Phillips pointed out that many see EMS as yet another rock in their rucksack that they must carry. There is also concern over the ASA (I&E) having proponentcy for the

new EO because it cuts across energy, fleet transportation, etc. and facilities is a key player.

## **New Business**

### **Sustainability Analysis Framework and Analytic Model Presentation**

David Eady (CTC/NDCEE) briefed the committee on the Sustainability Analysis Framework and Analytic Model that the National Defense Center for Environmental Excellence (NDCEE) is developing for the Army Environmental Policy Institute (AEPI) (Enclosure 3). Per a written summary provided by Mr. Eady, the framework is designed to guide planners/decision-makers through an intuitive and systematic evaluation of investment opportunities with consideration of operational, environmental, social and financial aspects of options under consideration.

The analytic model utilizes existing methods such as life-cycle costing (LCC), life-cycle assessment (LCA), and multi-criteria decision analysis (MCDA) in a robust analysis against well-defined and aligned evaluative criteria. It illustrates how results can be normalized against performance objectives and criteria can be weighted (using an Analytical Hierarchy Process) to reflect relative importance assigned by stakeholders and/or subject-matter experts. In one example Mr. Eady illustrated how a system map was developed for providing potable water to Soldiers in Iraq. The resulting analysis showed that it was more efficient and cost effective to install six water processing/bottling plants in Iraq, rather than continuing to rely on alternative sources such as commercial bottled water, tap water, and/or reverse osmosis production systems.

As a next step, Mr. Eady will be demonstrating the framework in an assessment of alternative means of powering buses used at Fort Jackson for Soldier/Recruit transport. Specifically, he will be comparing the baseline (diesel engine powered buses) with fuel cell powered buses. The final report on the demonstration is scheduled to be available this summer.

During the presentation, LTC Mike Speth (ODEP) asked how you determine what you are going to assess. Installations develop sustainability goals, and we need to evaluate and assess them in order to come up with a solution. Mr. Eady indicated that the model assumes you have already decided what you want to work on before applying it. Kelly Dilks asked how you ensure there are no negative impacts on Soldiers. Dave felt that aspect is covered in the criteria matrix (which will be detailed in the final report). COL Phillips asked if the model could help us to complete a business case analysis in terms of the amount we might be investing in a solution and the amount of savings we can expect. This would help the Army leadership develop sound policies.

### **Review of ASC Charter and Accomplishments**

COL Phillips began the discussion by reiterating that the current ASC Charter is valid through November 2007, hence we will want to have it extended. He feels we can easily justify an extension because the good work we are doing is really just getting

started. Also, Mr. Davis has indicated that he wants to use the ASC to help move sustainability along.

COL Phillips also noted that Mr. Danner from the U.S. Army Engineer School (USAES) has approached COL O'Keefe (Cdr, AEC) and Debbie Potter (Chief, AEC Installation Support Office) about convening an SES/GO level committee on sustainability, possibly something similar in organization and function to the Senior Readiness Oversight Council (SROC). COL O'Keefe suggested to Mr. Danner that he meet with Mr. Davis and Richard Murphy (ODASA (ESOH)) to discuss the proposal further. Richard Murphy indicated that the ASC could become a Working Integrated Process Team (WIPT) under the SROC.

COL Phillips said that the bottom line is that we need to put our heads together on this now. We don't want to have two separate committees working on similar issues without having their efforts integrated. Perhaps we need to form an ASC working group or subcommittee that would evaluate options and come back with recommendations for how to proceed. Dave Lyon (G-4) pointed out that in the past we have formed many SES/GO level committees, but at that level they rarely have had time to meet, essentially rendering them ineffective. COL Phillips agreed with this assessment, and suggested that perhaps we just need to force the rotation of ASC Chairs. As another alternative, we might just have USAES join the ASC, which does meet regularly and has been very successful to date. USAES would bring more of an operational perspective to the ASC, which would then be a more effective vehicle for change.

COL Phillips decided that we should ask for volunteers to form a working group to review and update the Charter and prepare a formal request for extension. In updating the Charter, we should consider adding a provision to have a rotating Chair and/or Co-Chair (the current Charter stipulates that the ASC will be Co-Chaired by the ODEP Sustainability Division Chief and DASA (ESOH) Assistant for Sustainability); expanding membership to include USAES, other ARSTAF agencies, etc.; perhaps designating a Plans and Operations lead; and addressing how we might motivate existing members to more actively participate. COL Phillips also asked Richard Murphy to talk to Mr. Davis about what his intent is so that we can also incorporate that into the revised Charter.

