



Stakeholder Perspectives

One of the greatest stakeholder concerns about sites with long-term ICs is the ability to discover ICs into the future. After redevelopment of a brownfields site, it is difficult to determine the presence of an IC. The results from the ITRC survey showed about 41% reported IC failures were a direct result of inadequate communication. Additionally, because ECs are often integrated into a structure or paving, their integrity is not obvious. The challenge is heightened as the parties' (such as the obligated parties) agency oversight is absent given the passing of time. The challenge then becomes the discovery of the IC or EC, and the ability to convey the knowledge of the IC or EC to the stakeholder. Stakeholder outreach includes identifying and involving internal and external stakeholders throughout the IC life cycle. An effective outreach program acknowledges the interests of all potential stakeholders, while seeking input from and communicating to stakeholders during the IC process.

An IC can only remain effective so long as it continues to be recognized, respected, and upheld by affected stakeholders. Not only does the awareness of a new IC need to be communicated to the affected community, but this awareness should be maintained throughout the life of the IC. As such, decision makers are in the position of ensuring that the stakeholders are aware of the IC, the constraints of the IC, and the duration of the IC. This responsibility is a challenge, since it requires resources from budgets that are often constrained.

Purpose of Outreach

The purpose of IC outreach is to identify, communicate and inform affected stakeholders and any other interested parties of an IC and identify appropriate actions to be taken in order to maintain its long term designed effectiveness to protect human health and the environment. Outreach is a working component of an IC throughout its life cycle and should be adaptable to maintain effective communication over both the short and long term.

An effective IC outreach and communication program is critical to maintain the protections afforded by an IC and should acknowledge the interests of all potential stakeholders, and strive to provide appropriate notifications or information. Stakeholders include not only current property owners or operators, but may include a variety of other entities such as financial partners or institutions, neighboring property owners or occupants/tenants, government agencies, or nongovernmental organizations

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The term stakeholder generally includes all interested or affected parties. Stakeholders should be identified, their interest in the property described, and involved throughout the IC selection and implementation process. Potential stakeholders and their interest or concern with an IC include, but may not be limited to, those included in Table 5.

Stakeholders should have an opportunity for input early in the process, when future land use and potential land use are first identified for a site. Later, stakeholders should have input into the drafting of the IC, including the development of appropriate IC conditions, and assignment of responsibilities for future monitoring, maintenance and enforcement. For any IC, site managers and site attorneys are encouraged to help arrange a "common understanding" among IC stakeholders. This common understanding enables the site attorney or manager to confirm that all parties are aware of and fully understand their respective roles, responsibilities, and legal authorities. Details of such arrangements should be included in an ICIAP, stewardship plan, or other type of agreement, such as a memorandum of agreement or understanding, permit, or consent agreement.

Table 5. Typical stakeholder concerns about ICs and affected groups

	Stakeholder Concerns									
Stakeholder groups	Property Values	Takings (Loss of Value)	Concern for Human Health & Environment	Property Devaluation	Disclosure	Public Perception	Blight	Loss of Revenue Generation	Long-Term Stewardship	Liability

Current subject Property owners	X	X	X	X	X	X	X		X	X
Future subject property owners	X	X	X	X	X	X	X		X	X
Neighboring property owners and tenants	X	X	X	X	X	X	X		X	
Tenants			X		X	X			X	X
Local, Tribal, State Government	X	X	X	X	X	X	X	X	X	
Regulatory Agencies			X						X	
Oversight Agency			X		X	X			X	
Construction, Utility, and third party Workers,			X						X	X
Financial Institutions	X	X		X						X
Insurance Companies					X				X	
Citizens Groups and Nongovernment Organizations			X	X	X	X	X	X	X	
Nearby Sensitive Receptors			X						X	
Developer	X	X	X	X	X	X	X			X
Redevelopment Agencies	X	X	X	X	X	X	X	X	X	X
Realtor	X	X		X		X	X			
Consultants			X						X	
Responsible Party	X									

This section describes methods and techniques available for reaching out and communicating with stakeholders. A push-pull outreach and communication approach provides maximum outreach to stakeholders and both are necessary for a successful program.

