No associated notes.

Institutional controls (ICs) are administrative or legal restrictions that provide protection from exposure to contaminants on a site. When ICs are jeopardized or fail, direct exposure to human health and the environment can occur. While a variety of guidance and research to date has focused on the implementation of ICs, ITRCs Long-term Contaminant Management Using Institutional Controls (IC-1, 2016) guidance and this associated training class focuses on post-implementation IC management, including monitoring, evaluation, stakeholder communications, enforcement, and termination. The ITRC guidance and training will assist those who are responsible for the management and stewardship of ICs. ITRC has developed a downloadable tool that steps users through the process of planning and designing IC management needs. This tool can help to create a long lasting record of the site that includes the regulatory authority, details of the IC, the responsibilities of all parties, a schedule for monitoring the performance of the IC, and more. The tool generates an editable Long Term Stewardship (LTS) plan in Microsoft Word.

After attending the training, participants will be able to:

-- Describe best practices and evolving trends for IC management at individual sites and across state agency programs

-- Use this guidance to

- Improve IC reliability and prevent IC failures
- Improve existing, or develop new, IC Management programs
- Identify the pros and cons about differing IC management approaches

-- Use the tools to establish an LTS plan for specific sites

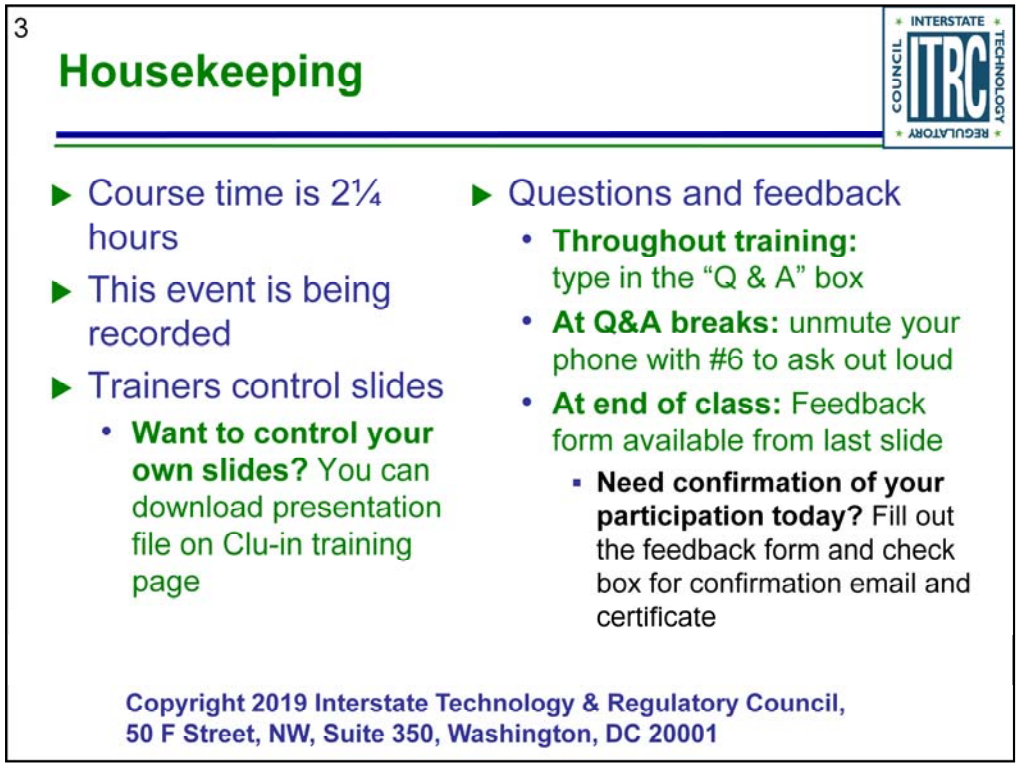
-- Use the elements in the tools to understand the information that should populate an IC registry or data management system.

The target audience for this guidance includes environmental regulators at all levels of government, private and public responsible or obligated parties (Ops), current site owners and operators, environmental consultants, and prospective purchasers of property and their agents. Other stakeholders who have an interest in a property can also use this guidance to help understand how to manage Ics.

ITRC (Interstate Technology and Regulatory Council) www.itrcweb.org

Training Co-Sponsored by: US EPA Technology Innovation and Field Services Division (TIFSD) (www.clu-in.org)

ITRC Training Program: training@itrcweb.org; Phone: 402-201-2419

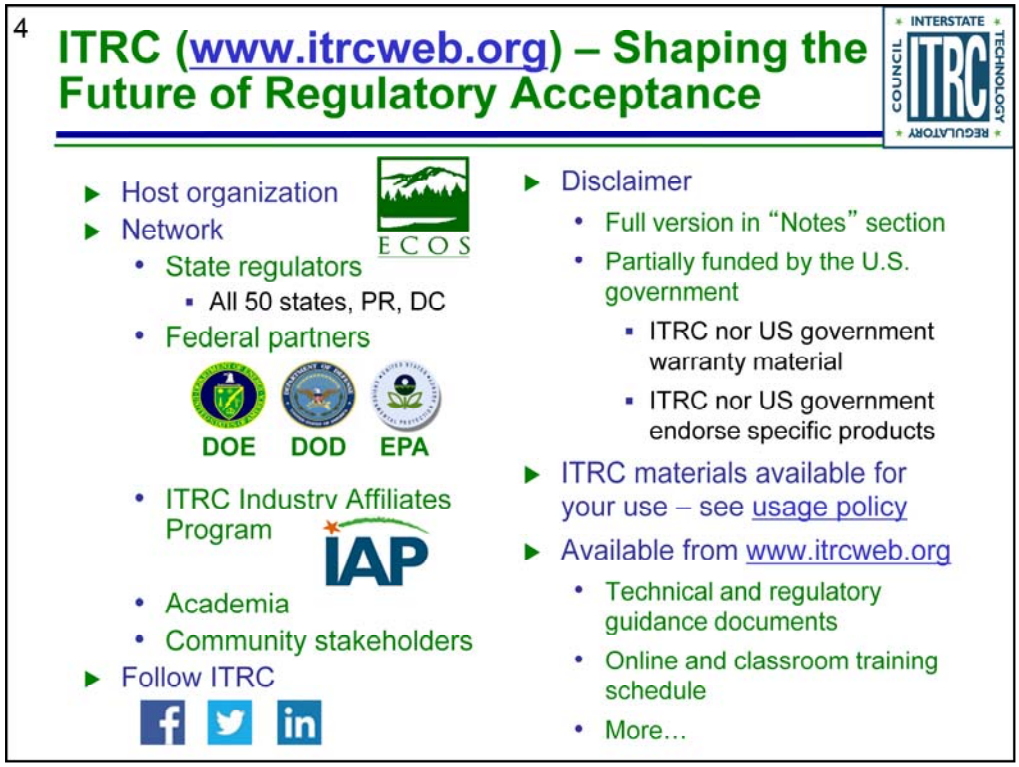


Although I'm sure that some of you are familiar with these rules from previous CLU-IN events, let's run through them quickly for our new participants.

We have started the seminar with all phone lines muted to prevent background noise. Please keep your phone lines muted during the seminar to minimize disruption and background noise. During the question and answer break, press #6 to unmute your lines to ask a question (note: *6 to mute again). Also, please do NOT put this call on hold as this may bring unwanted background music over the lines and interrupt the seminar.

Use the "Q&A" box to ask questions, make comments, or report technical problems any time. For questions and comments provided out loud, please hold until the designated Q&A breaks.

Everyone – please complete the feedback form before you leave the training website. Link to feedback form is available on last slide.



The Interstate Technology and Regulatory Council (ITRC) is a state-led coalition of regulators, industry experts, citizen stakeholders, academia and federal partners that work to achieve regulatory acceptance of environmental technologies and innovative approaches. ITRC consists of all 50 states (and Puerto Rico and the District of Columbia) that work to break down barriers and reduce compliance costs, making it easier to use new technologies and helping states maximize resources. ITRC brings together a diverse mix of environmental experts and stakeholders from both the public and private sectors to broaden and deepen technical knowledge and advance the regulatory acceptance of environmental technologies. Together, we're building the environmental community's ability to expedite quality decision making while protecting human health and the environment. With our network of organizations and individuals throughout the environmental community, ITRC is a unique catalyst for dialogue between regulators and the regulated community.

For a state to be a member of ITRC their environmental agency must designate a State Point of Contact. To find out who your State POC is check out the "contacts" section at www.itrcweb.org. Also, click on "membership" to learn how you can become a member of an ITRC Technical Team.

Kevin Schrems is a compliance and enforcement case coordinator with the Michigan Department of Environmental Quality's Remediation and Redevelopment Division (RRD), in Lansing, MI. He has worked for the Michigan Department of Environmental Quality since 2012. His expertise is in land or resource use restrictions under the Environmental Remediation (Part 201) and Leaking Underground Storage Tank (Part 213) programs, including restrictive covenants, notices, and road right-of-way instruments. Kevin also is responsible for reviewing post closure agreements as part of No Further Action submittals under Part 201. Kevin is a member of the RRD's Institutional Controls Technical and Program Support team, which develops guidance and model documents for land or resource use restrictions to assure consistent statewide implementation. He is also a member of the Interstate Technical and Regulatory Council's Long Term Contaminant Management Using Institutional Controls team, which developed a guidance document that describes the elements of an institutional control management program based on successes from established programs from states, federal agency programs, and other available innovative tools. Kevin earned a Bachelor of Science degree, with honor, in Fisheries and Wildlife from Michigan State University in East Lansing, MI in 2006, a Master of Environmental Law and Policy degree from Vermont Law School in South Royalton, VT in 2008, and a Juris Doctor degree from Vermont Law School in South Royalton, VT in 2011.

