EBC Site Remediation & Redevelopment Program: What Does Successful Risk Communication Look Like?
Welcome

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Program Purpose – What You Will Learn

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Environmental Business Council of New England
Energy Environment Economy
Risk, Risk Perception, and Risk Communication – What Do We Know?

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Clinical Professor of Environmental Health
Boston University, School of Public Health
RISK, RISK PERCEPTION, AND RISK COMMUNICATION
WHAT DO WE KNOW?

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Unsuccessful Risk Communication Strategy

The public, media, and Congressional reaction to these new numbers is going to be huge. The impact to EPA and DoD is going be extremely painful. We (DoD and EPA) cannot seem to get ATSDR to realize the potential public relations nightmare this is going to be.

EPA's COS is likely reaching out to HHS COS.
Successful Risk Communication Strategy

1. Interact as soon as possible with your communication partner
2. Assemble and share the evidence/data/analyses
3. Acknowledge public perspectives and opinions and knowledge
ENVIRONMENTAL HEALTH RISK

• An exposure that increases the likelihood of developing [or worsening] a disease - WHO

• **Toxicity * Exposure = Risk**

*Do NOT stand in front or in back of the numbers: what do they mean?*
RISK PERCEPTION
ACKNOWLEDGMENT OF
PUBLIC PERSPECTIVES

- **Regulators/Regulated Community:**
  Risk Limits, numbers, policy, law and control, $$…

- **Impacted Communities:** My children’s health, personal experience, degree of control, property values, $$…

Is it an even playing field?
“Interactive process of exchange of information and opinion among individuals, groups and initiatives....”

National Research Council (1989)
RISK COMMUNICATION IS HARD

• How to exchange meaningful information regarding uncertain, complex and ambiguous knowledge (Renn 2008)

• Two-way communication is seen as inherently difficult and dangerous (Davies 2008)
RISK COMMUNICATION AS PART OF ENVIRONMENTAL MANAGEMENT

Community  Industry, PRP

Motivation?
1. Interact as soon as possible with your communication partner
2. Assemble and share the evidence/data/analyses
3. Acknowledge public perspectives and opinions and knowledge
4. KNOW YOUR STUFF!

5. Clearly identify YOUR analysis of options – [MOTIVATIONS!!!]
• Recognize the need for **trust** – must be earned.
• People want information – you have it/they have it – share it.
• It’s a process, not a single public meeting….
• Experienced communicator with empathy, trustworthiness

Covello 2003; Fischhoff 1995; Keune 2016
“We don’t know what it means – so we won’t tell them - NOT ok”
L. Birnbaum, NIEHS
Facts versus Fear: The Consultant/Risk Assessor/LSP Perspective

It’s all about the lenses…
Risk Perception

“Risk” means different things to different people

- **Regulators**: Think in terms of standards (e.g. safety, below threshold criteria)
- **Scientists/Engineers**: Think in terms of numerical values (e.g. $1 \times 10^{-6}$)
- **General Public**: How will it affect me? Am I safe? Will my child get sick?
Diverse Regulatory Thresholds for “What is Safe?”

- MADEP and USEPA Risk Protocols and Criteria
- MCLs
- Radon
- OSHA Permissible Exposure Limits (PELs)

This complicates the message!
Environmental Risk Assessment vs Reality – It’s a Balancing Act

- Risk Assessment (RA) is a tool to put data in context, make decisions about remediation
- It’s the best tool we have right now
- Incorporates lots of assumptions
- “Compounding Conservatism”
- Are we really getting at “Reasonable Maximum Exposure” or “RME”?

Source: http://www.epa.gov/oswer/vaporintrusion/basic.html
PFAS is in the news daily - Why the Focus?