A successful and comprehensive IC outreach program provides all stakeholders with ready access to adequate, easily understood, and up-to-date information. Effectively engaging stakeholders includes routinely evaluating outreach strategies, building on successes, and assessing and updating relevant stakeholder information needs.

Outreach Communication Methods

Stakeholder outreach and the communication of risks and information associated with contaminated sites is typically initiated early in the site remediation process, sometimes as a result of emergency responses, or as part of notifying stakeholders of existing contamination during various phases of assessment, investigation or remediation. Outreach and communication (notification) typically continues, often mandated, into the long-term stewardship phase associated with ICs.

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Various communication methods are available to those required to, or interested in, providing information to the public and other stakeholders. Sometimes communication methods are mandated by federal, state or local laws (with or without specific requirements or guidance) although are also done simply as part of good corporate or governmental policy or being a good steward or neighbor. Guidance for community outreach can be found in many sources that provide recommendations or requirements under various state or federal programs, including:

- California Department of Toxic Substances Control's (DTSC) Public Participation Manual (California 2001)
- USEPA Superfund Community Involvement Toolkit.(USEPA 2013)
 - USEPA Community Involvement Plan (CIP) guidance - found in the Community Involvement Toolkit
 - USEPA Superfund Community Involvement Handbook - found in the Community Involvement Toolkit

Additional resources of information for planning for stakeholder engagement are widely available (ITRC 2014). Many resources for planning and implementing stakeholder engagement plans, action plans or other means of disseminating information have many common themes and recommendation. Most recommendations or requirements include knowing: your community or audience; who your stakeholders are; stakeholder preferences for communication; what information is being communicated (and at what level of sophistication) and various contingency plans. Information relating to ICs is generally contained within the IC documentation. Therefore, additional communication and outreach may only need to be able to explain the meaning of the IC in terms that the community understands.

Communicating information related to contaminated sites, or specifically relating to ICs, may take many formats, from simple to sophisticated, and are discussed below.

Specific Communication Methods and Techniques for ICs

State and local governments accomplish the job of introducing ICs and maintaining awareness of them using several tools. Two general approaches are used depending on the constraints posed by the IC, the type of IC (see Section 1.2), and the affected stakeholders. Agencies may 'push' information to the affected stakeholders using methods such as letters, public notices, and signs or they may provide information where affected stakeholders may 'pull' the IC information from various forms of data bases. The level of outreach required may vary and may be specific to the type and location of the IC, the risk presented by the site, the location of the site, and the level of engagement of affected stakeholders. Many ICs are negotiated agreements and the circumstances under which they are introduced are variable. The following examples describe how methods for stakeholder outreach may be scaled to the situation in which the IC is implemented:

Direct Outreach (Push)

Often, the involvement of stakeholders occurs as part of the federal or state-led process, which has built-in public outreach components. This public outreach process may occur as required under Superfund, RCRA or State equivalents, UST (Underground Storage Tank) or other federal or state environmental or resource management programs.

Response-Action Related

The RCRA corrective action permit process, or a hazardous waste disposal permit processes are subject to public hearings and the IC outreach may be conducted during that effort. Often the stakeholder outreach process is conducted through community oversight groups engaged in the Superfund or permitting process, such as Restoration Advisory Board (RAB) or

Evidence of Potential Contaminated Soil Disturbance

A "No Further Action" determination was granted for a property in Waipahu, Hawaii in 2006 with an IC restricting soil contact and excavation due to the presence of contaminated soil. This was complimented by the use of an asphalt cap engineered control which demarcated the contaminated soil area. The property was subsequently redeveloped. A site visit by Hawaii Department of Health (DOH) found, the site occupied by a commercial tenant. The asphalt cap appeared to be intact, although evidence of past excavation was apparent (for example, visible cold-joints in the cap). Depths of the excavations were not available, so it could not be determined if contaminated soil had been disturbed. During discussions between Hawaii DOH staff and the property manager it was determined that the property manager was not aware of the presence of contaminated soil at the property and was not aware of the land use covenant; see Appendix A-1.3.