Douglas Burge is a Senior Manager for Ramboll in St. Louis, Missouri. He has worked for Ramboll (formerly Environ) since 2000 and in the environmental field since 1986. Douglas conducts complex geologic, sediment and vapor intrusion investigations throughout the U.S. and Canada with associated risk assessments and design and implementation of remedial efforts. He has experience with all aspects of health and safety related to hazardous waste site investigations and serves as the health and safety coordinator for several Ramboll offices. He has also managed creek bank stabilization projects and was the project lead for investigations of natural spring sites in the Midwest for the bottled water industry. Douglas earned a Bachelor of Science degree in Geology in 1985 from Western Illinois University and is currently a registered geologist in Missouri; licensed professional geologist in Illinois, Indiana, Tennessee and Wisconsin; licensed professional geoscientist in Louisiana, licensed monitoring well driller in Missouri (non-restricted), and a licensed monitoring well technician in Nebraska.

Douglas Soutter is a geologist with GHD, Inc. in Chicago, Illinois. Doug's environmental project experience includes geology, hydrogeology, industrial hygiene, site characterization, sampling and field methods, source identification, evaluation of remedial natenatives, remediation, the application of environmental risk systems, and the development of site-specific remedial objectives. Since 1988, he has worked on many projects which incorporated engineered barriers and institutional controls as part of remedial action. These projects have included CERCLA, RCRA, and state voluntary program sites. Doug is also proficient with database and GIS system development for multi-state projects. Doug is also active in the ITRC Geostatistics for Remediation Optimization and LNAPL Update teams. Doug earned a bachelor's degree in geology from Susquehanna University in Selinsgrove, Pennsylvania in 1986 and a Masters of Environmental Pollution Control from the Pennsylvania State University in Harrisburg, Pennsylvania in 1993. He is an Illinois Licensed Professional Geologist (LPG).

Mike Sowinski is the Vice President of Terradex, a California company focusing on technology services for land activity monitoring of environmentally sensitive sites. He brings over 20 years of engineering and legal experience on environmental cleanup, environmental compliance, property redevelopment, and pollution control (i.e., CWA, RCRA) and is an expert in the niche area of "institutional controls" and long term stewardship. Prior to joining Terradex, Mike practiced environmental law where he advised and litigated on behalf of local governments and private clients on cleanup, institutional controls, brownfield, water pollution, land use, and other environmental matters. His experience also includes a career in environmental consulting where he consulted to federal and state environmental agencies, as well as private clients, on environmental cleanup and compliance matters, ranging from broad-scale program advising on cleanup program and long term stewardship issues, to site-specific brownfield redevelopment, cleanup, water pollution, and environmental compliance matters. Further, Mike has been an expert witness on institutional control issues in a federal court matter. He speaks and writes regularly on environmental cleanup, brownfield, and stewardship matters and, among other things, he recently co-authored a law review article on CERCLA liability defenses in the Virginia Environmental Law Journal. Additionally, Mike leads the ASTM "Continuing Obligation" task group. Finally, he has participated as an Industry Affiliate on the ITRC Team for "Long Term Contaminant Management Using Institutional Controls" since 2013, and in 2014 he received ITRC's Industry Affiliate Award for outstanding contributions. Mike earned both a bachelor's degree in 1991 and master's degree in 1995, in Civil and Environmental Engineering, from the University of Maryland in College Park, MD. Mike also earned a Juris Doctorate from Vermont Law School in South Royalton, VT in 1998.

Lynn Bailey has been an Environmental Health Specialist for the Hawaii Department of Health (HDOH), Hazard Evaluation and Emergency Response Office in Honolulu since 2008. In order to outreach to workers who encounter environmental contamination issues during construction projects, Lynn worked with a consultant to design and deliver Contaminant Awareness Training (CAT). Since 2011, more than 20 CAT audiences have learned to identify contamination during the planning phases of a project, understand release reporting requirements, and learn best management practices that can prevent small problems from becoming larger ones. Lynn also provides regulatory oversight to encourage safe management of contamination during construction of the 20-mile Honolulu Rail Transit Project, a multi- billion dollar project. Additionally, under the State Response Program she assisted with research projects and guidance development. Lynn also is Hawaii's State Engagement Program representative to the Interstate Technology and Regulatory Council. Prior to joining the HDOH, Lynn assisted with the Columbia Shuttle Disaster and Hurricane Katrina responses and was site safety officer, project manager, and/or Project Quality Control Manager for numerous sampling and/or remediation projects. Lynn earned a bachelor's of science in environmental science with chemistry focus from Hawaii Pacific University in Honolulu, HI.

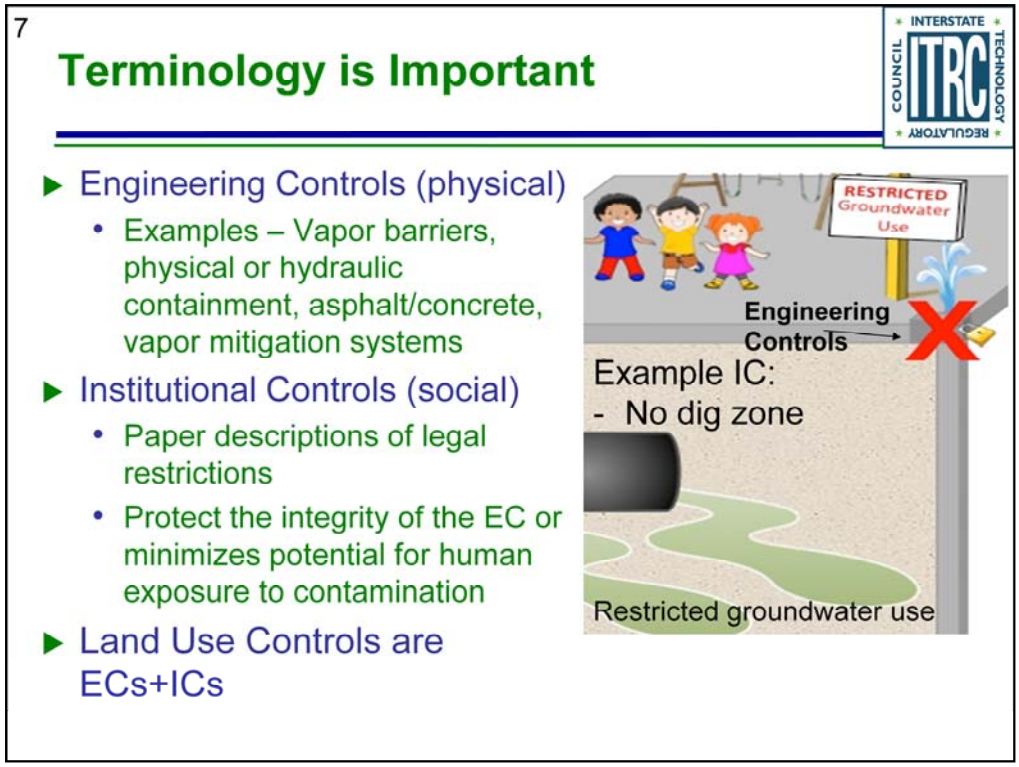
6

Institutional Controls (ICs) – Important Role in State and Federal Remediation Programs

- Mid-1990s ICs use grew through use of Risk-based Corrective Action
- ICs typically used after a site receives "No Further Action" status from regulatory program
- ICs fueled redevelopment of Brownfield properties
- ITRC's 2008 document *Overview of Land Use Control (LUC) Management Systems* describes types of ICs in detail

For many of you on the call, the concept of "leaving contamination in place" was previously not an acceptable way of achieving closure under most regulatory programs. Most programs required contamination to be cleaned up to background or native concentrations. Since the mid 1990s, Risk Based Corrective Action and the use of ICs has become an important part of many federal, state, and local cleanup and brownfield programs. ICs are generally administrative or legal controls that help to minimize the potential for exposure now and in to the future to contamination and protect the integrity of the remedy.

ICs have helped fuel redevelopment and reduced the cost and time to achieve closure at many sites. As an aside, Michigan has the tag line R4R or remediation for redevelopment highlighting the importance of redevelopment.



The terminology and process descriptions used in this guidance are consistent with those used in the Superfund Program.

The picture on the right half of the screen also illustrates the differences between

Engineering Controls (ECs) -

Examples - Vapor Barriers, physical or hydraulic containment, asphalt/concrete, vapor mitigation systems