Doug Warnock ended the discussion by indicating he would send out an email asking for volunteers to participate on the working group to review and update the Charter and prepare written justification for the extension. Richard Murphy noted that he is confident that Mr. Davis will fully support an extension.

## **Awards**

COL Phillips led a brief discussion of recent awards garnered by the Army. They included a White House Closing the Circle Award in the "Sowing the Seeds of Change" category. This category has not been used very often, being reserved for agencies that do something so dramatic they are perceived as leading the way. The Army won this award specifically for developing the Army Strategy for the Environment and for its related efforts to integrate sustainability across the Army. The award will be presented on 12 Jun 07 at the White House. The Fort Hood recycling team also won an award.

In related news, the Army Sustainability Video won two awards. One was a Platinum Aurora Award for Best in Show. The Aurora Awards is an international competition designed to recognize excellence in the film and video industries. It specifically targets products, programs and commercials that would not normally have the opportunity to compete on a national level, by focusing on non-national commercials, regional or special interest entertainment and corporate sponsored film and video. Entries have come from across the US, and abroad, such as Russia, Denmark, Hong Kong, Germany, Australia, Mexico, etc.

The other was a Silver Telly Award. The Telly Awards recognize distinction in creative work, honoring outstanding local and regional television commercials and productions, as well as non-broadcast video productions. In each category, there can be multiple winners (Silver) and finalists (Bronze). There is no stated limit to the number of winners or finalists in any given category, but official documentation provided to winners indicates that 7-10% of the 13,000 international entries receive Silver Telly Awards annually.

### **Wrap-up and Next Meeting**

COL Phillips thanked the attendees for their participation and reminded everyone that the next meeting will be held on 28 Jun 07, from 1300-1500 in the same building location (Presidential Towers) with the room number to be determined.

Before COL Phillips dismissed the group, Richard Murphy wanted to bring up the funding issue one more time. He pointed out that some of the work done during installation visits results in sustainability projects. One thing we need to do is make sure our funding policies support the effort. The clear, brutal reality is that ODEP policy for funding does not have the flexibility needed to fund the sustainability projects we should be doing. Richard favors going to some sort of hybrid sustainability MDEP. To do this we will have to revise the MDEP descriptions for environment and create sustainability MDEP. This will enable us to get beyond funding only what is compliance driven, which is basically what we are doing now.

COL Phillips said that we should make this an agenda item for the next meeting. The agenda should also include an update on the Charter and where we are going with it.

There being no further business, the meeting adjourned at 1500.

Enclosures:

- 1 – Agenda
- 2 – Attendees
- 3 – Sustainability Analysis Framework Presentation

## Enclosure 1 – Agenda

Army Sustainability Committee Meeting Agenda  
ODEP Conference Room PT 9300 (9<sup>th</sup> Floor)  
Presidential Towers, Crystal City, VA

Thursday, 26 April 2007  
1300-1500 hrs

Call in # 410-436-1000 (Conference Code 0981)

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1300 – 1305	Welcome/Opening Remarks	COL Phillips
1305 – 1310	Review February 2007 Meeting Minutes	COL Phillips/All
1310 – 1350	Old Business	
	a. Darden IV Update	John Fittipaldi
	b. Strategic Plan for Army Sustainability Update	John Fittipaldi
	c. Sustainability Workshops Update	COL Phillips
	d. Other	COL Phillips/All
1350 – 1450	New Business	
	a. Sustainability Analysis Framework and Analytic Model	David Eady/CTC
	b. Review of ASC Charter & Accomplishments	COL Phillips/All
	c. Awards	COL Phillips
	d. Other	COL Phillips/All
1450 – 1500	Wrap-up, assign tasks/schedule, and set next meeting date	COL Phillips

The purposes of this meeting are to:

- 1) update the ASC on Darden IV status;
- 2) update the ASC on the status of the Strategic Plan;
- 3) update the ASC on the upcoming sustainability workshops;
- 4) brief the ASC on the SAT framework report;
- 5) discuss ASC accomplishments to date and charter revision requirements;
- 6) identify further tasks the ASC should undertake in support of installation sustainability and assign responsibility for achieving them.

