



SMARTe: Improving Revitalization Decisions

Ann Vega

Brownfields Research Program Manager

May 4, 2005

Clu-In Presentation for Regional Coordinators

Bilateral Working Group

Outline

- **U.S.-German Bilateral Working Group (WG)**
- **EPA's Office of Brownfields Cleanup and Redevelopment (OBCR) and Office of Research and Development (ORD)**
- **U.S.-German Phase 3 Primary Activities/Products**
- **SMARTe Overview**
- **SMARTe Demonstration**
- **Schedule**
- **Contact information**

U.S.-German Bilateral WG History

- **Workgroup Began in 1990; EPA ORD Lead**
 - Initial Focus on Cleanup Technologies
- **In 2000, Focus Changed to Revitalizing Sites**
 - OBCR joins ORD as co-lead for EPA
 - ITRC becomes partner



Bilateral Working Group



EPA's Office of Research and Development has been working cooperatively with the German Federal Ministry for Education and Research (BMBF) since 1990. This partnership is the U.S.-German Bilateral Working Group.

First two phases (1990-1995; 1995-2000) focused on evaluation of cleanup technologies. Total of 20 technologies were evaluated (10 in each country) over this 10 year period.

In 2000, the WG decided to begin Phase 3 (2000-2005) with a focus on revitalization of sites. EPA's Office of Brownfields Cleanup and Redevelopment became a co-lead of the working group. The Interstate Technology Regulatory Council became a partner at this time with EPA.

OBCR and ORD

**Office of
Brownfields
Cleanup and
Redevelopment
(OBCR)**



**Office of
Research and
Development
(ORD)**

Working together toward common goals

Bilateral Working Group

4

EPA's OBCR is funding EPA's ORD to continue it's work with the BMBF and to research and develop SMARTe.

ORD and OBCR - Working toward common goals

US-German Bilateral

- **Facilitate Equitable Land Use**
- **Facilitate Faster Revitalization of Sites**
- **Allow Greater Independence from Public Money**
- **Enhance Benefits to Society**

OBCR

- **Protecting the Environment**
Addressing brownfields to ensure the health and well-being of America's people and environment.
- **Promoting Partnerships**
Enhancing collaboration and communication essential to facilitate brownfields cleanup and reuse.
- **Strengthening the Marketplace**
Providing financial and technical assistance to bolster the private market.
- **Sustaining Reuse**
Redeveloping brownfields to enhance a community's long-term quality of life.

Bilateral Working Group

5

On the left are the U.S.-German Bilateral WG's Phase 3 goals. On the right are EPA's OBCR's goals.

As you can see, they are fairly similar:

Facilitate equitable land use – protect health of ALL people and the environment

Facilitate faster revitalization of sites – enhance collaboration and communication among and between stakeholders (stakeholders on one site and stakeholders between sites/areas/countries).

Allow greater independence from public money – bolster the private market

Enhance benefits to society – enhance community's long-term quality of life.

U.S.-German Bilateral WG Phase 3 Activities

- Workshops
- SMARTe (U.S.)
- Start-Up-Plan/Start-Up-Resource (Germany)



The primary WG activities of Phase 3 are joint workshops and two related products: SMARTe (U.S.) and Start-Up-Resource and Start-Up-Plan (Germany). We will focus on SMARTe for this presentation. The information contained in SMARTe is very similar to the information contained in the German Start-Up-Resource. They were developed concurrently using similar approaches.

US-German WG Phase 3 Activities - Workshops

Title	Dates	Location	CD?
Economic Tools	Nov. 11-12, 2002	Charlotte, NC	Yes
Project Management and Marketing	May 7-8, 2003	Saarbruecken, Germany	In progress
Environmental Risk Assessment and Communication	Oct. 23-24, 2003	Portland, OR	Yes
Social Acceptance	June 17-18, 2004	Leipzig, Germany	In progress
Sustainable Reuse	Sept. 16-17, 2004	St. Louis, MO	In progress
Summary – Germany	April 18-19, 2005	Berlin, Germany	TBD
Summary – US	Oct. 31 & Nov. 1, 2005	Denver, CO	TBD

Bilateral Working Group

7

First, here's a summary of the workshops.