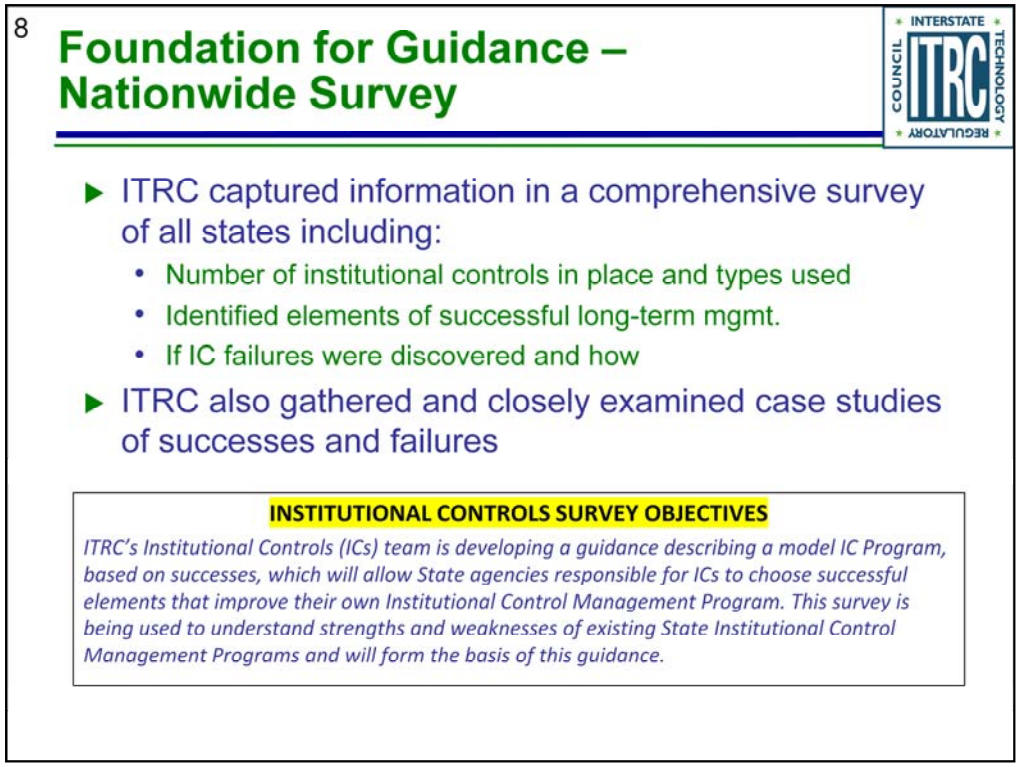
Institutional Controls (ICs) -

Paper descriptions of legal restrictions

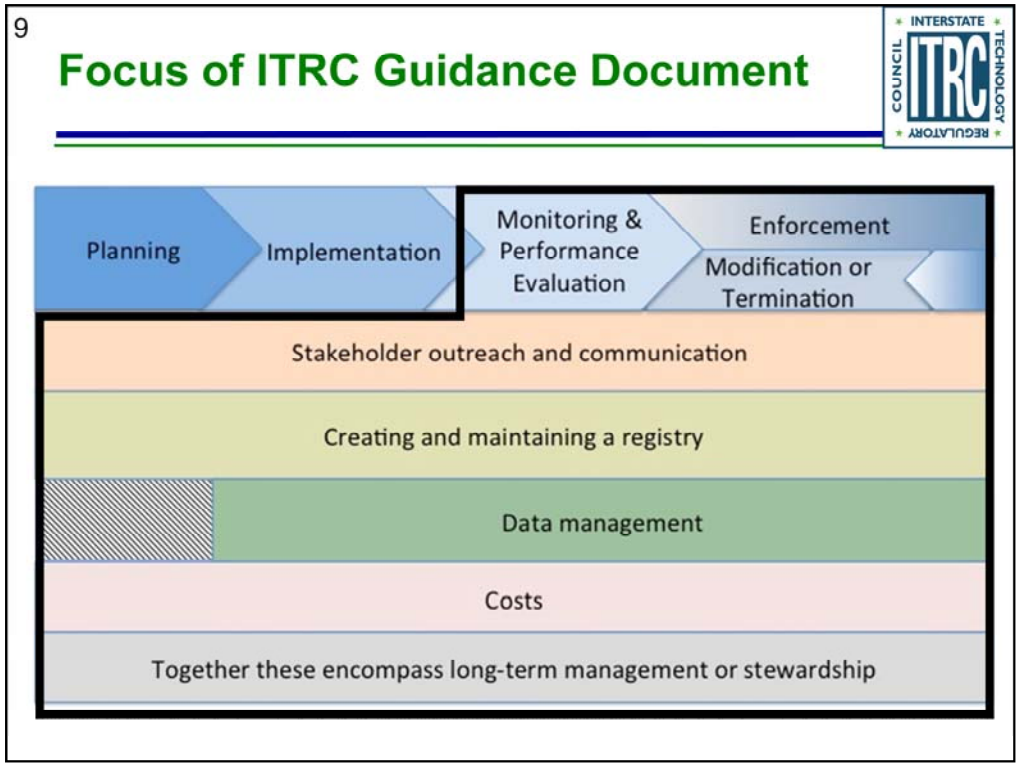
Protect the integrity of the EC or minimizes potential for human exposure to contamination

Both are incorporated under the umbrella of land use controls

Land use controls (LUCs) are used to provide protection from exposure to contaminants that exist or remain on a site.



Upon initiating the process of developing this guidance, ITRC understood that state agencies use ICs at contaminated sites as remedies; however, we did not know the extent of their use. ITRC also did not understand various state agency IC selection and implementation processes or the regulatory framework governing the ICs. ITRC also wanted to gather information to determine how states manage and fund the ICs once they are in place along with any data indicating that state agencies performed monitoring, tracking, enforcement, and stakeholder outreach. To better understand these questions, ITRC surveyed existing state programs to determine what makes these programs effective and what issues affect the durability of ICs. The survey was submitted to the ITRC representatives for all 50 states, and 44 responses were received. The survey responses have been used to identify which elements help maintain or create a more effective long-term IC program.



This guidance focuses on ICs already in place rather than on the details of selecting ICs. Properly selecting and implementing ICs, however, is essential for long-term durability and effectiveness. Therefore, this guidance provides a summary of some of the key components that are considered when choosing an IC.

During this presentation, and in the guidance document, you will see this diagram which illustrates the five essential elements of the IC life cycle. Beneath the elements of the life cycle, we list critical components that must be considered to achieve a successful IC management program. These essential elements and components essentially formed the structure of the guidance document and various sections in the guidance document address each of these elements. Together, these create an effective long-term stewardship program.

As the presenters transition between each element, you will see this figure reappear on the screen highlighting the next topic.

This guidance is relevant to environmental regulators at all levels of government, private and public responsible or obligated parties, current site owners and operators, environmental consultants, and prospective purchasers of property and real estate agents. Additionally, stakeholders who have an interest in a property will find this guidance helpful in understanding the elements required to manage ICs.

This guidance assists those who are responsible for stewardship of ICs by describing critical elements and best practices for an IC management program. Much of this document is based on the successes and lessons learned from established state and federal agency programs.

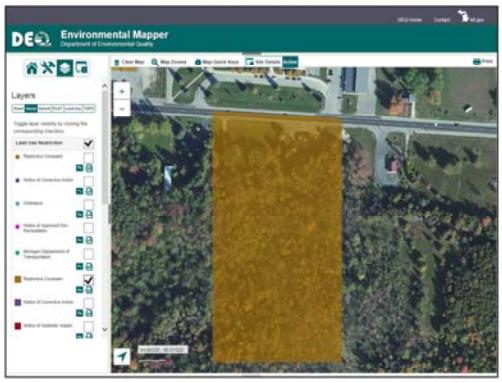
ITRC has also developed a downloadable tool that can help to create a long-term stewardship plan tailored to specific sites. This tool incorporates the various IC management practices presented here to assist in the early stages of site-specific IC planning.

Failure of Institutional Control – Inadequate Communication/Monitoring

Michigan Example

Background:

- IC recorded in 1997 on 1 parcel – LUST release
  - Land use (commercial) & GW restriction
- 2015 - prospective purchaser identified property previously split
  - 1 parcel became residential.
  - DW well installed in 2001

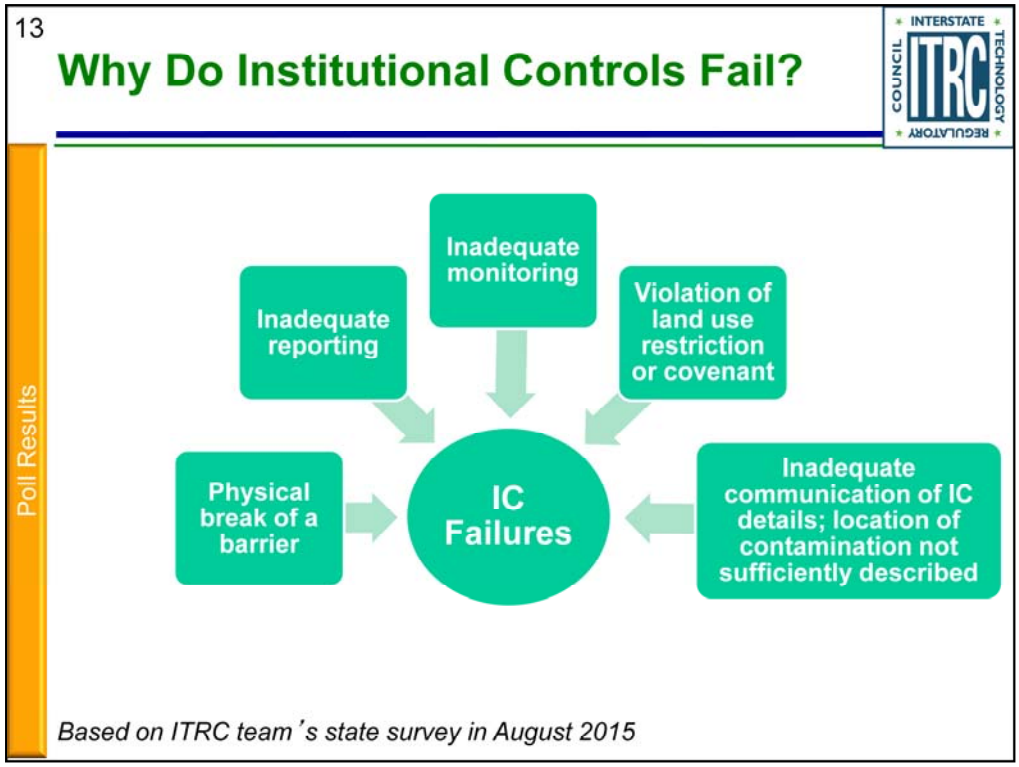


Above – Restricted area depicted from MI Environmental Mapper program. IC available for download.