**Next ASC Meeting Thu, 28 June 2007**

**Enclosure 2 - ASC Meeting Attendees (26 Apr 07)**

	<b>Name</b>	<b>Organization</b>	<b>Phone</b>	<b>Email address</b>
	Baker, Karen	AEPI	703-604-2300	Karen.baker@us.army.mil
	Breitenfeldt, Rick	NGB	703-607-2575	Rick.Breitenfeldt@ngb.army.mil
	Brewer, Greg	ACSIM-MD	703-601-2541	gregory.brewer@hqda.army.mil
	Columbus, Philip R.	ACSIM-FDF-F	703-604-2470	Philip.r.comumbus@us.army.mil
	Cushman, George	ACSIM-ODEP	703-601-1961	Georgec@hqda.army.mil
	Dagovitz, Rachel	IMCOM-ISO	703-602-3382	Rachel.dagovitz@hqda.army.mil
<b>X</b>	Delaney, Thomas	CTC/NDCEE	703-310-5676	delaneyt@ctc.com
<b>X</b>	Eady, David	CTC/NDCEE	678-570-9030	eadyd@ctc.com
<b>X</b>	Dilks, Kelly	DAIM-FDF	703-601-0511	Kelly.dilks@hqda.army.mil
<b>X</b>	Ellor, Jim	ASA(ALT) SAAL-PE	703-806-9237	James.a.ellor@us.army.mil
	Engbert, Edward	USAEC (SFIM-AEC-AT)	410-436-6866	Edward.engbert@us.army.mil
	Evans, George	SAAL-PE	703-604-7029	George.evans@saalt.army.mil
	Evenstad, Kristin	G-3 (DAMO-TRS)	703-692-6427	Kristin.evenstad@hqda.army.mil
<b>X</b>	Fittipaldi, John	AEPI	703-604-2307	John.Fittipaldi@hqda.army.mil
<b>X</b>	Foltz, Stuart	ERDC-CERL		
	Funderburg, Terry	HQ, AMC	703-806-8723	Terry.l.funderburg@us.army.mil
	Gaines, Sally	JMC	309-782-0032	gainess@osc.army.mil
<b>X</b>	Giardina, Antonia	ASA(I&E)	703-692-9897	Antonia.giardina@us.army.mil
	Giffin, Dave	USAEC	410-436-2527	Dave.giffin@us.army.mil
	Grote, John H., Jr.	AEPI-USAWC Fellow	703-602-2343	John.grote@hqda.army.mil
<b>X</b>	Hadlock, Gregg, MAJ	NGB-ARNG	703-607-4504	Gregg.hadlock@us.army.mil
	Hall, Chaela	USAEC	410-436-7071	Chaela.Hall@us.army.mil
	Hallmark, COL Mary	AEPI	703-602-0183	Mary.hallmark@hqda.army.mil
	Hamby, MAJ Jason	ARNG Inst Division	703-602-5340	Jason.hamby@hqda.army.mil
<b>X</b>	Hanson, Michelle	ERDC-CERL		Michelle.j.hanson@erdc.usace.army.mil
	Hassell, Leonard	OASA(I&E)	703-697-8162	Leonard.Hassell@hqda.army.mil
	Higgins, Tammy	HQ, AMC	703-806-8722	higginst@hqamc.army.mil
<b>X</b>	Jessup, Philip	HQ, IMCOM	703-602-3337	Philip.jessup@hqda.army.mil
	Juhasz, Don	ACSIM-FDF-U	703-601-0374	Don.juhasz@hqda.army.mil
	Keenan, COL John	ODEP	703-601-1990	John.Keenan@hqda.army.mil