Phase 3 Product Development Team Organization

	German Start-Up Products	U.S. SMARTe
Lead Organizations	BMBF	USEPA ORD & USEPA OSWER
Project Management	GSF GmbH	USEPA ORD
Core Working Group	Ferber, Graumann u. Partner, Probiotec GmbH, Difu, Universität Stuttgart	USEPA ORD, ITRC Contractors
Model Site Representatives	5 reps for 11 projects	6 reps for 13 projects
Experts	Federal Agencies, States and Local Authorities, Universities, Developers, others	USEPA, North-East-Mid- West Institute, State and Local Governments, Universities, others

Bilateral Working Group

8

Here's an overview of the team that developed the primary Phase 3 products.

Model Projects used in both countries to provide information for SMARTe and Start-Up. Joint Workshops also provided information and tools/techniques.

SMARTe Overview

Sustainable Management
Approaches and
Revitalization Tools –
electronic



SMARTe is a web-based decision support tool intended to be used by brownfield revitalization stakeholders **to develop and evaluate future reuse scenarios** for potentially contaminated sites.

Bilateral Working Group

9

SMARTe stands for...

It is a web-based decision support tool that can help stakeholders develop and evaluate future reuse scenarios for their particular site.

You might give an example of an audience-relevant BF site and talk about what pieces of information go into the decision regarding what that site will be.

SMARTe Philosophy/Vision

- Open Source Software
- Multiple Levels of Complexity
- Multi-Criteria Decision Analysis (MCDA)
- Probabilistic Framework to Characterize, Evaluate and Manage Uncertainty
- Analysis Tools
- Guidance
- Presentation and Communication tools
- Can be Modified/Tailored for Different Users (i.e., Flexible)



Bilateral Working Group

10



Open Source Software – EPA is putting in money now so SMARTe can be free to the public later.

Complexity – can be used by novice through expert (information, technical tools/calculators, expert systems).

MCDA – useful to make complex, multi-faceted decisions with lots of multi-disciplinary stakeholders who have different priorities.

Uncertainty – determine if more information is needed and what inputs to the decision are most important.

Analysis Tools – expert systems, modeling, statistics

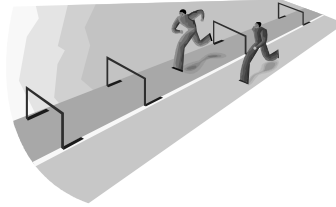
Guidance – interactive assistance through the process

Presentation/Communication – graphs, visual simulations, pictures, plans

Flexible – templates, etc., easy to modify/create. XML and open source software allow educated users to create/modify for their needs.

Why are We Developing SMARTe?

To remove obstacles to revitalization identified by the U.S.-German Bilateral Working Group.



- Identifying market and non-market costs and benefits of revitalization options
- Identifying private and public financing options
- Evaluating and communicating environmental risks
- Identifying and evaluating characterization, remediation, and long-term monitoring technologies
- Identifying state-specific information

Bilateral Working Group

11 

So how did we decide to develop these products? In 2001, workshops were held in both countries in order to identify the obstacles to redevelopment of brownfield sites. BMBF, EPA, and ITRC determined which obstacles could be addressed by the U.S.-German Bilateral WG within a 5 year period and what tools might be developed to help overcome those obstacles. SMARTe became the tool on the U.S. side.

Here are 5 obstacles just to give some examples. *Handout tickler is for “obstacles list” if you choose to use it. If so, mention that the entire list and how it was addressed within SMARTe (or will be addressed) is provided on a handout.*

How are we Developing SMARTe?