Failure of Institutional Control - Inadequate Communication/Monitoring

Michigan Example

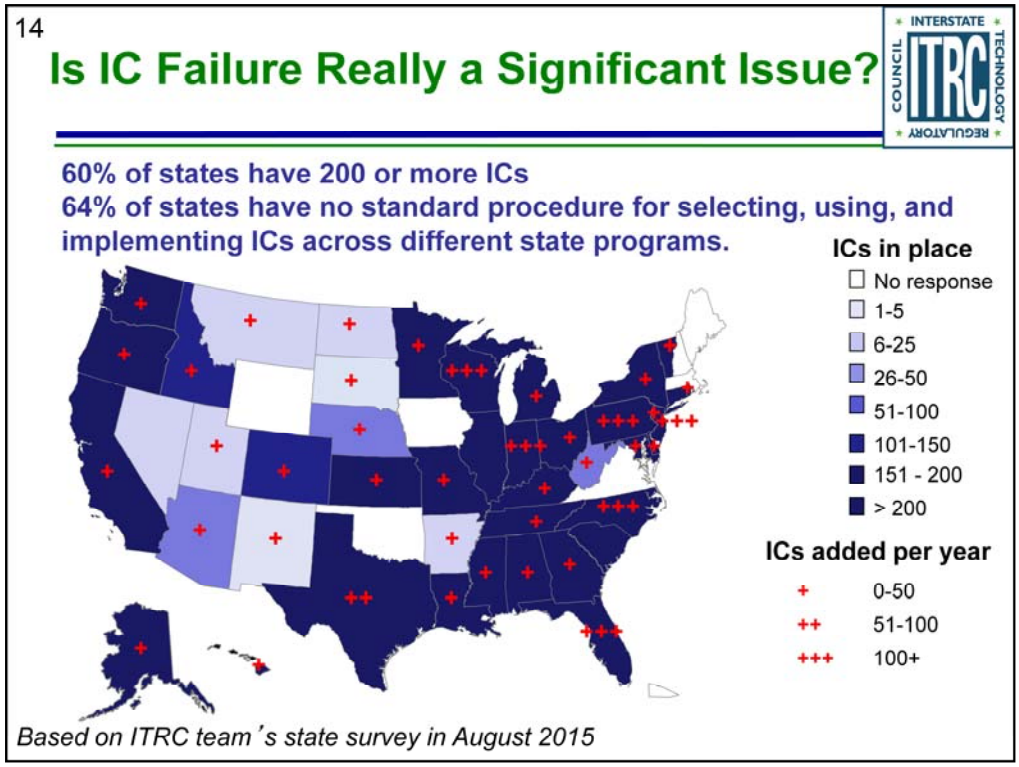
- New residence & DW well found to be side-gradient of contaminated GW plume.
- Violations did not result in long-term exposure
- Regulatory agency has instituted an outreach program to communicate resources to well-permitting agency.
- LTS principals would have prevented this failure.



We just heard about one example of why ICs fail. What are other examples?

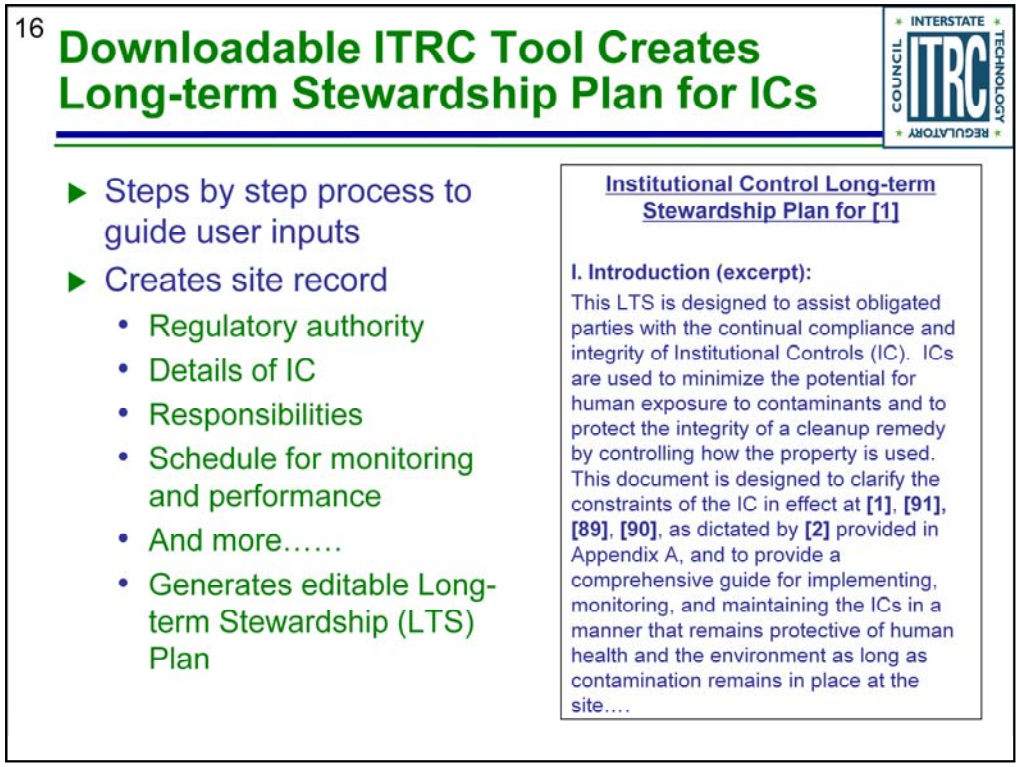
Bring up poll results from start of presentation and review audience's answers to poll questions.

If needed - To illustrate a failure in my state (Michigan), a prospective purchaser of a property was conducting due diligence prior to purchasing the property. The property was the location of a former leaking underground storage tank that was closed in 1997 with an IC that restricted land use and groundwater use. During the due diligence efforts, the prospective purchaser found that the property had been split into two parcels, with one parcel now being zoned as residential, with a home built and a new drinking water well installed in 2001. With no monitoring of the institutional control, this circumstance went undetected by the regulatory agency until 2015 when a prospective purchaser called the agency asking about the closure and land use restrictions concerning the well.



What makes IC failure a significant issue is that the potential for exposure grows as more ICs are used and not properly managed and monitored. To illustrate the universe of ICs used across the nation, this map indicates that 60% of states that responded to our survey stated they have over 200 ICs in place in their states. But, what we've seen is, that programs to manage ICs vary widely, and some states do not have any formal IC management program.

There are solutions to prevent failures of institutional controls which is presented in ITRC's new guidance document and discussed in today's presentation. 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. Stakeholder outreach discussed later in the presentation includes identifying and involving internal and external stakeholders throughout the IC life cycle.



In addition to the guidance, ITRC went one step farther and developed a downloadable tool that takes users through the process of planning and designing IC management needs. This tool can help to create a long lasting record of the site that includes the regulatory authority, details of the IC, the responsibilities of all parties, a schedule for monitoring the performance of the IC, and more. The tool generates an editable Long-term Stewardship (LTS) plan in Microsoft Word. If you are a consultant or even a agency regulator, you will really want to stay tuned to near the end of today's session where we will provide a brief tutorial on this downloadable tool.

Up next is Doug Burge, an industry representative from Ramboll, who will be discussing planning and implementation, and then stakeholder outreach.

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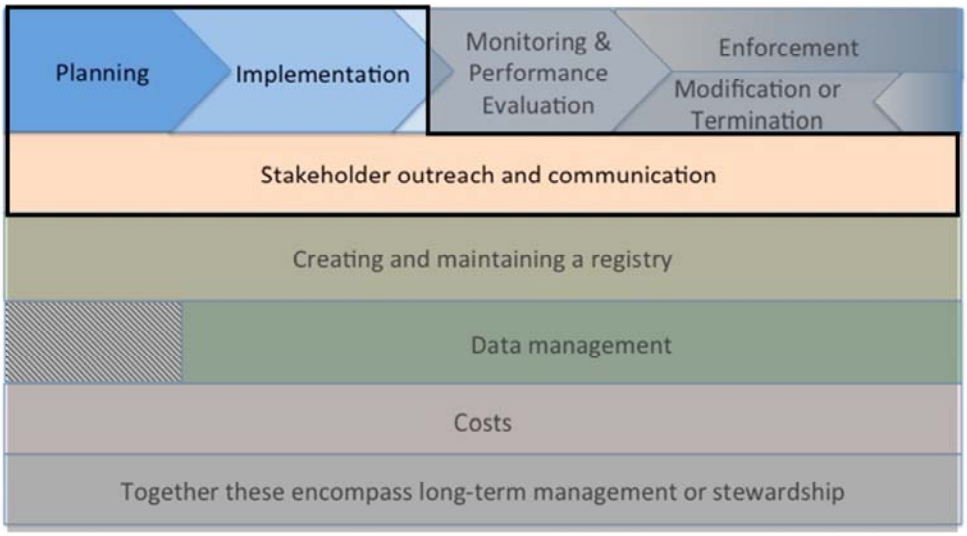
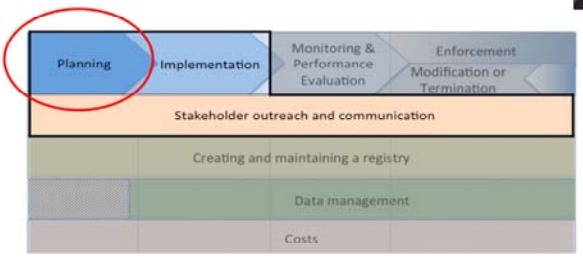
Essential Elements to Consider When Managing ICs



Planning

- Assess site characteristics
- Essential for long-term success
- Prevents post implementation problems
- Consider full life cycle costs
  - Cost of IC life cycle vs. full remediation costs



Implementation

- Formalize the IC
- Develop a long-term stewardship plan

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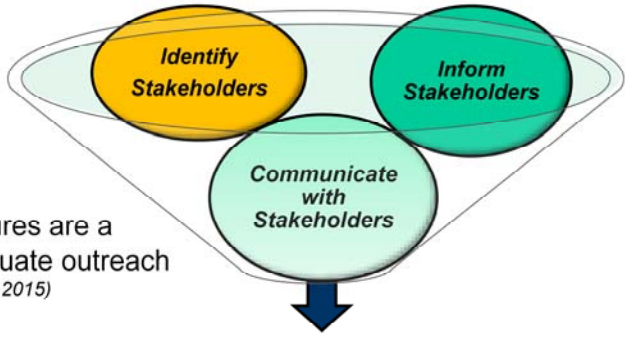
Ingredients for Successful Outreach

Critical Components Throughout Full IC Life Cycle



41% of IC failures are a result of inadequate outreach
(ITRC Survey, August 2015)

Successful Outreach!