- Persistent Organic Pollutant
  - Proposed: PFOA, PFHxS
- Toxicity Studies
  - Developmental, immune effects
  - Liver/kidney
  - Increased cholesterol, hypertension, thyroid
  - Cancers - liver, testicular, pancreatic, kidney
- Prevalence and persistence in environment and in humans
- Few standards/guidelines available and lots of uncertainty
Primary Exposure Routes for PFAS

- Food and water ingestion
  - Includes packaging/wrapping transport into food
- Interior dust ingestion
- Hand to mouth transfer from treated carpets/fabrics
- Other routes of exposure anticipated to be much lower due to either intake levels or intensity of exposure (e.g., soil contact, air inhalation)
Primary Exposure Routes

- Data indicates concentrations of PFAS in virtually all media going down over time (since phase-out) as well as blood levels in humans.

- Leads to questioning of “relative source contribution” component of health advisories/drinking water standards (often assume 20%).
# Risks & Criteria for PFAS and Some Other Chemicals with Stringent Toxicity Values

(Assuming Lifetime Drinking Water Use)

<table>
<thead>
<tr>
<th></th>
<th>USEPA HA/MCL (ug/L)</th>
<th>RISKS (HI)</th>
<th>Pot. MMCL (ug/L)</th>
<th>RISKS (HI)</th>
<th>Waste Water LOW (ug/L)</th>
<th>RISKS (HI)</th>
<th>Waste Water HIGH (ug/L)</th>
<th>RISKS (HI)</th>
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<tbody>
<tr>
<td>PFOA</td>
<td>0.035</td>
<td>0.048</td>
<td>0.010</td>
<td>0.014</td>
<td>0.006</td>
<td>0.008</td>
<td>0.050</td>
<td>0.068</td>
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<td>PFOS</td>
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<td>0.048</td>
<td>0.010</td>
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<td>TCE</td>
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<td>PERCHLORATE</td>
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<td>2</td>
<td>0.078</td>
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</tbody>
</table>

**Notes:**

- MMCL = Massachusetts Maximum Contaminant Level
- HA = Health Advisory
- MCL = Maximum Contaminant Level
- HI = Hazard Index
### How Do Other Countries Advise/Regulate? (ppt)

<table>
<thead>
<tr>
<th>Country</th>
<th>PFOA</th>
<th>PFOS</th>
<th>Notes</th>
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<tbody>
<tr>
<td>USEPA</td>
<td>70</td>
<td>70</td>
<td>Combined</td>
</tr>
<tr>
<td>Australia</td>
<td>70</td>
<td>560  (inc. PFHxS)</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>200</td>
<td>600</td>
<td></td>
</tr>
<tr>
<td>BC, Canada</td>
<td>200</td>
<td>300</td>
<td></td>
</tr>
<tr>
<td>Denmark</td>
<td>100</td>
<td>100</td>
<td>Ind. &amp; Summed (12)</td>
</tr>
<tr>
<td>Italy</td>
<td>500</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Sweden</td>
<td>90</td>
<td>90</td>
<td>Summed (7)</td>
</tr>
</tbody>
</table>

*Source: ITRC, Table 4-1, Standards and Guidance values for water, 9/18*
Case #1: Dairy Industry

- Dairy farm in Maine that had impacted water and used biosolids/amendments from a variety of sources (starting in 1980s) had elevated PFAS found in milk/cattle
- “Maine dairy farm plagued by chemical contaminants may be tip of the toxic iceberg” (Bangor Daily News, 3/23/2019)
- Maine’s Actions:
  - Required biosolids testing at WWTP
  - Targeted additional farms for sampling
  - Results thus far ND for raw milk
FDA data

- **2012 Study**
  - 49 retail milk product samples – all ND
  - 1/12 raw milk samples had detects – history of biosolid use, manufacturing and potential water impacts (AL)

- **2017 Total Diet Study**
  - 1/12 milk composite samples (3 sources) had detect of PFPeA (chocolate milk)
  - PFOS and PFOA non-detect in all milk samples
Chicago Tribune - The FDA found **substantial levels of a worrisome class** of nonstick, stain-resistant industrial compounds in some grocery store meats and seafood and in off-the-shelf chocolate cake.