Citizen Advisory Board (CAB)s. Under RCRA, outreach takes the form of utilizing the facility mailing list and sending letters of notification to the listees. However, other programs that require response action, such as UST removal voluntary cleanup programs and vapor intrusion investigation may be more common and may not have a required stakeholder outreach requirement. In these cases, a more direct correspondence from the oversight agency to the affected property owners or occupant is required. Direct outreach may also take the form of presentations to city officials, community associations; state well drillers associations, utilities, etc. Sometimes ongoing outreach to affected communities or property owners is accomplished as part of an annual inspection regime that may be required on the property. Direct outreach may be the sole means of outreach in and of itself, or may be combined with some of the other techniques listed below.

Signage and Direct Notification

Some sites exist that are deemed to require some more assertive notification. For example, an unexploded ordnance (UXO) site will require more assertive ongoing action, including signage on the property itself and direct notification of neighbors. Areas where tenants could be at risk, such as those whose homes may be overlying groundwater contamination areas and subsequent vapor intrusion exposure, may also require more assertive notification.

Letters of Notification

The project manager or other involved party may opt to send letters of notification to any known affected stakeholders such as community members, tenants or neighbors, or any other persons implementing the controls. Sometimes this is accomplished by requiring the landowners to be principally responsible for notifying neighbors or other affected parties.

Public Notices

Public notices may be placed in the local media (such as newspapers, periodicals, or municipal web sites). Some states require that information regarding a prospective IC is published on the agency website, or in local venues, and a 30-day public comment period is required before any IC is implemented.

Fact Sheets, Flyers, posters, newsletters

In instances where mailing lists are unavailable or a general notice is required over a broad area, IC information can be distributed to communities using a variety of informational devices. These may accompany public notices, be available during meetings, posted in routine businesses within the general area or mailed.

Personal Visits, Telephone, and Email Notification

When other methods of outreach are unavailable or ineffective, or when the risk may be high enough to warrant, personal visits or direct communication may be necessary.

Excavator Notice Through One Call Systems

There are 60 million excavations tracked each year, many of which occur near ICs sites. An excavator typically, at least two days prior to an excavation, is obligated to notify the state-sanctioned utility clearance system by dialing 811.

Several states participate to generate an advisory to an excavator through participation in the state utility clearance system. An excavator automatically receives an advisory based on a call to the one-call system in conjunction with the state's membership in their one-call system. Third party technology solutions, like *Dig Clean*, simplify the data process, as the software approach is consistent from state to state (Figure 7 and Figure 8).