Outreach Success = IC Success

Outreach Failure = IC Failure

Who are Stakeholders?

- **Stakeholders** (Table 5 of our ITRC Guidance)
  Affected or interested parties including:
  - Subject property owner
  - Future property owner
  - Adjacent property owne
  - The community
  - Regulatory agencies
  - Tenants
  - Financial institutions
  - Environmental consultants
  - And many others…

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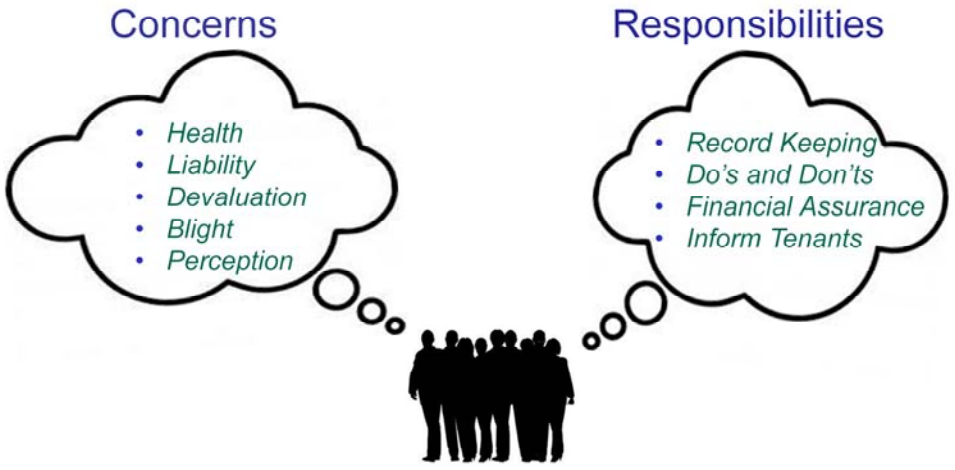
Where Do Stakeholders Fit In?



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Where Do Stakeholders Fit In?

Concerns

- *Health*
- *Liability*
- *Devaluation*
- *Blight*
- *Perception*

Responsibilities

- *Record Keeping*
- *Do's and Don'ts*
- *Financial Assurance*
- *Inform Tenants*

Remember;
Stakeholders are often a wide range of individuals and groups and so are their concerns, responsibilities and information needs.

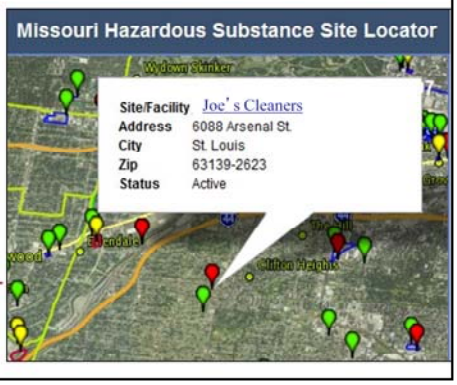
Multiple Communication Methods

Direct Outreach (Push)

Simple signage to sophisticated notification

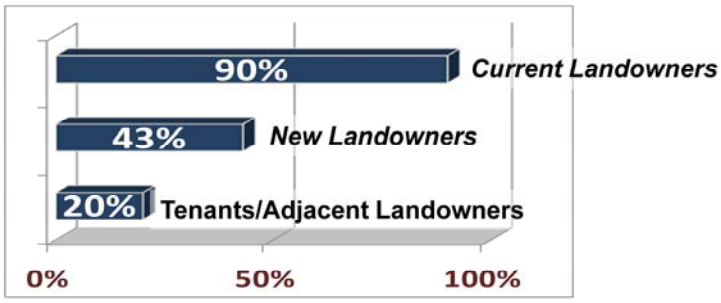
Passive Outreach (Pull)

Accessible and searchable information



Stakeholder Outreach Needs Improvement

Current Status of Outreach *(ITRC Survey, August 2015)*



- **Use Best Practices to Improve Outreach!**
  - Determine Stakeholders & Information Needs
  - Make IC's Easy to Find and Understand
  - Use our ITRC Long-Term Stewardship Plan

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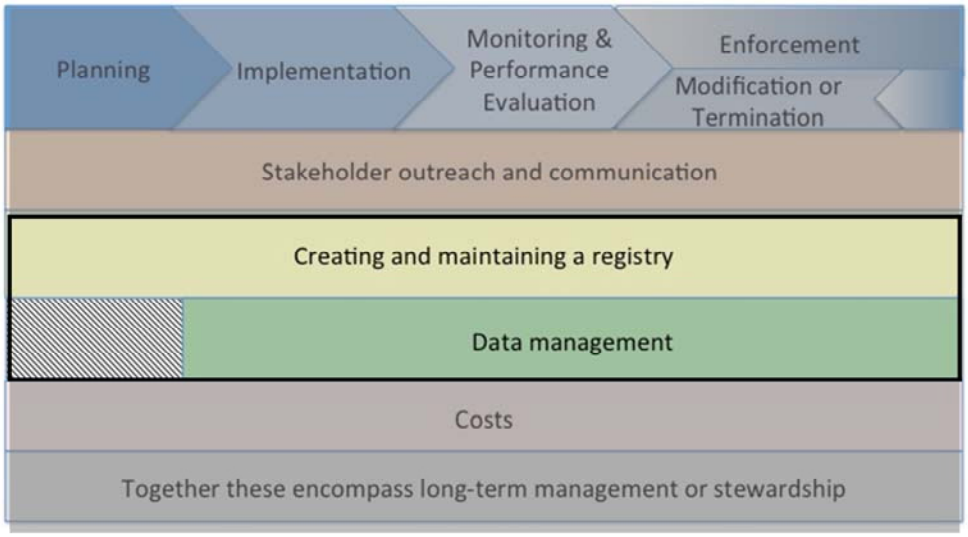
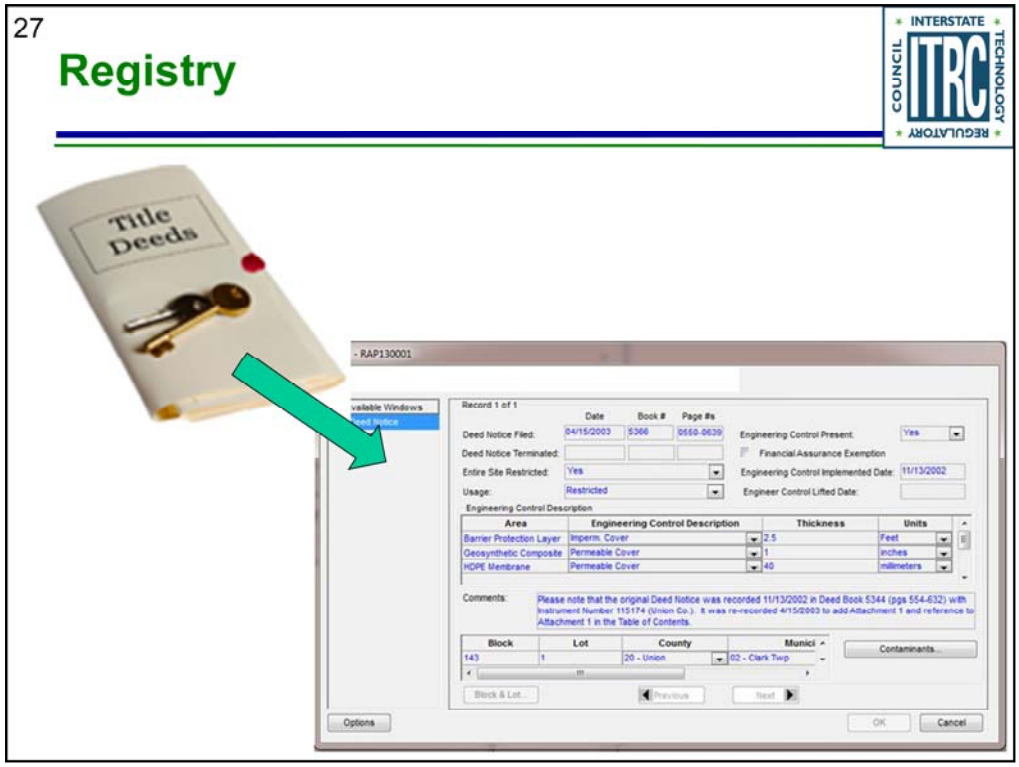
Essential Elements to Consider When Managing ICs





Institutional controls (ICs) are commonly recorded on property deeds or covenants. This presents the following limitations:

- The terms might only be reviewed during property transactions
- The restrictions may be forgotten by the owner
- The restrictions may never have been disclosed to the operator or tenant
- Regulators cannot readily recognize non-compliance

An IC Registry is a list (e.g., an electronic database) that identifies the location and requirements of the ICs. IC Registries can be maintained by:

- State and federal agencies
- Local government entities (e.g., county health departments)
- Corporate environmental managers with multiple properties