- **Open Literature – EPA and Other Sources**
- **Model Projects – Interviews and Presentations**
- **Joint Workshops**
- **National and International Conferences**
 - **CABERNET, ConSoil, National Brownfield Conference**
- **Discussions with Experts in the Field**
- **ITRC**
- **Other Review Comments**
- **Existing Databases**
- **Beta Test Sites**

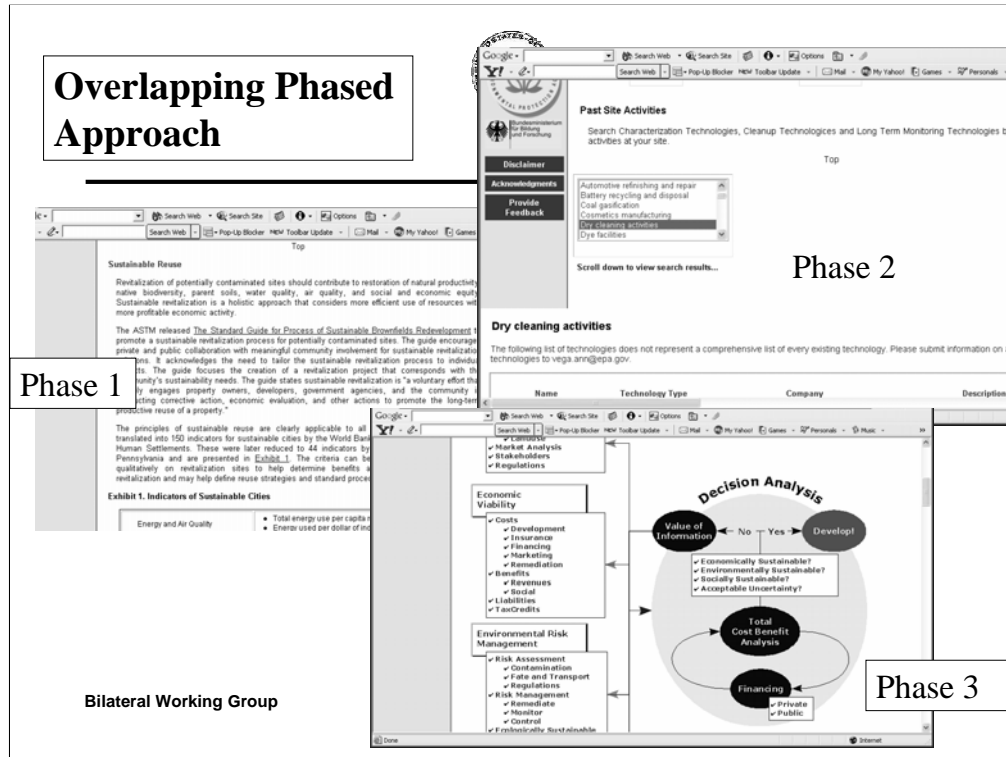
Bilateral Working Group



Already discussed most of these, but two things need to be mentioned.

First, the beta test version of SMARTe has a “provide feedback” button where any user can provide comments to the SMARTe Technical Development Team (STDT).

Second, the bilateral WG is starting to select beta test sites. Specifically, beta projects are projects which are “stuck” or are in the early stages of redevelopment. These projects will be guided by members of the STDT to use SMARTe to help them through the revitalization process and be asked to provide critical feedback information regarding what worked, what didn’t work and what’s missing from SMARTe.



SMARTe is being developed in an overlapping phased approach.

Phase 1 – making sure people know about and have access to information and resources. 2003 and beyond.

Phase 2 – Developing interactive tools and templates that can be used as stand-alone tools. 2005 and beyond.

Phase 3 – Integrating all the tools and templates into an expert system with data analysis capabilities that will allow users to evaluate future reuse scenarios and print out a revitalization plan based on their inputs and decisions. 2007 and beyond.

SMARTe Introduction

SMARTe contains four primary components:

- **Screening Tool** - Leads users through the entire revitalization process. Currently called SMARTe Screen, available 2007.
- **eDocument** – Provides information, links, and resources regarding the revitalization process. Currently called SMARTe Resource, available for beta testing now.
- **Search engine** – Allows users to search for information, tools and best practices. Currently called SMARTe Search, available October 2005.
- **Toolbox** – Contains electronic tools (e.g., searchable databases, templates) to analyze and solve revitalization issues. Added every year.

