



---

# Developing an Army Water Security Strategy

**Presented by**

Marc Kodack, Army Environmental Policy Institute

Juli MacDonald-Wimbush, Marstel-Day, LLC

**May 2011**

Environmental and Energy Security and  
Sustainability Symposium

Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE <b>MAY 2011</b>		2. REPORT TYPE		3. DATES COVERED <b>00-00-2011 to 00-00-2011</b>	
4. TITLE AND SUBTITLE <b>Developing an Army Water Security Strategy</b>				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) <b>Office of the Assistant Secretary of the Army (Installations &amp; Environment), Army Environmental Policy Institute, 110 Army Pentagon Room 3E464, Washington, DC, 20310-0110</b>				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT <b>Approved for public release; distribution unlimited</b>					
13. SUPPLEMENTARY NOTES <b>Presented at the NDIA Environment, Energy Security &amp; Sustainability (E2S2) Symposium &amp; Exhibition held 9-12 May 2011 in New Orleans, LA.</b>					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT <b>Same as Report (SAR)</b>	18. NUMBER OF PAGES <b>17</b>	19a. NAME OF RESPONSIBLE PERSON
a. REPORT <b>unclassified</b>	b. ABSTRACT <b>unclassified</b>	c. THIS PAGE <b>unclassified</b>			



## 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

### Net Zero Hierarchy



## Operations

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



TRADOC Pamphlet 525-7-7

The United States Army  
Concept Capability Plan  
for  
Army Base Camps  
in  
Full Spectrum Operation  
for the  
Future Modular  
Force  
2015-2024

07 December 2009



## Supply Chain

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

DRAFT

### Contingency Basing Strategy

Xxx XX, 2010



### Strategic Imperatives

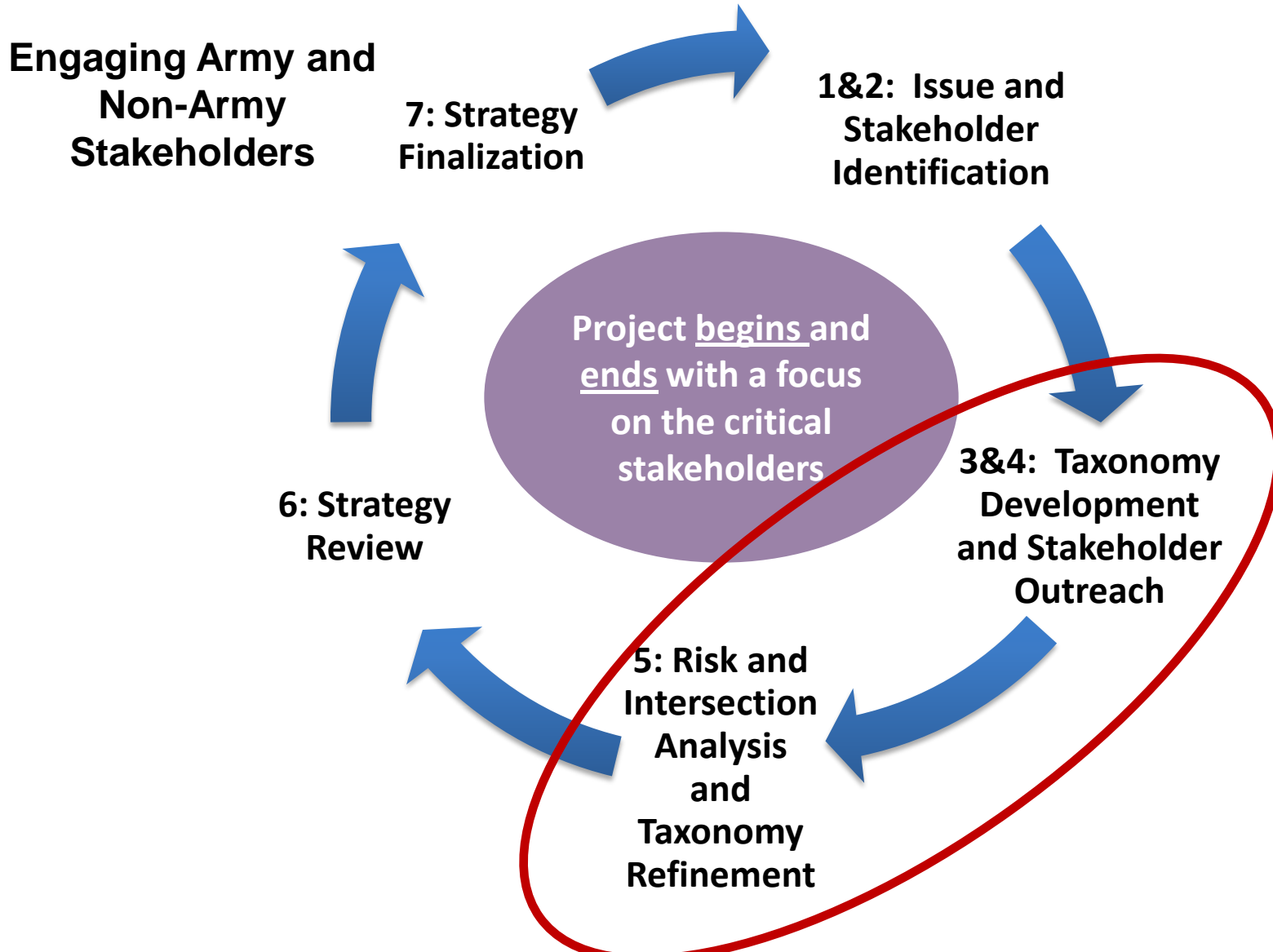
- Develop Army policy for Contingency Bases.
- Synchronize efforts regarding Contingency Bases within the Army.
- Optimize capabilities for Contingency Bases.
- Integrate strategic planning for Contingency Bases jointly.