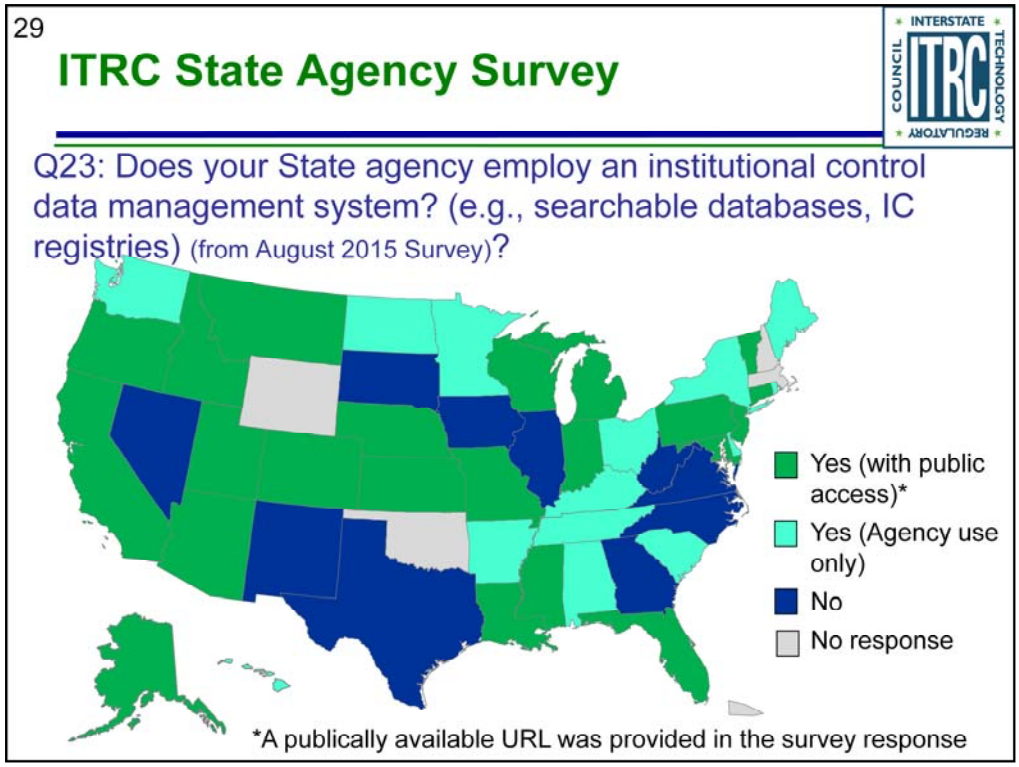
This section focusses on IC Registries maintained by state agencies

Note that the term “registry” is a term-of-art within the UECA, where the registry is limited to only proprietary controls. The UECA sense of “registry” is not used in this guidance, but instead refers to a catalog of proprietary, governmental, or enforcement and informational documents

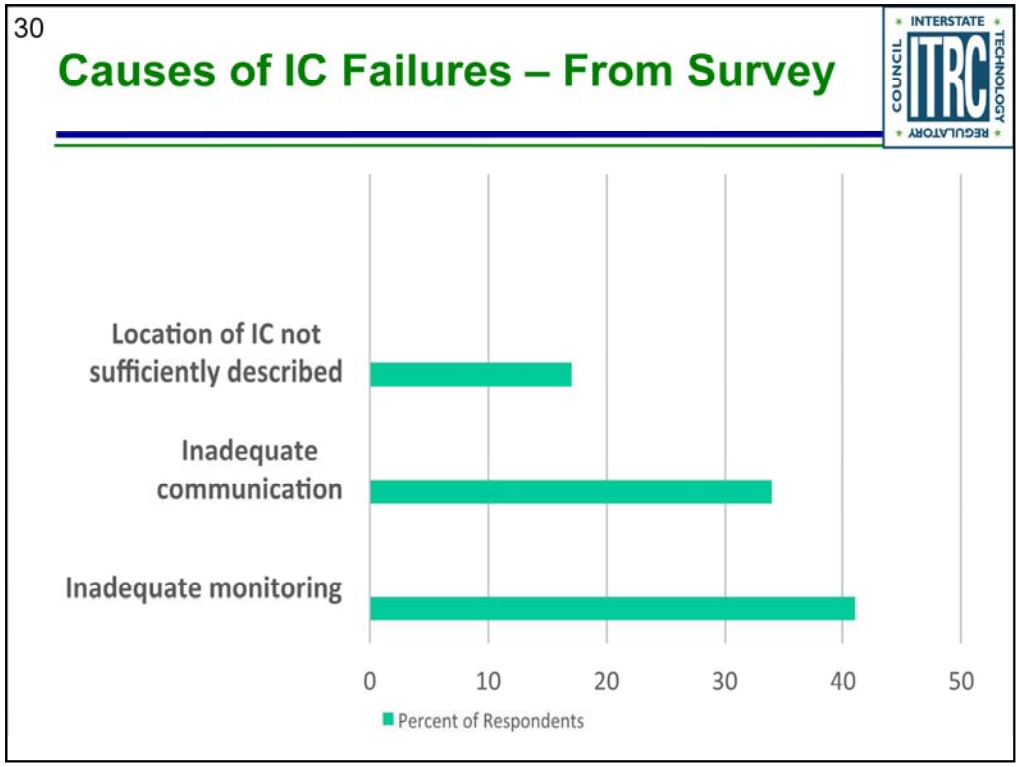
Poll Question

Poll Question

- Have any of you experienced or witnessed a problem or violation of an IC due to lack of awareness where a registry could have made a difference?
  - Yes
  - No
  - Not certain

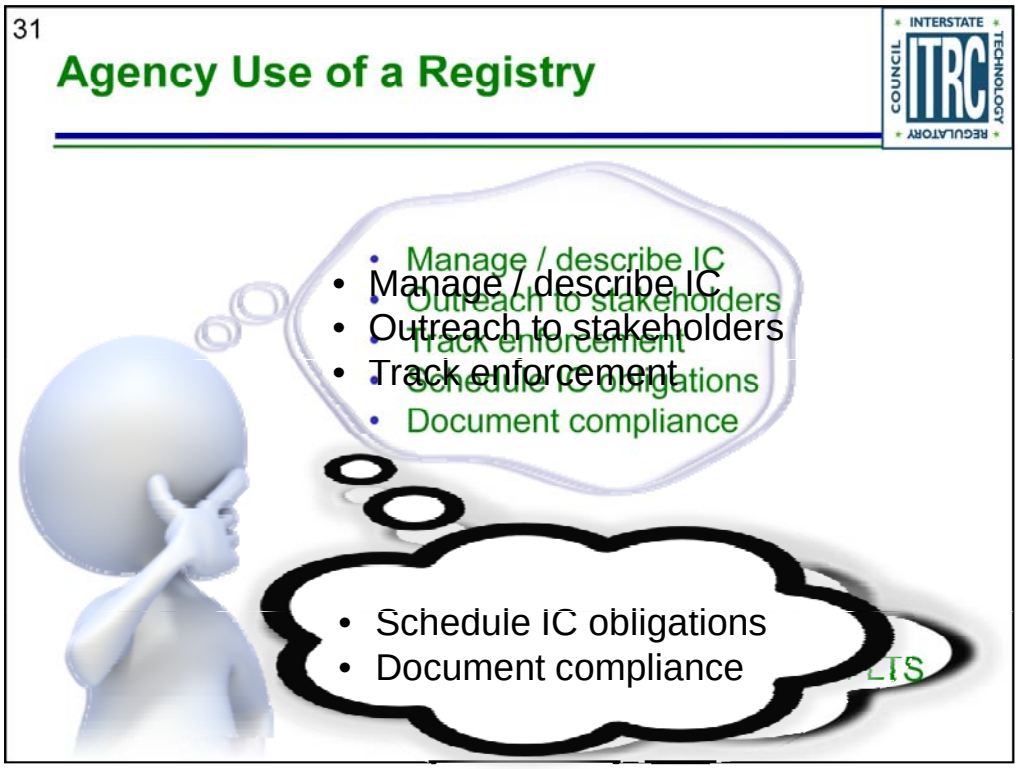


Don't know	CA PA TX WA WI WV
From 1 - 25	GA IL KS ND NM NV RI SC UT VT WY
26 - 50	AR FL MS NC NH
51 - 100	AK AZ DE KY MA MD MI MT TN
101 - 250	DC ID IN VA
251 - 1000	CO HI LA ME MO NJ OR
> 1000	AL CT IA MN NE NY OH OK



When asked how they would improve their state's IC program, several respondents indicated that better tracking systems and registries would be important.

When asked about the causes of IC failures in their state, responses indicated that a good registry could have prevented some failures.



scheduling IC obligations

documenting points of contact for LTS roles and responsibilities

preparing invoices for land stewardship

describing inspection results

documenting IC breaches or noncompliance

describing response actions for noncompliance

documenting IC compliance reporting

tracking enforcement referrals

managing ICs, terminated issuance, modification or termination of ICs, or permits

generating and tracking periodic reporting and certification obligations, or other reporting responsibilities by the obligated party