	<b>Name</b>	<b>Organization</b>	<b>Phone</b>	<b>Email address</b>
	Kuntz, Gordon D.	AEPI-USAWC Fellow	703-602-0183	Gordon.kuntz@hqda.army.mil
	Lichtenstein, Mark	G-3/BAH	443-465-0764	Lichtenstein_mark@bah.com
	Lowe, Stan	AMC	703-806-8726	lowes@hqda.army.mil
<b>X</b>	Lyon, David	G-4	703-614-3762	David.Lyon@hqda.army.mil
<b>X</b>	Luther, Robert	ODASA(ESOH)	703-697-4032	Robert.luther@hqda.army.mil
	McCall, Tad	AEPI	703-604-2321	Tad.McCall@hqda.army.mil
<b>X</b>	Murphy, Richard	SAIE(ESOH)	703-697-5433	Richard.o.Murphy@hqda.army.mil
	Patton-Williams, Toni	SAIE(ESOH)	703-697-3937	willitp@hqda.army.mil
<b>X</b>	Phillips, COL Jeffrey G.	ACSIM-ODEP	703-601-1933	Jeffrey.phillips2@hqda.army.mil
	Polchek, COL Allison	USALSA		Allison.Polchek@hqda.army.mil
	Purcell, David	ACSIM		David.purcell@hqda.army.mil
<b>X</b>	Rewerts, Chris	ERDC-CERL		
	Rice, Linda	IMCOM-Plans	703-602-3337	linda.rice@hqda.army.mil
	Robertson, Beverley	IMCOM-Plans	703-602-2491	beverley.robertson@hqda.army.mil
	Scharl, John	ACSIM-FDF	703-601-0700	John.scharl@hqda.army.mil
	Scharf, Steve	SAAL-ZT	703-601-1138	Steve.Scharf@us.army.mil
	Schroeder, J. Bob	ODEP	703-601-1586	Joe.Schroeder@hqda.army.mil
	Sciascia, Richard	HQ, IMCOM Operations	703-602-4366	Richard.sciascia@hqda.army.mil
	Scott, Carl	SAIE-ESOH	703-614-8464	Carl.scott@hqda.army.mil
	Shakeshaft, Bob	USAEC	410-436-1222	Robert.Shakeshaft@us.army.mil
	Siddique, LTC Nasir	ODEP	703-601-1592	Nasir.siddique@hqda.army.mil
	Siroonian, Kristie	HQ, IMCOM (LMI)	703-602-5354	Kristie.siroonian@hqda.army.mil
<b>X</b>	Speth, LTC Michael	ODEP	703-601-1596	Mike.speth@us.army.mil
	Sprouse, Aaron	USAEC – BAH	410-436-1229	Aaron.sprouse@us.army.mil
	Stemniski, Pete	ASA(ALT) SAAL-PE	703-806-9242	peter.stemniski@us.army.mil
<b>X</b>	Stumpf, Annette	ERDC-CERL	217-373-4492	Annette.l.stumpf@erdc.usace.army.mil
<b>X</b>	Tatian, MAJ Chris	ODEP	703-601-1596	Christopher.tatian@hqda.army.mil
<b>X</b>	Trembly, Lisa	ODEP	703-601-1586	Lisa.trembly@hqda.army.mil
	Vandervort, Joan D.	G-3 (DAMO-TRS)	703-692-6445	Joan.db.vandervort@us.army.mil
	Verdonik, Daniel	OASA(ALT); SAAL-PE	703-604-7033	Daniel.verdonik@hqda.army.mil
	Vojnovich, Brian	IMCOM Opns, Training	703-602-1524	vladimir.vojnovich@hqda.army.mil





# Sustainability Analysis Tools for Strategic Planning and Decision Making

## Framework and Analytic Model

Briefing to Army Sustainability Committee

26 April 2007

David S. Eady

Concurrent Technologies Corporation

1

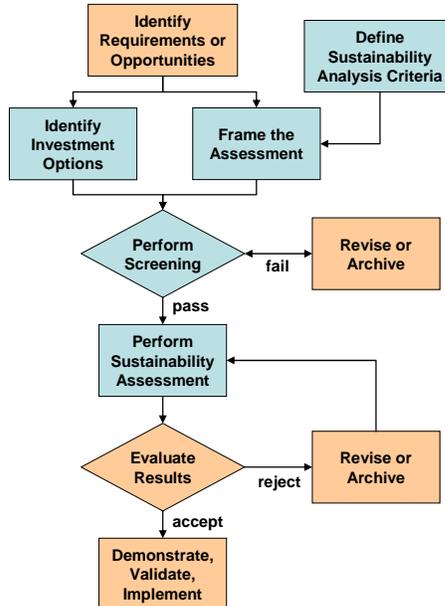
## Sustainability Analysis Framework

**Purpose:**

Develop evaluative criteria and framework for analysis and modeling across operational, social, environmental, and financial aspects of sustainability within the Army garrison, training base, and contingency operations domains.