DRAFT



# Marstel-Day's Methods





# Defining Water Security

---

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

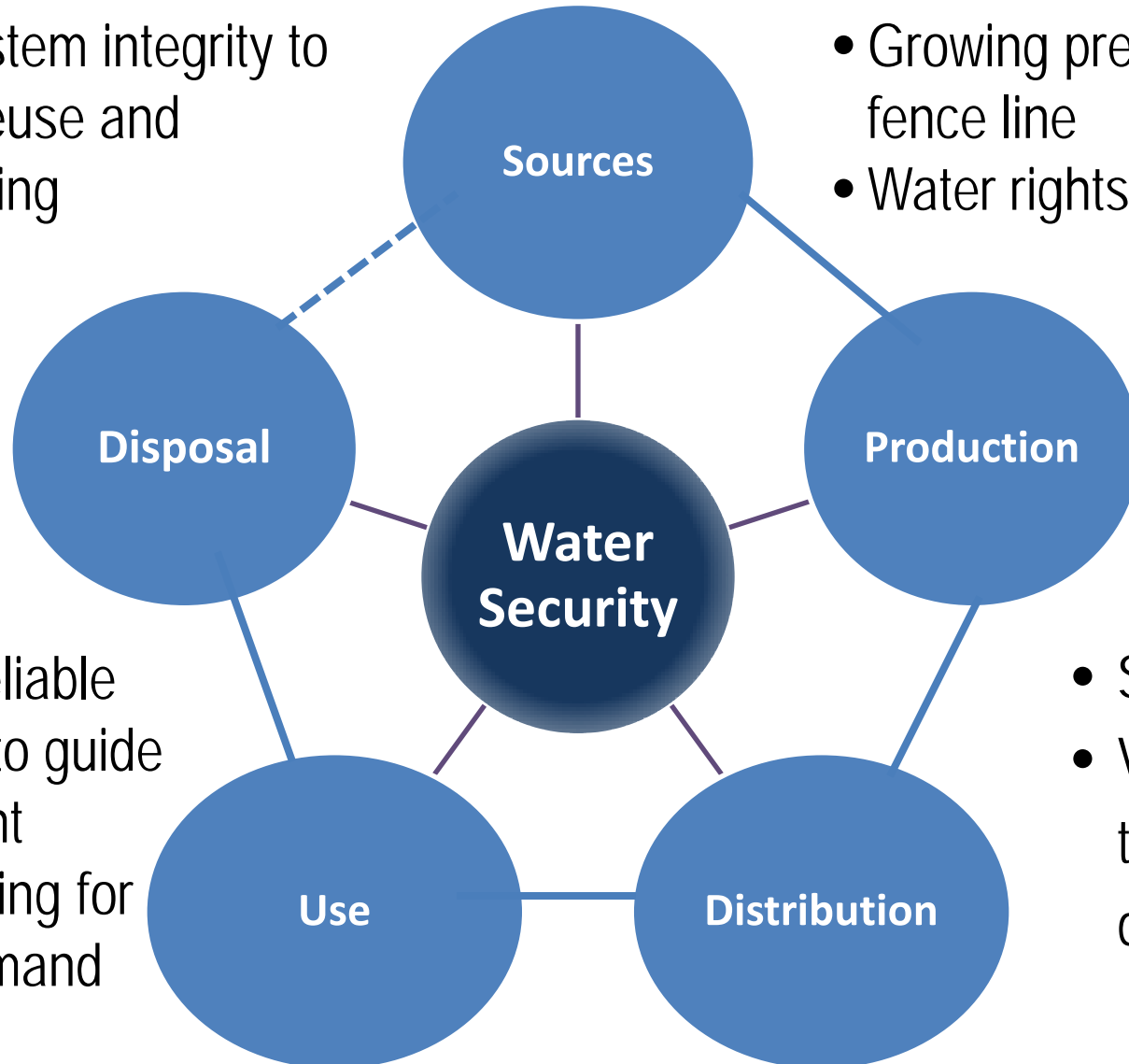
- include deliberate efforts to minimize direct costs
- minimize associated energy and transportation costs
- mitigate occupational and combat-related risks
- avoid damage to the environment (at home and in host nations)
- ensure long-term, sustainable access
- engage other users of shared water resources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