providing outreach to stakeholders

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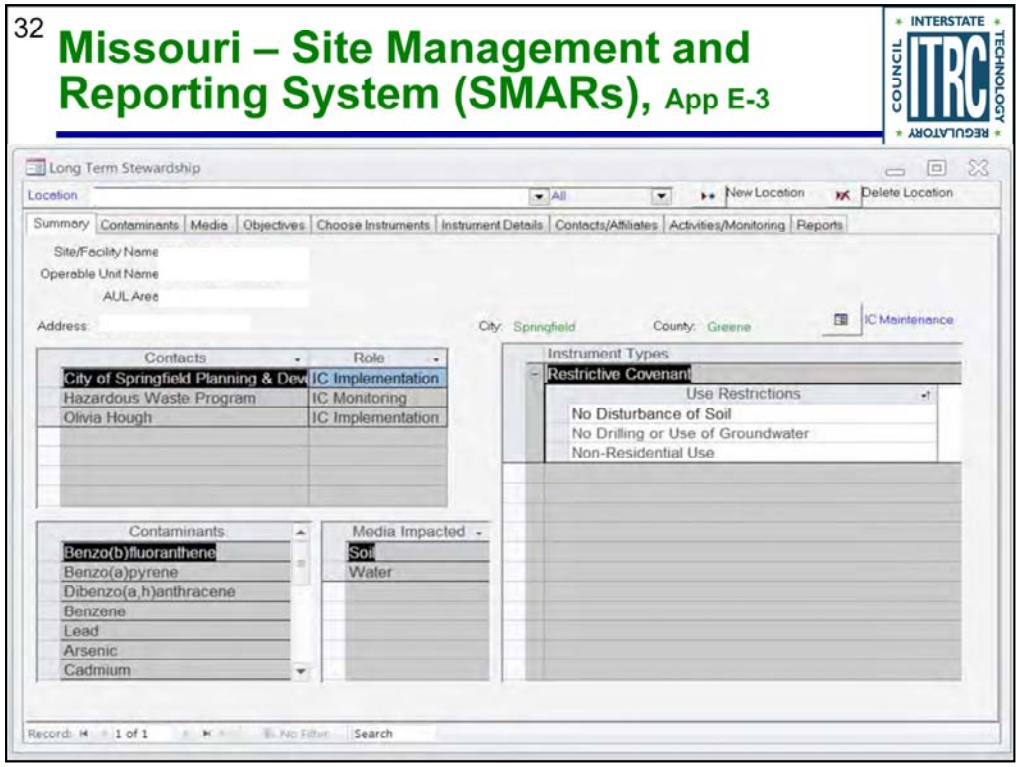
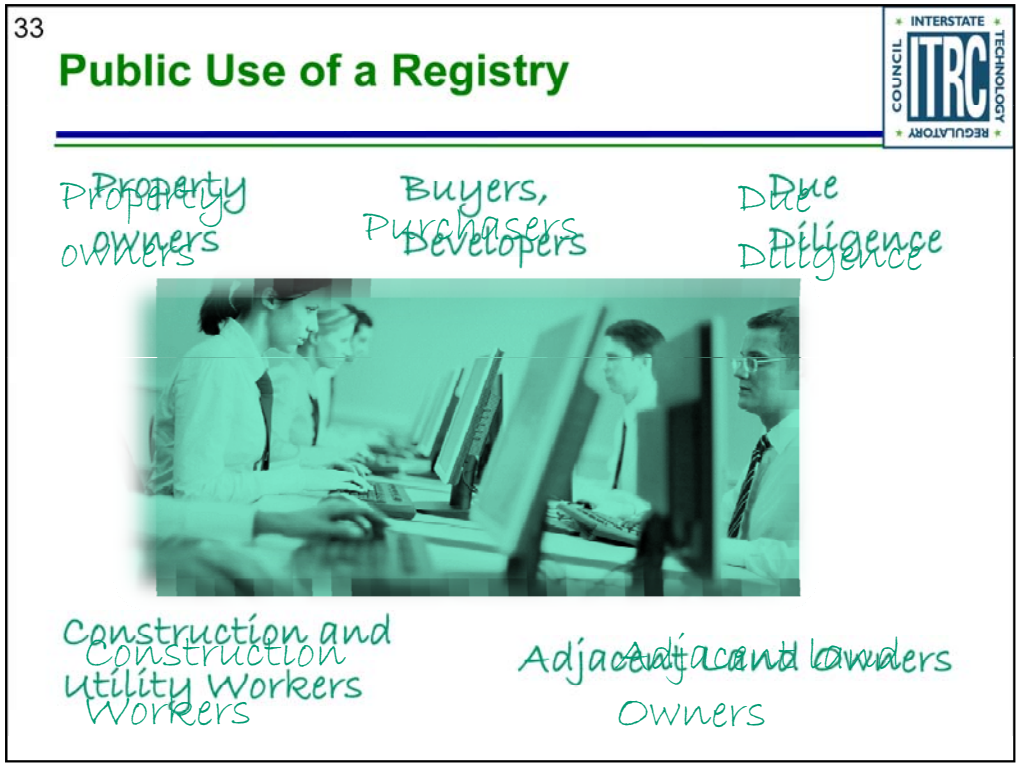
Missouri – Site Management and Reporting System (SMARs), App E-3



Site Management and Reporting System



"Public" may include:

- Buyers of the property
- Adjacent land owners / users
- Utility / construction workers on a property
- People performing environmental due diligence (e.g,. Attorneys, consultants)

For the public, the IC registry is an authoritative resource to search for and learn about ICs. These uses may include:

Developing long term stewardship plans (owners)

Preventing violation of IC (e.g., breach of a cap)

finding an IC via search form or map (workers, buyers, due diligence)

viewing the registry in a tabular (grid) format with multiple attributes and hyperlinks

displaying the registry in a map view showing either the point or polygon limits of the IC

determining what restrictions have been implemented on a site

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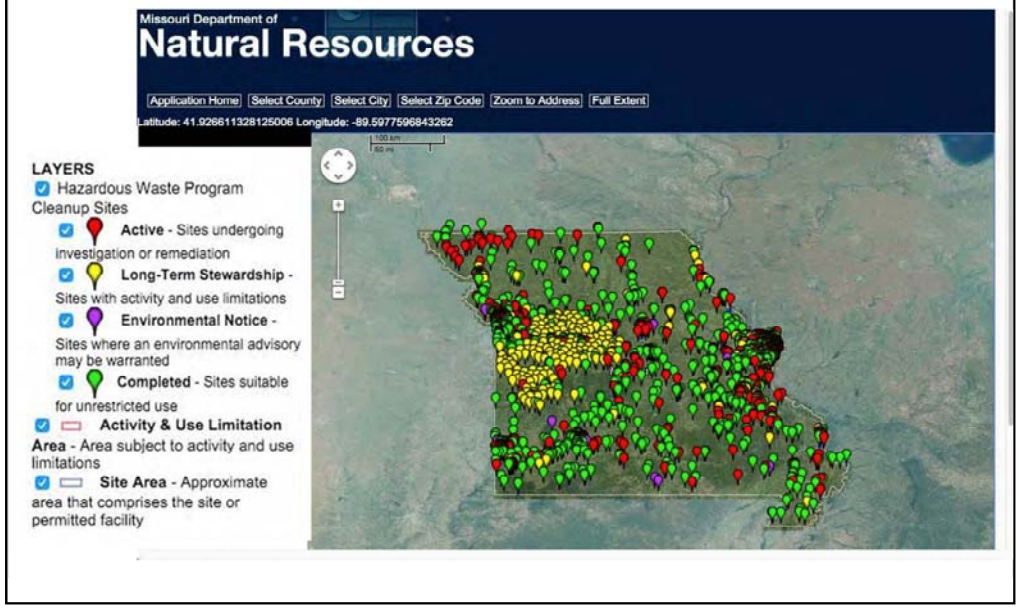
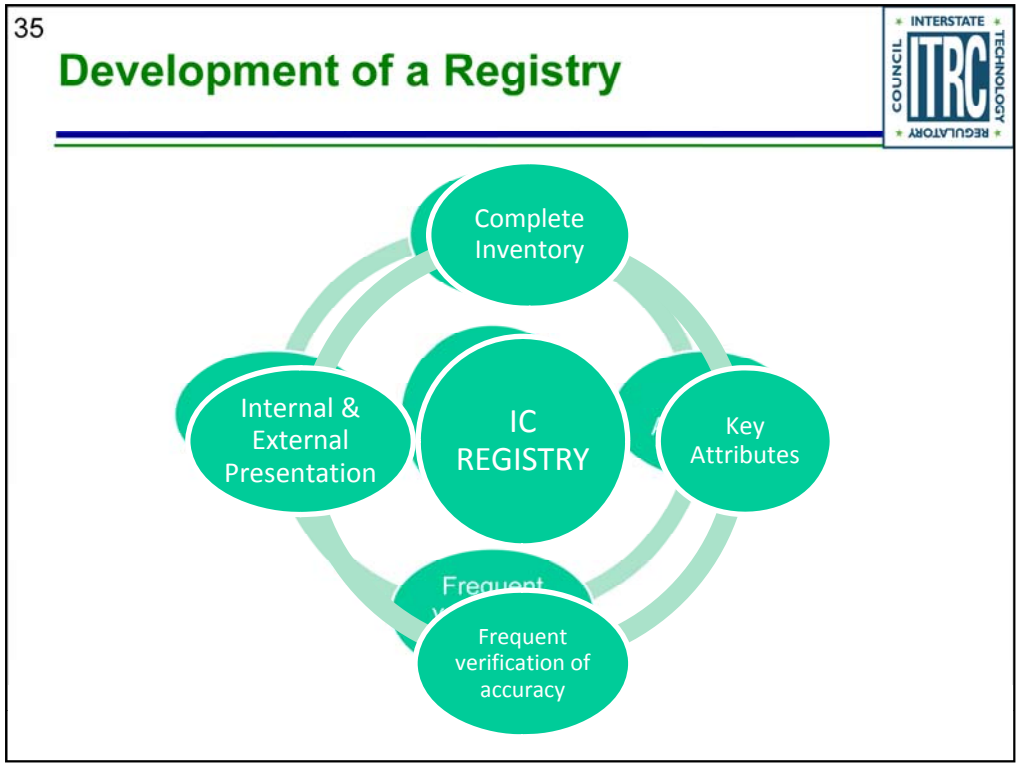
Public Page (see App. "Examples of State, Federal and Commercial Registries")



This public page offers the public a quick description of the Status of the long term stewardship of a site includingthe IC



The desired outcome of IC Registry development is an IC management system which:

- Includes a complete inventory of ICs relied upon in remedies within the jurisdictional boundary
- Includes key attributes such as location (e.g., GIS), land use restrictions, and obligations of the owner
- The agency maintains an internal and external presentation of ICs (e.g., web access)
- The agency maintains and confirms the completeness and accuracy of the contents of a registry at a proper frequency.