Web MD - **These concentrations in contaminated food are really highly elevated,**” says Philippe Grandjean, PhD, an adjunct professor of environmental health at Harvard

FDA
- In total, only 14/91 samples had detectable levels of PFAS.
- Conclusions – Based on a safety assessment using the best available science, samples were determined not likely to be a human health concern.
Case #2: Manufacturing Business downgradient of PFAS source

- Successful business and building had numerous interested buyers
- Coatings manufacturer was known source of PFAS impact to drinking water and other media regionally
- All identified impacted water supplies put on public water
- Property’s irrigation well decommissioned
- Detectable level of PFAS found in surface soil and water on-Property
- State regulators forcing known source to conduct expanded investigation
Case #2: Manufacturing Business downgradient of PFAS source

- A technical memo providing all of the relevant data for Property and Source/region and regulatory status prepared
- Numerous conf. calls conducted with prospective purchasers and their consultants
- Seller did not always do homework on purchaser’s concerns/questions or liability comfort and ways to mitigate
- Thus far, no transaction due to
  - Regulatory and Financial uncertainty
  - Data gaps
  - Risk tolerance
Lessons Learned

- Communication approaches
  - Open and frequent communication – dialogue, listening
  - Transparency and clear presentation of FACTS
  - Social Media
  - Informal meetings

- Stay Open but in Control
  - Do your homework!
  - Understand the issues and results
  - Engage your audience
  - Gain and Retain Trust
THANK YOU!

QUESTIONS?

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Public Engagement Tools for Spanish-Speaking Communities

By: Raimundo Matos
Objective

– Outline tools designed to help environmental practitioners recognize the necessary community engagement steps to follow when implementing site assessment or remediation activities in communities where English is a second language.

Case Study – Village of Sleepy Hollow
New York
Case Study – Sleepy Hollow, NY

Site:
– Located north of New York City, with a population of 10,074 people, and population density of 4,600 people per square mile.
– 146 residential properties investigated for mercury in soil.
– 50 plus properties required soil cleanup.
Case Study Demographics

- According to Census Data, 52.2% of residents are Hispanic.
- 59.1% residents speak a non-English language.
- The most common foreign language at the Site is Spanish.
- The most common origin of the Spanish speakers for both sites was Ecuador, Dominican Republic, Uruguay, Cuba, and Puerto Rico [US Territory].
- 75% of the residents were US citizens, which is lower than the national average of 93%.
Case Study Data

- We analyzed data collected from an 8 to 12 year period from communications with owners/tenants/neighbors of properties that were assessed and/or remediated.
- A total of 560 communication logs that were saved into an MS Access database.

Basic Content Analysis:
- Communication logs were uploaded into a content analysis tool to evaluate word frequencies.
- Were able to qualitatively analyze what words were used most by residents or tenants during our conversations.
Case Study Results

– Up to 72% of all the conversation revolved around family health questions or concerns. Words like health, children, kids, sick, etc. were transcribed repeated.
– Up to 63% of conversations included the word “time.”
– Up to 49% of conversations included the word “cost(s).”
Based on the lessons of our community interaction, content analysis and other similar site experience, we recommend the following points be incorporated when developing a community relations protocol (including risk communications) for Spanish speaking communities:

PUBLIC ENGAGEMENT TOOLS (SLEEPY HOLLOW LESSONS LEARNED)
1) Demographics

- Research the neighborhood/town demographics of your project site or area during proposal and implementation phases.

- For example, is the project located in areas where 50% or more of residents speak Spanish as a first language? Can you determine in advance if the owners/tenants are bilingual?

- Be sure to research those topics in advance and notify your client of the potential public engagement needs during the proposal phase.
2) Community Liaison

– Incorporate a Spanish-speaking (or other languages) community liaison into your team.