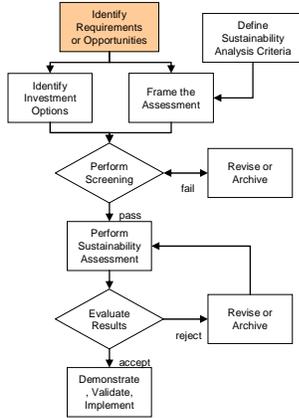
**Result:**

Higher level of systems thinking up front (i.e., in choosing and evaluating investment options)



2

# Identify Requirements or Opportunities



**Purpose:**

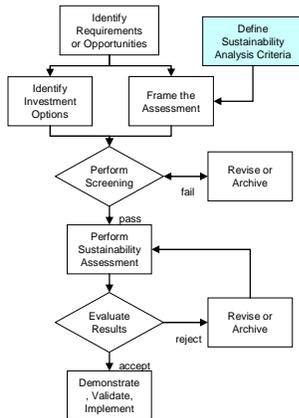
Based on stakeholder input, identify a requirement, opportunity, or risk.

**Stakeholder Input Examples:**

- Requirement: sufficient and safe drinking water for Soldiers
- Opportunity: more efficient and/or cost-effective delivery of water with reduced logistical footprint
- Risk: loss of life from transport of water supplies to Soldiers in contingency operations

3

# Define Sustainability Analysis Criteria



**Purpose:**

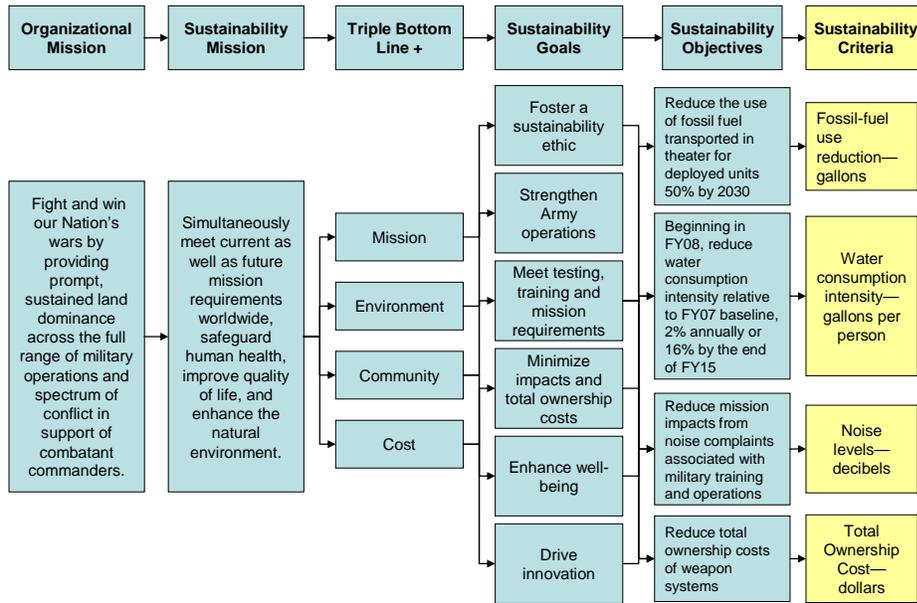
Develop evaluative criteria in consultation with key stakeholders to identify and measure operational, social, environmental, and financial aspects of sustainability within and across the Army garrison, training base, and CONOPS domains.

**The Criteria Must:**

- Be Relevant: Can be directly related to Army sustainability objectives
- Be Measurable: Can be quantitatively or qualitatively measured
- Have Data Available: Data exists or can be obtained with reasonable effort

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# Relate Criteria to Sustainability Objectives



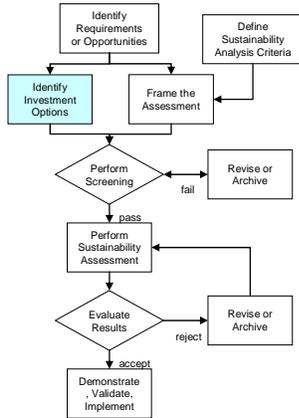
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# Examples from the Sustainability Analysis Criteria Matrix

Triple Bottom Line +	Sustainability Goals						Sustainability Objectives	Sustainability Criteria	Reference
	Sustainability Ethic	Army Operations	T, T, & M Requirements	Ownership Costs	Enhance Well-Being	Innovation Drive			
Mission		✓	✓	✓		✓	Reduce the use of fossil fuel transported in theater for deployed units 50% by 2030	Fossil-fuel use reduction—gallons	Strategic Plan for Army Sustainability, pg. 14
Environment		✓	✓	✓		✓	Beginning in FY08, reduce water consumption intensity relative to FY07 baseline, 2% annually or 16% by the end of FY15	Water consumption intensity—gallons per person	Executive Order 13423, pg. 3919
Community		✓	✓		✓	✓	Reduce mission impacts from noise complaints associated with military training and operations	Noise levels—decibels	Army Regulation (AR) 350-19, The Army Sustainable Range Program, section 1-5c
Cost		✓		✓			Reduce total ownership costs of weapon systems	Total Ownership Cost—dollars	DODI 5000.2, Enclosure 7.1, pg. 32