Bilateral Working Group

14

Here is a brief introduction to SMARTe. We will go over it in more detail via the internet in a few minutes (*of if no internet connection, you can use screen shots, or you don't have to do a demo. Get the screen shots you want by going to www.smarte.org and accessing the screen you wish to capture. Click and hold ctrl-alt-print screen on your keyboard. Open up a blank ppt slide and press ctrl-V to paste the screen shot on the slide. Size appropriately*).

If a user wishes to access the entire decision support system (start at the very beginning), he/she would enter at the screening tool. This walks the user through the entire process (to be completed in 2007).

If a user just needs some information about a particular subject, he/she can access the eDocument (currently available for beta testing).

If a user isn't sure where to find the information he/she needs, the user can use the search engine (planned availability: October 2005).

If a user wants to find a characterization technology, identify an approach to involve the public, etc., he/she would use one of the interactive tools (two databases currently available; other functions will continue to be developed through 2007 and released on an annual basis).

Who can Benefit from SMARTe?

- Community members
- Brownfield grantees
- Regulators and Redevelopment Agencies
- Federal, State, and Local Government Officials
- Financial and Legal Stakeholders
- Developers
- Property Owners
- Private Consultants



Bilateral Working Group

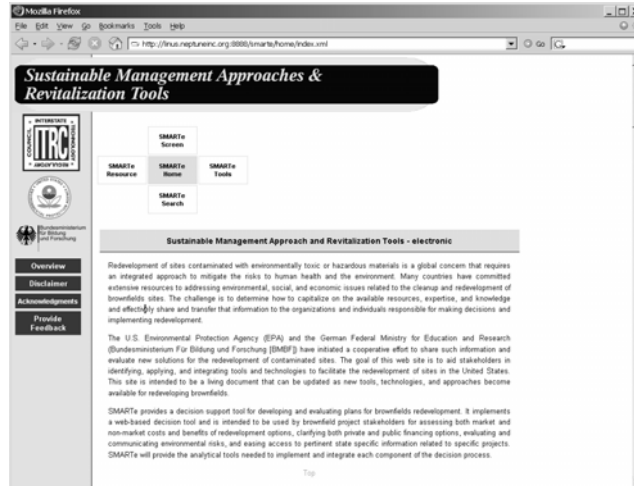
15

SMARTe is intended to be used by those at the novice level all the way through the expert level. Novices will likely access SMARTe for information and some of the non-technical tools and templates while experts will access the more technical tools. A variety of stakeholders will use SMARTe to walk through the entire revitalization process – make sure they've addressed all of the different aspects of a revitalization effort and are making a decision based on data of known quality.

SMARTe is being built in freeware so that it can be made free to the public.

To Access Beta Version of SMARTe

www.smarte.org



Requires Internet Explorer 6.0 or Mozilla/Firefox 1.1 & higher

16

Or:

www.itrcweb.org, Guidance documents, brownfields

The screenshot displays the ITRC website interface within a Microsoft Internet Explorer browser window. The page is titled "INTERSTATE TECHNOLOGY & REGULATORY COUNCIL" and "Regulatory Acceptance for New Solutions". It features a navigation menu on the left with links to "Internet-Based Training", "Guidance Documents", "Success Stories", "Five-Year Program Plan", "Industry Affiliates Program", and "Feedback". The main content area is divided into two sections: "Guidance Documents" and "Brownfields Documents".

Guidance Documents

Guidance documents are categorized by authoring team. To view documents authored by team, click the appropriate gray button in the group below.

Recent Documents (Note: These are PDF files; some are quite large. It is generally faster to download the PDF to a local drive, then open or print it with Acrobat Reader. To download, RIGHT-click on the use the save option.)