– The community liaison can be a Spanish-speaking technical staff member or could be from an outside public relations firm.
3) Verbal Communications

- Avoid using too many technical words or jargons when communicating results or technical information.

- Keep it simple and if possible, have the Spanish-speaking community liaison explain results.

- Be sure the liaison understands in advance what you want to convey, so there are no “lost in translation” issues.

- Ensure all verbal communications are handled by the community liaison.
4) Written Communications

- Translate all fact sheets and notifications, such as access agreements or waivers.

- If possible, translate the executive summaries of reports. Include an English-Spanish glossary of terms when handing out result tables.
5) Team

– Maintain a consistent team throughout the project to establish and sustain a healthy rapport between parties.

– Engage the Spanish-speaking (or other languages) community liaison in all major steps of the project, as he/she is an integral part of the team.
6) Health Communications

- IF NEEDED - Engage a third-party health professional that can discuss potential health concerns or risks, and respond to questions.

- Be sure to follow the above communication guidelines!
6b) Site-Specific Cleanup Objectives

– Establish up front what is defined as “safe” (and any other words commonly used to describe conditions) so that communications are consistent throughout the project.

– Again - be sure to follow the above communication guidelines!

– SITE SPECIFIC CLEANUP OBJECTIVES? QUE?
7) Costs

- Be clear and up front to property owners about who will be responsible for the cost of assessment or remediation activities at their properties.

- Make sure the client understands the benefit of conducting all of the above activities (i.e., translations, community liaisons, etc.).
BENEFITS

– The above tools can be applied to all sites where non-English-speaking residents are present. It takes a “collaborative” approach between the consultant and the residents that ensures potential language and cultural barriers are not an issue during the implementation of activities and risk communications.

– Our experience is that Hispanic/ Latino residents appreciate company efforts to reach out to them in their language; and as such, are more open to discuss concerns/opinions about the work.

– This collaboration minimizes potential future costs (due to delays, change orders, legal issues, etc.) due to misunderstanding on work expectations or due to a distrust of the consultant.
Questions / Preguntas?
Legal Considerations in Risk Communication

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Partner

Robinson & Cole, LLP
A Perspective on Risk and Crisis Communication

EARL W. PHILLIPS
ENVIRONMENTAL BUSINESS COUNCIL
BOSTON, MASSACHUSETTS
JUNE 14, 2019
Risk Communication
v.
Crisis Management Communication

- **Definitions**
  - Hazard = **Potential** to cause harm
  - Risk = **Likelihood** of harm in defined circumstances (Potential to occur x magnitude if occurs)
  - Crisis = A **time** of intense difficulty, trouble or danger

### Risk Matrix

<table>
<thead>
<tr>
<th>Likelihood</th>
<th>Very Likely</th>
<th>Likely</th>
<th>Unlikely</th>
<th>Highly Unlikely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatality</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
</tr>
<tr>
<td>Major Injuries</td>
<td>High</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
</tr>
<tr>
<td>Minor Injuries</td>
<td>High</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
</tr>
<tr>
<td>Negligible Injuries</td>
<td>Medium</td>
<td>Medium</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>
Risk Communication

• Risk Communication
  o Relaying information about future known or potential risk situations
  o “Communication about things that MIGHT go wrong.”

• Crisis Management Communication
  o Relaying information about the status of an active or ongoing situation (may include the “risks”)
  o “Communication about things that DID go wrong or ARE going wrong.”