# Water-Related Vulnerabilities for Army Installations

- Need system integrity to secure reuse and repurposing

- Growing pressures outside fence line
- Water rights questions



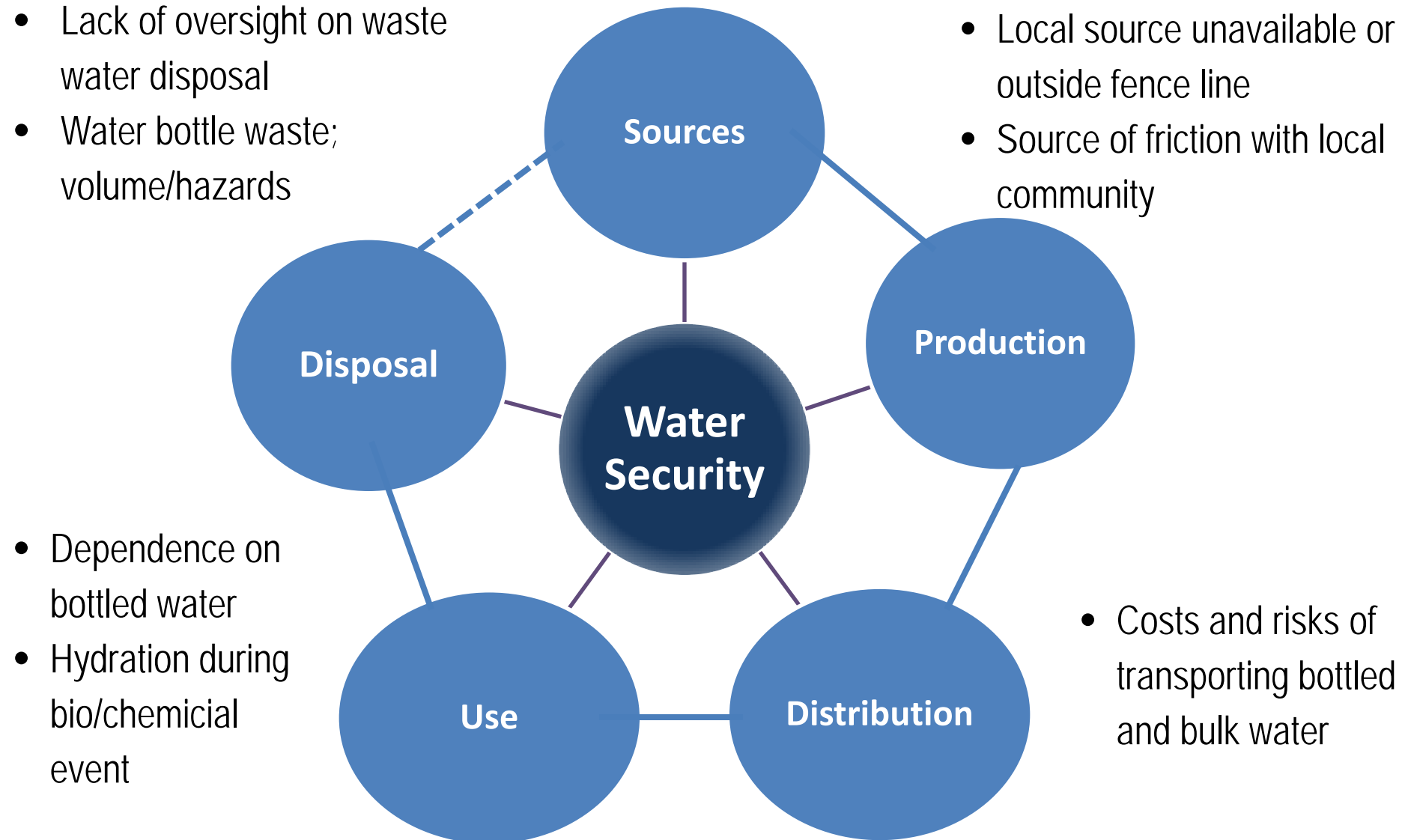
- Lack of reliable use data to guide investment
- Not planning for future demand

- System integrity
- Vulnerabilities to natural disaster/attack





# Water Resource Vulnerabilities in Army Overseas Operations





# 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



# Initial General Insights

---

- 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





# Contact Information

**Marc Kodack**  
Senior Fellow, AEPI  
571-256-4197  
[marc.kodack@conus.army.mil](mailto:marc.kodack@conus.army.mil)

**Army  
Environmental  
Policy Institute**



**Juli MacDonald-  
Wimbush**  
Partner  
571-295-2882  
[jmacdonald@marstel-day.com](mailto:jmacdonald@marstel-day.com)

**Marstel-Day, LLC**





# Questions