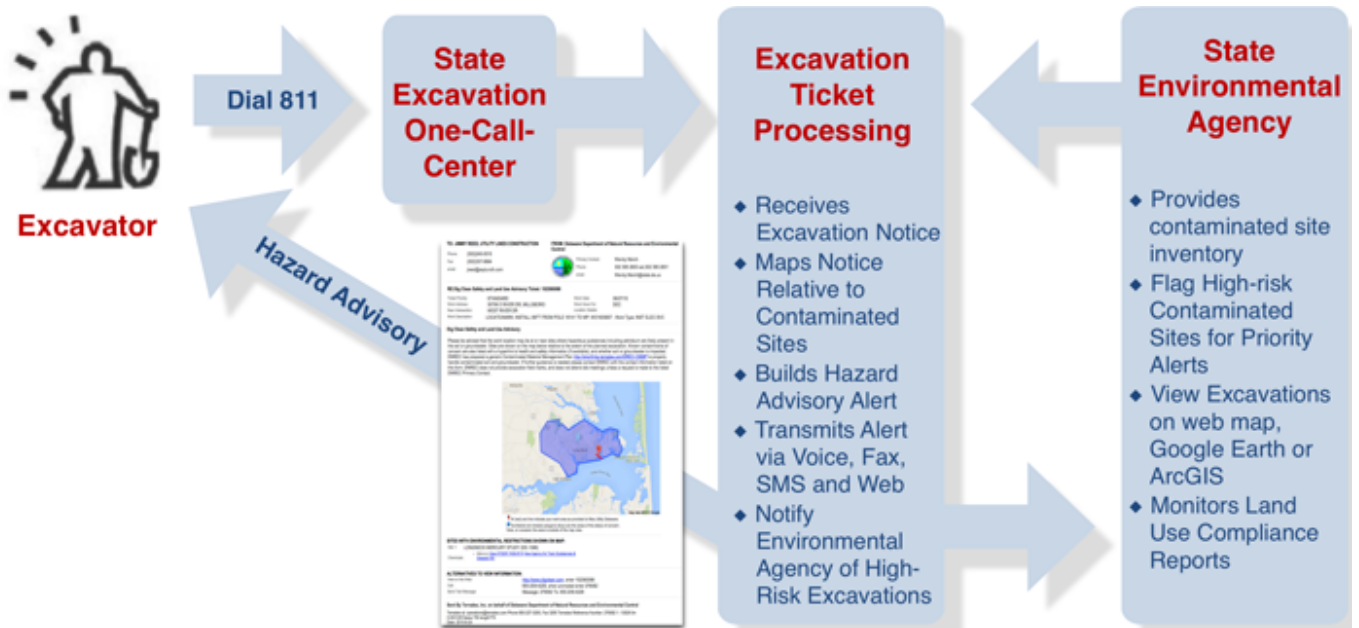


Figure 7. An example of a third party approach to making information on ICs available to stakeholders.

Source: Terradex

TO: JIMMY REED, UTILITY LINES CONSTRUCTION

Phone: (302)245-
 Fax: (302)337-
 email: jreed@.com

FROM: Delaware Department of Natural Resources and Environmental Control

Primary Contact: Wendy March
 Phone: 302 395 2600 ext.302 395 2601
 email: Wendy.March@state.de.us

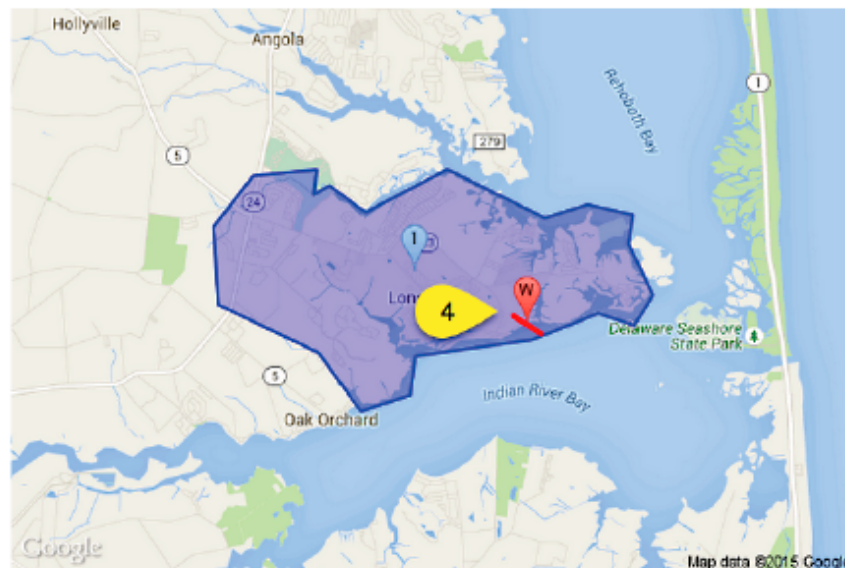
RE: Dig Clean Safety and Land Use Advisory Ticket: 152360088

Ticket Priority: STANDARD
 Work Address: 35758 E RIVER DR, MILLSBORO
 Near Intersection: WEST RIVER DR
 Work Description: LOCATE/MARK: INSTALL 90FT FROM POLE 16141 TO MP: WO1605657 . Work Type: INST ELEC SVC

Work Date: 08/27/15
 Work Done For: DEC
 Location Details:

Dig Clean Safety and Land Use Advisory

Please be advised that the work location may be at or near sites where hazardous substances including petroleum are likely present in the soil or groundwater. Sites are shown on the map below relative to the extent of the planned excavation. Known contaminants of concern are also listed with a hyperlink to health and safety information (if available), and whether soil or groundwater is impacted. DNREC has prepared a generic Contaminated Material Management Plan on <http://shortlinks.terradex.com/DREC-CMMP> to properly handle contaminated soil and groundwater. If further guidance is needed please contact DNREC with the contact information listed on this form. DNREC does not provide excavation field marks, and does not attend site meetings unless a request is made to the listed DNREC Primary Contact.