• Risk Perception Does Not Always Align with Risk
Experience Informs Perspective

• **Personal Context:**
  - Risk Communication in identification of and prioritizing options
  - Risk Communication in evaluating and advancing remedial approaches
  - Risk Communication in incident and crisis management
Why it is Important to Have a Risk/Crisis Communication Protocol before the Risk/Crisis:

Asiana Airlines Flight 214 Crash in San Francisco
Lessons Learned and Commonalities Observed for Effective Risk and Crisis Communication: Preliminaries

- Establish and maintain critical relationships
  - (e.g., first responders, community leadership, governmental officials, politicians, media)
- Pre-establish a “core” risk/crisis communication team
- Set “low bar” or “trigger” for mobilizing risk/crisis communication team
- Evaluate and resolve mechanics:
  - Attorney-client work product
  - Who generates message
  - Who must review or sign off on message
  - Who makes the final decision
  - Who delivers the message to whom
Lessons Learned and Commonalities Observed for Effective Risk and Crisis Communication: Preliminaries (cont.)

- Familiarize team with base operations and potentials
- Establish how information will be gathered (e.g., “Upjohn Warning”)
- Establish how evidence will be preserved
- Think about the “Unthinkables”
- Develop Agency, Governmental, Media Contact Protocols
- Maintain notification obligations for compliance and insurance
- Resolve location of “command centers”
Acknowledging The Potential Audience
One size may not fit all, but . . .
Commonalities Observed in Effective Risk and Crisis Communication

- When engaging - listen and hear from all sectors and audiences
- Offer and abide by agreed communication: schedule, content, style, duration
- Consider “themes” as/if appropriate
- Maintain an internal and external task list
- Avoid exhaustion in the crisis/risk communication team
  - Communicate facts
  - Acknowledge non-answers and information gaps
  - If commit to address or fill these gaps, then follow through
  - Build trust - communicate honestly and with respect, concern, candor (more on this)
And you hope to be believed . . . A Perspective on Effective Communication
Building and Maintaining Trust

Stephen Covey’s Trust Matrix

Trust

Character

Integrity

Caring

Transparency

Courage

Honesty

Fairness

Authenticity

Skills

Capabilities

Knowledge

Experience

Record

Results

Credibility

Performance

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Some Challenges and Lost Opportunities in Risk/Crisis Communication

- Not building or losing “trust”
- Not identifying and satisfying a potential “ally”
- Incomplete, unconfirmed, or inaccurate information
- Failure to balance competing demands of getting things done vs. communicating
- Focusing on the question asked or the news released vs. important messaging
- Perceived or actual inconsistency between communications to various audiences
- Missing critical audiences or improper sequencing of information being released
- Exhaustion and emotional errors
Why it is Important to Understand the Audience, and have Empathy while the Deep Water Horizon Incident was Unfolding

- Statements by Tony Hayward, BP’s CEO:
  - “The Gulf of Mexico is a very big ocean. The volume of oil and dispersant we are putting into this is tiny in relation to the total water volume.”
  - “I think the environmental impact of this disaster is likely to have been very, very modest.”
  - Commenting on his time devoted to this disaster, “I want my life back.”
A Few Best Practices

- Proper composition of risk communications team
- Preparation in advance
- Early and meaningful integration of communication team
- Proper management of sensitive information
- Appreciation of differences in prioritization of communication goals
- Structure and confirm proper messaging, sequencing, consistency,
- Credible communicator(s)
- Structure and confirm feedback and follow up loops
Some Case Studies (time allowing)

- The contaminated site with off-site impacts, community skepticism-resistance-hostility, compromised water supplies, and agency frustration and mandates
- The release to the environment, contaminated site, potential off-site public water supply implications, and over zealous governmental response
- The fire and explosion – from incident to resolution (in real time)
THANK YOU

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BOSTON, HARTFORD, NEW YORK, PROVIDENCE,
MIAMI, STAMFORD, LOS ANGELES, WILMINGTON,
PHILADELPHIA, ALBANY, NEW LONDON
Moderated Discussion

Moderator: Jonathan Schaefer, Robinson & Cole

Panelists:
• Lisa J. Campe, Woodard & Curran
• Wendy Heiger-Bernays, Boston University
• Raimundo J. Matos, AECOM
• Earl W. Phillips, Jr., Robinson & Cole, LLP
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