- **Permeable Reactive Barriers: Lessons Learned/New Directions** (PRB-4, February 2005)
- **Environmental Management at Operating Outdoor Small Arms Firing Ranges** (SMAR February 2005)
- **Characterization, Design, Construction, and Monitoring of Mitigation Wetlands** (WT February 2005)
- **Overview of Groundwater Remediation Technologies for MTBE and TBA** (MTBE-1, February 2005)
- **Technical and Regulatory Guidance for In Situ Chemical Oxidation of Contaminants and Groundwater, Second Edition** (ISCO-2, January 2005)
- **Geophysical Probe-Outs for Nonfluent Remediation Projects** (LUXO-3, November 2004)
- **Remediation Process Optimization: Identifying Opportunities for Enhanced and Efficient Site Remediation** (RPO-3, September 2004)
- **Strategies for Monitoring the Performance of DNAPL Source Zone Remedies** (DNAP August 2004)
- **Issues of Long-Term Stewardship: State Regulators' Perspectives** (RAD-3, July 2004)

Brownfields Documents

A limited number of hard copies are available. To request one, e-mail your mailing address with the document number to itrc@epa.gov.

To print a document, RIGHT-click on the link in the table and (depending on your browser) select "Save" (Internet Explorer) or "Save Target As..." (Firefox). NOTE: It is generally faster to download the PDF to a local drive, then open and print it with Acrobat Reader.

Doc. #	Title	Description
BRF1D-1	Vapor Intrusion Issues at Brownfield Sites (December 2003)	An overview of vapor intrusion, contaminant types with vapor intrusion potential, brownfield sites potential to have indoor air exposure from vapor intrusion, and steps that can be taken to limit exposures.

Related Documents

SMARTe is a web-based brownfields decision support tool. SMARTe is intended to be used by brownfield project stakeholders for assessing both market and non-market costs and benefits of remediation options, clarifying both private and public financing options, evaluating and communicating environmental risks, and existing access to pertinent state-specific information related to specific property. A draft web site for SMARTe is currently available for beta testing. The complete decision support tool is expected to be complete in 2007. During development, your ideas for improvement are welcome and may be directed to tsmith@itrcweb.org. Additionally, if your experience with SMARTe results in saving money, time, or other resources, we would like to hear about that, too.

This web site is owned by ITRC.
E-mail questions or comments about this site to itrc@epa.gov.
Document Access: <http://www.itrcweb.org>

Features Under Development – Release October 05

- Checklist of potential stakeholders
- Table of land use options and reuse scenario templates (text)
- User feedback template with comment database
- Case study template
- SMARTe map
- Tutorial
- Characterization/monitoring data analysis and presentation
- Human health risk assessment calculator
- Market cost/benefit analysis
- Stakeholder involvement tool
- SMARTe Resource search function



Bilateral Working Group

18



Here are some of the features currently under development.

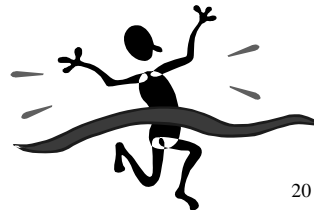
The handout tickler is for the components list. I wouldn't hand this out to most audiences. And when it is handed out, most audiences would only need the first worksheet.

Additional SMARTe Focus Areas

- **Rural areas**
- **Mine-scarred lands**
- **Methamphetamine sites**
- **Regional and local land use planning**
- **Green buildings/materials; energy conservation**
- **Long-term stewardship**
- **Metrics**

Schedule

- Beta testing (continuous)
- User feedback (continuous)
- Annual updates to add tools and address comments
- Complete decision analysis tool by October 2007
- Sustainable revitalization tools 2005-2010
- Final SMARTe 2010 (updates as needed)



Bilateral Working Group

20



Ann Vega

USEPA Brownfields Research Program Manager

513-569-7635 (phone)

email: vega.ann@epa.gov

Bilateral Working Group

21

For questions, etc. regarding SMARTe – contact Ann Vega.

Web Sites

Office of Brownfields Cleanup and Redevelopment (OBCR)
<http://www.epa.gov/brownfields>

US-German Bilateral Working Group
<http://www.bilateral-wg.org/>

Interstate Technology Regulatory Council
www.itrcweb.org

SMARTe
www.smarte.org

List of websites that might be useful.

Thank You

After viewing the links to additional resources, please
complete our online feedback form.

Thank You

Links to Additional Resources

Bilateral Working Group

23