W (red) and line indicate your work area as provided to Miss Utility Delaware.
 Numbered and shaded polygons (blue) are the areas of the site(s) of concern.
 Note, on occasion the area is outside of the map view.

SITES WITH ENVIRONMENTAL RESTRICTIONS SHOWN ON MAP:

Site 1: LONGNECK MERCURY STUDY (DE-1388)
 Chemical: Mercury [View ATSDR 7439-97-6](#) [View Agency for Toxic Substances & Disease Info](#)

ALTERNATIVES TO VIEW INFORMATION:

View on the Web: <http://www.digclean.com>, enter 152360088
 Call: 650-209-4229, when prompted enter 276062
 Send Text Message: Message: 276062 To: 650-209-4229

Sent By Terradex, Inc. on behalf of Delaware Department of Natural Resources and Environmental Control

Terradex at: operations@terradex.com Phone 650-227-3250, Fax 3255 Terradex Reference Number: 276062 1: 13528 0m
 0.00312913area 750 length779
 Date: 2015-8-26

- 1 Excavator can learn a point-of-contact for any contaminated site.
- 2 Agency staff sees timing and description of excavation
- 3 Excavator learns summary hazards, and can be linked to soil management plans.
- 4 Map delineates site boundary and location of excavation.
- 5 Excavator can plan for health and safety using hyperlinks to site chemical health and safety information.
- 6 Excavator finds alternative ways to share and find the information in the advisory.

Figure 8. Typical excavation advisory.

New Property Owner Notification Through Tax Roll Updates

New property owners may not be aware of the impact of an IC on their property. In California for Department of Toxics Substance Control (DTSC) and across several states on behalf of RACER Trust, new property owners are notified of the occurrence of an IC on their property.

Passive Outreach (Pull)

In some cases, the residual risk posed by the subject property is deemed minor, and all that is required for stakeholder outreach is to notify the local health department and to file the ICs in the appropriate county property records. City clerks or local health departments may post notices in their offices.

Some states or local governments have developed geospatially referenced ICs to a database that posts to a public webpage with links to technical documents describing the ICs that are available to the public. These map-based applications can be a useful and an effective way for citizens to access information about ICs efficiently. Other web-based public notification tools could include a registry summary report that is accessible to any member of the public. Information about the properties may be presented in tabular form or on a map with links to information about the IC and relevant information that may be of interest to a viewer. Some states have monthly register notices, in which ICs could be published.

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Social Media and Search Engine Optimization for Environmental Discovery

Social media and search engine optimization facilitate the discovery of environmental content by a potentially affected community. These tools are helpful when many of the potentially affected parties would not normally know that an agency website exists, and further that the website provides information associated with environmental health.

Organic search discovery, paid search discovery, and social media all facilitate the public web resources for finding ICs. An IC website can be prepared for discovery concurrent with taking steps to promoting the website. Social analytics encompasses the tools to monitor the performance of site discovery. Modern search engines rely on a website to be indexed so that the applications applied by these companies such as Google can find and characterize content.

Figure 9 describes the public discovery of the IC registry via organic, paid, and social search, and the performance of these search tools is monitored through social analytics.

