Developing an Army Water Security Strategy

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May 2011
Environmental and Energy Security and Sustainability Symposium
AEPI’s Interest in an Army Water Security Strategy

• Outgrowth of AEPI’s groundbreaking work on sustainability

• Integrate different analytical perspectives

• Holistic and long-term opportunities

• Actionable recommendations
Army Water Security Strategy: Motivators

**Institutional / Training**
- Future imbalances between supply and demand
- Uncertainties concerning future availability, quality, and cost
- Uncertainties related to climate change and demography
- Renewable energy increases water demands
- More realistic training scenarios to match deployment water situation

**Operations**
- Vulnerabilities associated with extended use of bottled water
- Use of integrated watershed management
- Uncertain duration makes optimal choice for water delivery less clear
- Complex interagency and international coordination requirements
- Integration of Army civil works expertise

**Supply Chain**
- Spatial and temporal risk associated with embedded water
- Use Army market power to increase sustainability of suppliers
Linkages with Leadership Initiatives

Institutional
- Net Zero Installations Initiative
- Army Campaign Plan
- Army Sustainability Campaign Plan

Operations
- Army Contingency Basing Strategy & Campaign Plan
- Army Base Camp ICDT
- Army Campaign Plan

Supply Chain
- Green Procurement
- Fully –burdened cost of fuel and water

Net Zero Hierarchy
- Energy
  - Reduction
  - Re-Purpose
  - Recycling & Composting
  - Energy Recovery
  - Waste
  - Disposal

The United States Army
Concept Capability Plan
2015-2024

07 December 2009
Marstel-Day’s Methods

Engaging Army and Non-Army Stakeholders

1&2: Issue and Stakeholder Identification

3&4: Taxonomy Development and Stakeholder Outreach

5: Risk and Intersection Analysis and Taxonomy Refinement

6: Strategy Review

7: Strategy Finalization

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The capacity to ensure that water of suitable quality is provided at a sustained rate sufficient to support all current and future Army missions as needed. Army water security should

- include deliberate efforts to minimize direct costs
- minimize associated energy and transportation costs
- mitigate occupational and combat-related risks
- avoid damage to the environment (at home and in host nations)
- ensure long-term, sustainable access
- engage other users of shared water resources to plan for future water needs
Growing pressures outside fence line
- Water rights questions

Need system integrity to secure reuse and repurposing

Lack of reliable use data to guide investment
- Not planning for future demand

System integrity
- Vulnerabilities to natural disaster/attack

Water-Related Vulnerabilities for Army Installations
Water Resource Vulnerabilities in Army Overseas Operations

- Lack of oversight on waste water disposal
- Water bottle waste; volume/hazards
- Local source unavailable or outside fence line
- Source of friction with local community
- Costs and risks of transporting bottled and bulk water
- Dependence on bottled water
- Hydration during bio/chemical event
Intersection with Other Resources

Energy / Power Generation

- **Water intensive**: Fuel production (conventional, renewable, biofuels) and power generation
- **Energy intensive**: Pumping, treating, and transporting water; desalinization

Agriculture/Environment/Ecosystem Services Resources

- **Increased competition**: Agriculture and local communities needs
- **Water quality concerns**: On and off the installation
- **Changing water patterns**: Impacts on raw water source, T&E habitats; challenges to and imperative for preservation of natural infrastructure
• Policy is compliance-driven; i.e., how to treat water entering and being discharged from an installation
• Little focus on quality, volume, and sustainability of offbase or shared water sources
• Long-term water projections not used
  – Base Realignment and Closure
  – Stationing
• Embedded water in supply chain; not identified as policy, security, or procurement issues
• Water supply in operations more coordinated and focused
Initial Key Insights: Institutional

• A unified water management program at the Secretariat and installation levels is needed

• Protecting Army water rights is vital

• Quality and type of information collected is questioned

• Municipal utility model may offer approach to comprehensive coordination, planning, management

• Attention to infrastructure tends to be reactive; long-term investment a challenge
Initial Key Insights: Institutional (2)

- Privatization can provide compelling savings and investments in infrastructure, but security issues
- Conservation planning done for compliance; long-term water security planning, as broadly defined here, is not included
- Conservation may not result in water security
- Water security issues not factored into land conservation programs
- Among installation, more action is taken where the water security problems are more severe
Initial Key Insights: Operational

• Institutions, organizations, personnel, and processes dedicated to improving solutions for meeting warfighter water needs

• Key concerns remain
  – Operator skill
  – Packaging and treatment technologies

• Rebuilding and sustaining Army skill sets in key capabilities is necessary
  – Civil engineering design (not just assembly)
  – Well drilling
  – Master planning
  – Integrated water resources management regionally
Initial Key Insights: Operational (2)

• Split Warrant Officer responsibilities into energy and water

• Diverse perspectives on bottled water; requires a hybrid solution
  – Proponents—benefits of soldier hydration; transportability
  – Opponents—focus on waste, life cycle cost, and operational vulnerabilities

• Best practices for contingency bases
  – Siting and planning access to local water sources
  – Leadership preparation (e.g. “Mayoral Cell” concept)
  – High sensitivity to host nation community perceptions / needs
Next Steps

• Translating the key findings into goals and objectives in a draft strategy document
• Circulating draft strategy for review
• Hosting review workshop in summer timeframe
• Finalizing and publishing strategy in fall timeframe
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Questions