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# Identify Investment Options



**Purpose:**

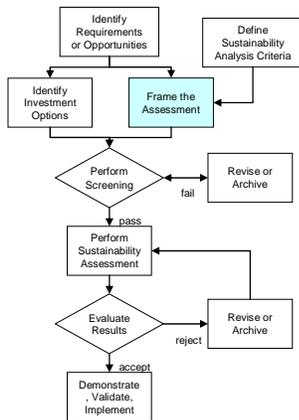
Identify a range of investment options for satisfying the requirement or opportunity

**Principles:**

- Identify several potential investment options
  - Different manufacturers
  - Different technologies
- Do not review or eliminate any investment options

7

# Frame the Sustainability Analysis



**Purpose:**

Define the scope of the analysis by developing an understanding of the opportunity as it relates to Army sustainability objectives.

**Tools for Framing the Analysis:**

- System Mapping: generate a schematic relating potential investment options to the mission, community, environment, and cost aspects.
- Significant Aspects & Impacts Matrix: qualitatively describe the potential life cycle impacts of the investment option on mission, environment, community, and cost

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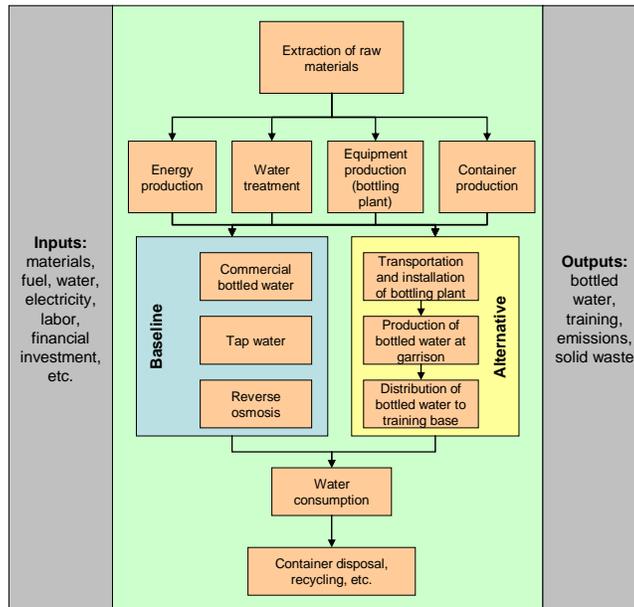
## Draft System Map for Water Bottling

### Purpose:

Represent how the activities associated with the opportunity relate to mission, community, environment, and cost aspects.

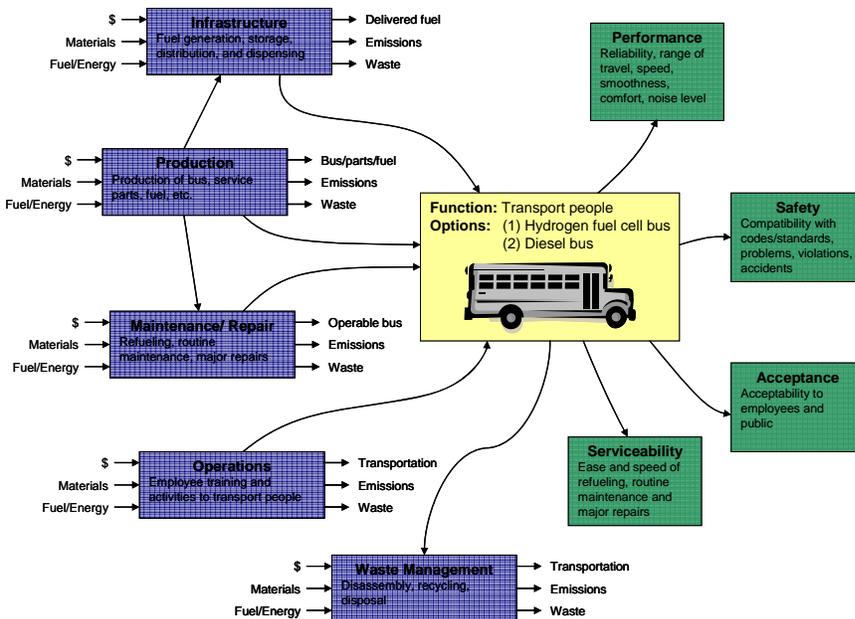
### Includes:

- Material and energy flows
- Labor inputs
- Financial inputs.
- Causal relationships



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## System Map for Buses Used in Soldier Transport



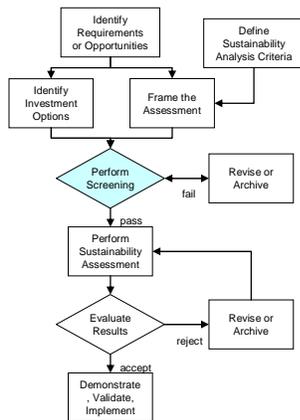
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## Significant Impacts & Aspects Matrix

Life Cycle Stage	Sustainability Theme							
	Mission		Environment		Community		Cost	
	Inputs	Outputs	Inputs	Outputs	Inputs	Outputs	Inputs	Outputs
Raw Material Extraction								
Manufacturing/ Production		Bottling plant, water bottles	Material, energy	Emissions, waste	Labor		Material, energy, labor, financial investment	
Distribution			Fuel	Emissions	Labor		Fuel	
Use	Training	Bottled water. Increased security of water supply	Energy, water		Labor		Energy, water	
End-of-Life				Waste (plastic bottles)				

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## Perform Screening



### Purpose:

Down select investment options by evaluating each against a set of firm requirements that must be met.

### Approach:

- Identify requirements necessary for further consideration
- Identify specific requirements that can be quantitatively or qualitatively evaluated
- Data must be readily available for the option to be screened (e.g., from the supplier)

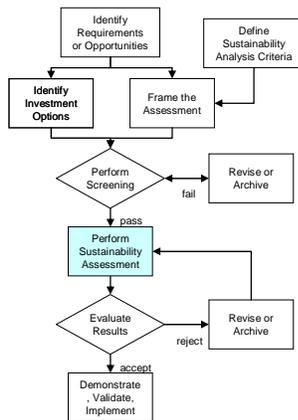
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## Screening Worksheet Example

Requirement	Green Result	Red Result	Performance for each Investment Option				
			1	2	3	4	5
Weight	≤ 5,000 lbs	> 5,000 lbs	4,500 lbs	4,800 lbs	4,300 lbs	4,900 lbs	5,200 lbs
Use-phase energy consumption	≤ 4 kWh/unit	>4 kWh/unit	4.7 kWh/unit	3.9 kWh/unit	3.8 kWh/unit	4.9 kWh/unit	3.6 kWh/unit
Meets TB MED 577 water quality levels	Yes	No	Yes	Yes	Yes	No	Yes
Results:			Fail	Pass	Pass	Fail	Fail

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## Perform the Sustainability Assessment



### Purpose:

Assess the potential impacts of the baseline and each down selected investment option with respect to the Triple Bottom Line + aspects

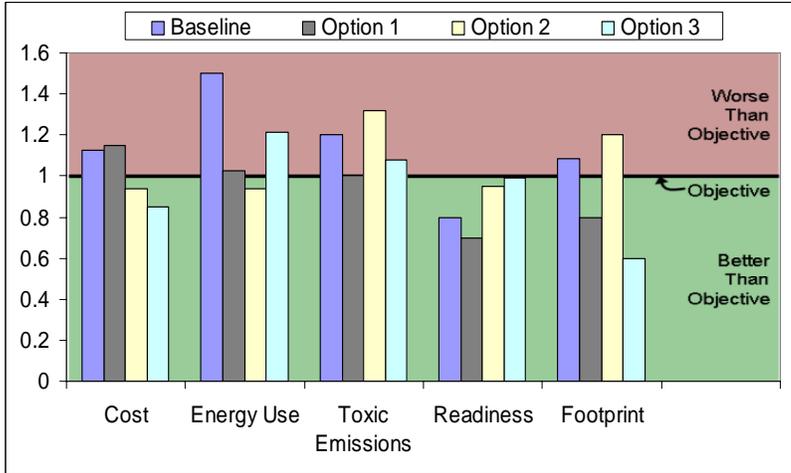
### Approach:

- Leverage existing tools as appropriate
- Collect data
- Compare baseline and down selected investment options
  - Quantitative results:
    - Normalize performance scores to place all criteria results on the same scale
    - Derive relative weights for each criteria using the AHP pairwise comparison process
    - Calculate overall performance score for the baseline and down selected investment options
  - Qualitative results:
    - Use AHP pairwise comparison to apply semi-quantitative results
    - Discuss differences qualitatively

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# Notional Results

Normalized to the Sustainability Objective or Baseline for Each Criteria



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# Notional Results

Weighting Criteria to reflect Relative Importance

AHP numerical comparison scale

1	Two criteria equally important
3	One criteria slightly more important than the other
5	One criteria strongly more important than the other
7	One criteria very strongly more important than the other
9	One criteria extremely more important than the other

Pairwise Comparison Matrix

	Cost	Energy	Toxic Emissions	Readiness	Footprint
Cost	1	1/5	1/3	1/7	9
Energy	5	1	3	5	1/5
Toxic Emissions	3	1/3	1	3	1/7
Readiness	7	1/5	1/3	1	5
Footprint	1/9	5	7	1/5	1
Column Sum	16.11	6.73	11.67	9.34	15.34

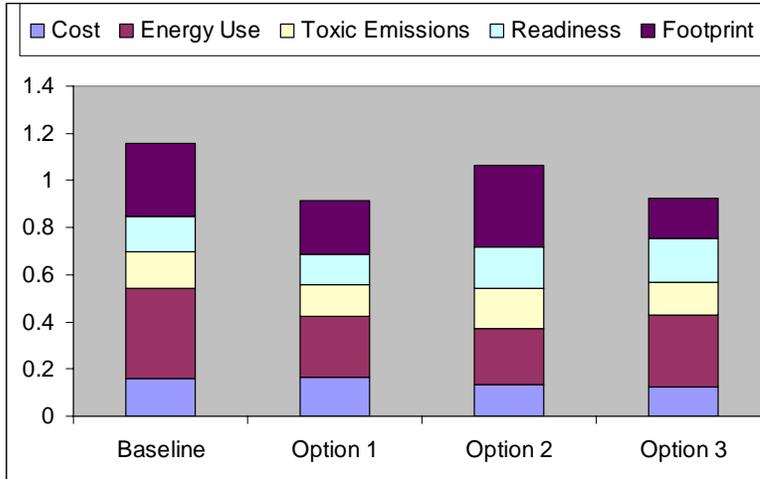
Weights of the Objective Hierarchy

	Cost	Energy	Toxic Emissions	Readiness	Footprint
	0.14	0.25	0.13	0.19	0.29

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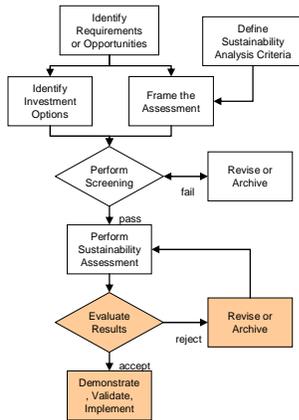
# Notional Results

Overall Sustainability Analysis Score



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# Evaluate Results



## Purpose:

Decision-maker evaluates the results of the sustainability assessment and takes action (e.g., revise, archive, demonstrate, validate, or implement an investment option)

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## Next Steps

- **Sustainability Analysis Framework Demonstration**
  - Baseline Scenario
    - Diesel engine-powered buses at Fort Jackson
    - Buses used for Soldier and Recruit transport
  - Alternate Scenarios
    - Hydrogen fuel-cell powered buses
  - Sustainability Assessment
    - Screening not required (investment option identified)
    - Normalized scores will be generated
    - Weighting will not be performed

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## Optional Next Steps – Not Planned

- **Technology Demonstration and Validation**
  - Production, Storage and Distribution
    - Hydrogen production from renewable energy sources
    - Vehicle fueling station
  - Alternative Fueled/Powered Vehicles
    - Bio-diesel engine-powered buses
    - Hybrid-electric diesel engine buses
    - Hydrogen-fueled internal combustion engine buses
    - Hydrogen fuel cell powered buses

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## **Contact Info:**

### **John J. Fittipaldi**

Army Environmental Policy Institute  
(703) 604-2307  
John.Fittipaldi@us.army.mil

### **David S. Eady**

Concurrent Technologies Corporation  
(703) 258-2240  
eadyd@ctc.com