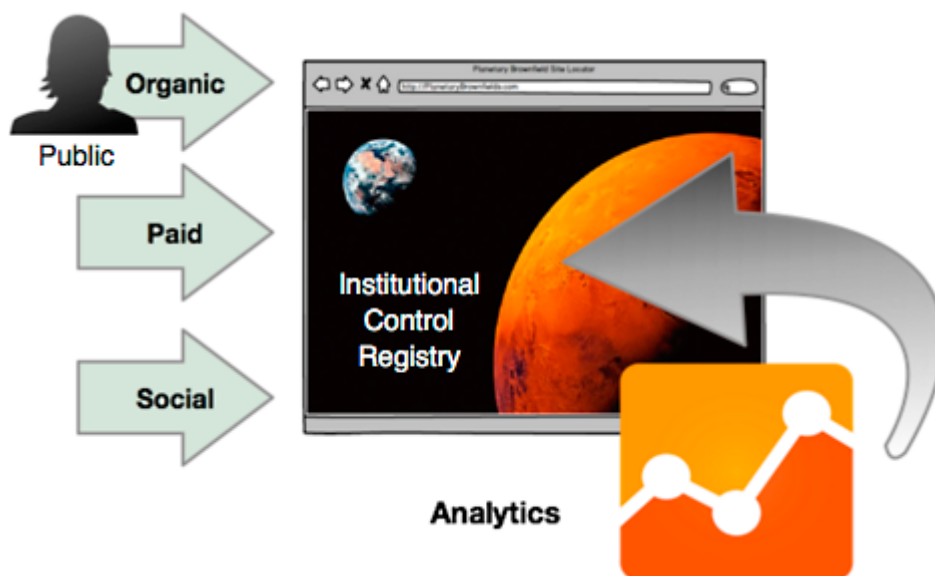


Figure 9. Discovery using registry.

- **Preparing the website for search and public discovery.** A first step is preparing a website for discovery. These activities ready the site for content assimilation by search engines such as Google or Bing. Websites are “crawled” by programs that are able to follow hyperlinks and are able to read hidden content that is placed into

the invisible header section of a webpage.

A site map is another useful, hidden file placed on the website. The site map instructs the web crawler where to find individual pages, such as each IC. This is helpful because often there are no direct links on an IC registry, but rather an IC is only presented after entering search parameters. The site map allows the web crawler to see all ICs. The web crawlers are intelligent regarding content, so the use of keywords within the website narrative will prioritize them by the web crawling agents.

- **Organic search discovery.** This form of discovery is encompassed by a normal search in search tools like Google. The ranking of search results is based on prioritization tools held by the search company. The higher ranking is earned by the reputation of the website (as based by other links to the website across the internet), and the quality of the web content. Website preparation returns the greatest dividends in organic search.
- **Paid search discovery.** The discovery of the website is also facilitated by payment to the advertiser or search engine. When paid search is organized, one can select a target audience, and set a budget for the cost per click (CPC) or cost per impressions (CPM). A campaign is developed around a particular website feature and a total or daily budget is set based on CPC or CPM choices.
- **Social web discovery.** Social media tools such as Facebook or LinkedIn allow the creation of internet pages within their application environment. A webmaster could maintain a separate page on a social media site that would contain links to the IC website. By posting stories and paying to sponsor these stories, members of the public can be informed of the website within a social media context. They then could choose to view the underlying website, or stay within the social application.
- **Social analytic tools.** These tools can be used to monitor the effectiveness of website discovery, and discern whether organic, paid, or social search tools are generating the greatest traffic to the website. Within social analytics is a sophisticated lexicon of terminology that allows one to characterize the reach as well as engagement in a website. Some tools are anchored to the website being publicized, such as Google Analytics, while others are organized to serve promotion within a social media application such as Facebook. As the data are reviewed, the search engine effectiveness is optimized.

IC Summary Cover Sheet

A common IC cover sheet serves to inform the public and environmental professionals. One problem with ICs is that the critical and relevant information is encompassed in legal terminology that is not readily understood by the public. A uniform coversheet summarizes the location of the control, the restrictions put in place through the controls, the location and boundaries of the controls, and introduces the parties involved in the implementation of the control. As boundaries are described, common geographic standards such as latitude and longitude are used to delineate the boundary, even though the enforceable boundaries are based upon metes and bound legal descriptions or property identification numbers (PIN or APNs). PINS are subject to revision as properties are split and merged, and do not provide an enduring approach to describing IC boundaries.

Third-Party Data Sharing

Third party data sharing encompasses the syndicating or use of reputable environmental data by commercial, government, or nonprofit entities. The entities typically carry an audience that they are serving. An example of a commercial entity would be a Phase I environmental data provider that informs the real estate market of ICs. A government entity could be a local government or water agency that informs permit applicants of controls associated with property or water well development. A nonprofit may choose to inform public stakeholders of residual environmental contamination affiliated with an environmental justice mission they fulfill. Any agency that seeks to offer data sharing can consider web services that allow these parties to download or stream the environmental data. A representative download approach might be a Geographic Information Service (GIS) file, while a web service might be a Web Feature Service that serves environmental content in real time. The relevance of the Institutional Control Data Standard is clarified as many third party data services assimilate environmental data from multiple states, and having a common data standard eases their work.

Current Status of Outreach

Survey results indicate that a majority (65.2%) of states conduct some sort of outreach when an IC is implemented. The overwhelming majority of states report that their primary outreach contact is the current landowner (89.4%), with less than

half (42.6%) contacting new landowners and roughly 20% of states surveyed contacting tenants and adjacent landowners. Over half of states (61.7%) surveyed report some sort of outreach to local government entities: but only about 20% to state government. A much smaller number of states (about 3-12%) report outreach to local citizens, such as citizen groups, homeowner's associations, or local business owners. About 2% of states reported outreach to other interested stakeholders such as realtors, banks, and developers. Consultants were reported to have received notification from about 10% of survey respondents.

Outreach Moving Forward

In the future, the role of environmental oversight agencies may shift from guiding the remediation of a site to protecting the remedy. As the focus shifts to protectiveness, agencies may find that the integrity of the remedy is entrusted to diverse stakeholders that are close or direct activities at or near the remedy. As remediation is typically directed towards engineers and environmental scientists, the relevance of outreach is often a lower priority.

Therefore, agencies may find their interest in outreach increases in order to provide for protection of the remedy, but also to avoid the publicity and regulatory problems caused by remedy failure.

Given the diverse range of stakeholders including excavators, developers, and a public with English as a first or second language, outreach is multifaceted. An agency may soon be managing multiple channels of outreach to reach the variety of stakeholders that inadvertently could affect remedy effectiveness.

Agencies may find aligned partners that could help in their mission. For example, national local government planning associations might collaborate toward finding intuitive information to the planners they serve. Daycare associations may seek standardization toward supporting a common interest that daycare not be operated above sites with residual contamination. The Phase I due diligence industry may support data standards for the disclosure of ICs and ECs.

The use of data standards is also a future possibility. Data standards allow the IC information to be inserted into the information sources of government and business. An IC search might be started with a Google search, with results appearing in local government permitting, in water well development, or as new properties are occupied. Efficient data standards are needed in order to make this information ubiquitous and understood.

Data standards can memorialize the ICs as this data become assimilated into multiple commercial and public data services, each with their own copy that can persist across time. The role of the IC is to be a perpetual data message to future generations.

Outreach Best Practices

In order to successfully manage ICs throughout their life cycle (see Figure 2-1), robust outreach practices can provide ongoing information and continue to educate stakeholders. Best practices for IC outreach include the following components:

- **Define stakeholders.** It is critical to clearly identify who may be subject to, affected by, or have an interest in an IC and determine their relationship to specific use restrictions and the role that they play.
- **Define information needs.** Once stakeholders and their relationships to the IC have been determined, it is important to understand what motivates them, how they receive information, and whom they trust. This understanding informs future steps through the engagement process. Work to understand any barriers that could limit or prevent successful outreach.
- **Define informational component.** To the extent possible, tailor the outreach information to the needs of each stakeholder. It may be helpful to divide stakeholders into groups and subgroups and target them with information specific to their needs. (link to Appendix D)
 - Translate messages into common local languages. For example, if there is a large Spanish-speaking population, consider providing translated materials.
 - Present complex information using plain language and other means that the stakeholder can easily understand. Simplify information and use an appropriate reading level. Scientific information can be particularly difficult to comprehend for a nontechnical audience. If warranted, include the use of visual imagery.
- **Identify and implement outreach methods.** Determine methods to provide or make accessible necessary information to stakeholders. This approach can include direct and passive outreach methodologies as summarized in Sections 6.2.2 and 6.3.2, respectively. Outreach methods can be revisited throughout the lifespan of an IC to increase their effectiveness. These methods could include refocusing or strengthening those

methods already in place as well as introducing new methodologies.

- **Search and social media.** Prepare the IC registry website for organic search discovery including the use of keywords, hyperlinks and site maps. Given that a state agency generally has a high reputation, a search engine inherently prioritizes search results from an agency. Thus, focusing on organic search over paid search is a prudent and cost effective strategy to increase outreach. Social media can introduce an agency's interest to the public audience that otherwise might not consider searching for the content. Agencies can develop Facebook, LinkedIn, and Twitter accounts to publicize the content with use of keywords that would be common to the target audience.