Development and maintenance can be complicated since the ICs may be recorded by an entity other than the state agency

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Maintenance of a Registry

- Maintaining, updating, and error correcting IC management system are crucial components for their success

Routine maintenance for confirmation of the completeness and accuracy of the IC Registry content

Additions, deletions, modifications, and error corrections routinely performed by authorized personnel. Backups, archives, and version control features should be verified regularly

Plan (and budget) for periodic information technology upgrades

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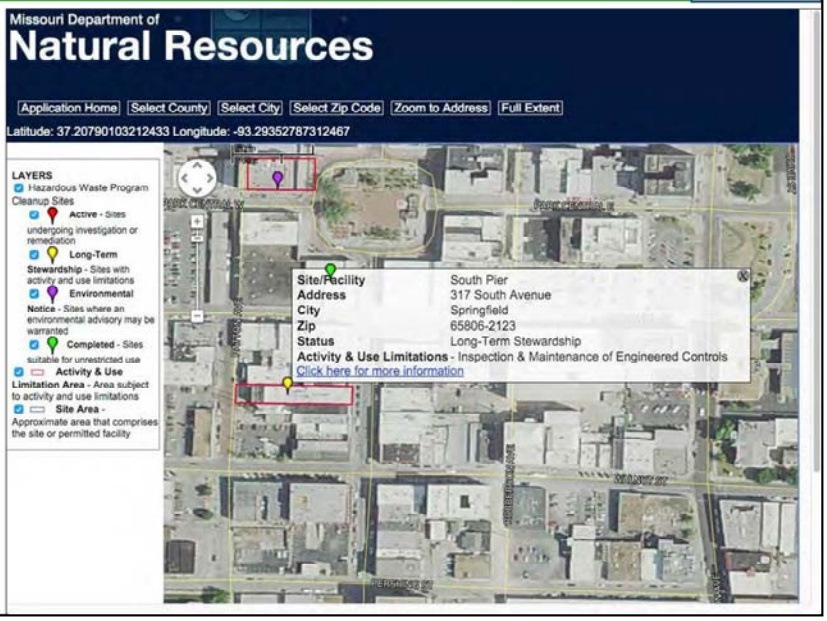
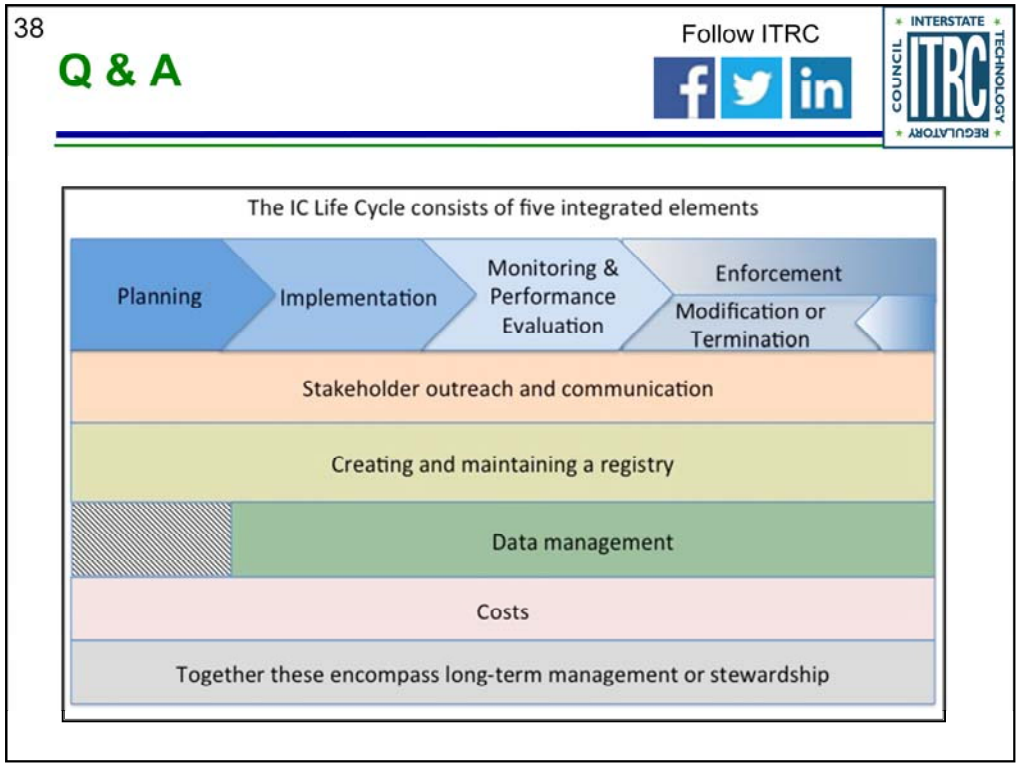
IC Registry Example



Site Map within the SMARs System



Site Map within the SMARs System

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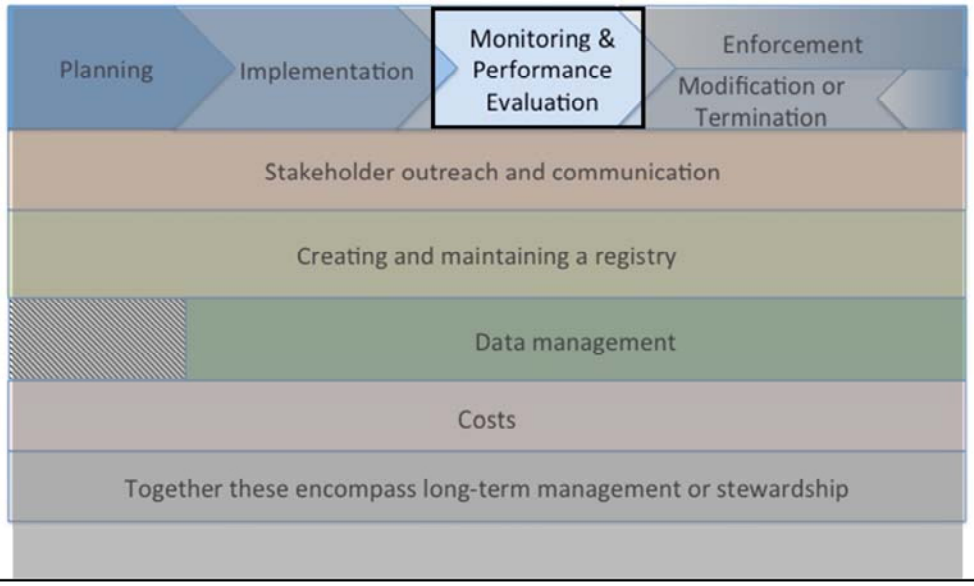
Essential Elements to Consider When Managing ICs



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IC Monitoring and Performance Evaluation

- IC Monitoring Matters!

You will learn common methods and best practices for IC monitoring and evaluating performance of ICs

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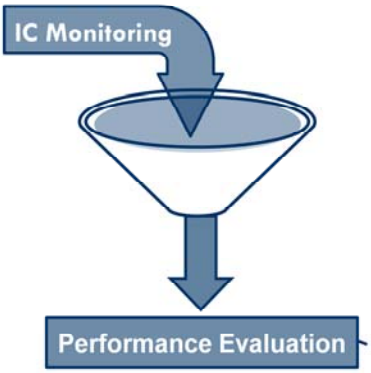
IC Monitoring and Performance Evaluation

- ***IC Monitoring*** refers to the collection of data and information
- ***Performance Evaluation*** refers to the process of reaching findings and conclusions



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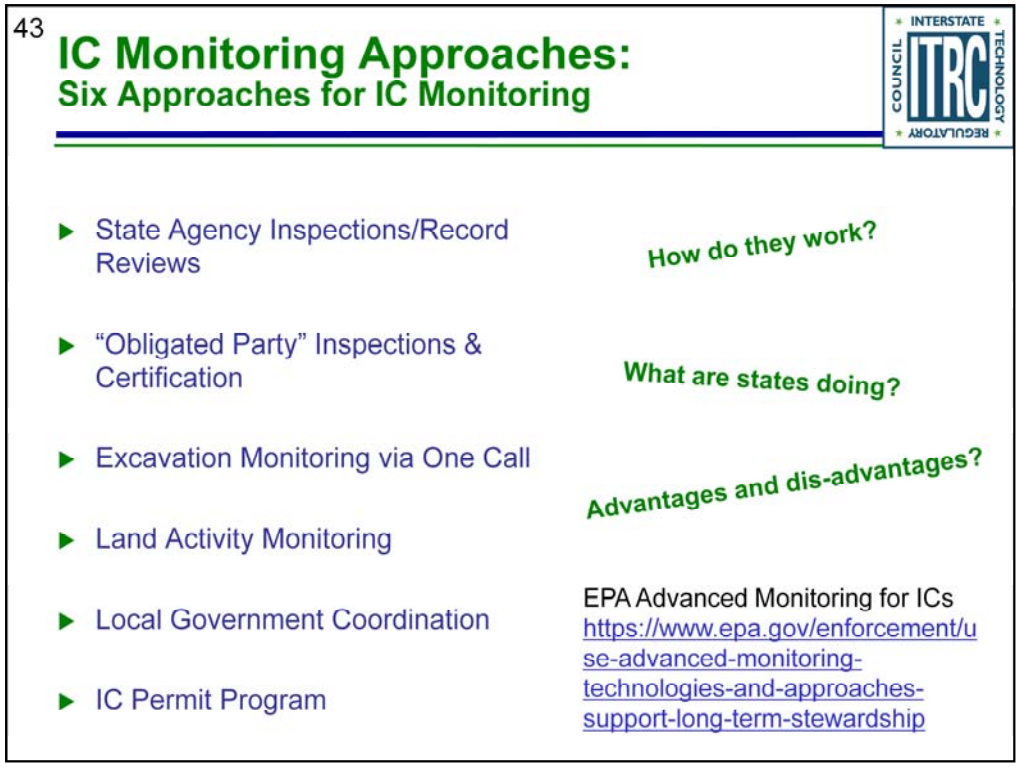
What is IC Monitoring?

- ***IC Monitoring*** refers to the collection of data and information
  - About the use or activities at property at which an IC exists.
  - To learn whether the use or activity might violate the IC Requirements.

This is not conventional environmental monitoring – IC monitoring is different!

- Common IC requirements

  - No groundwater use
  - No (or limited) excavation
  - No residential use
  - No schools or daycare
  - No new structures without vapor intrusion protections



- Presented in order of prevalence among states.

Monitoring Poll Question

Poll Question

- Which of the following do you utilize for monitoring ICs?
  - State Agency Inspections/Record Reviews
  - "Obligated Party" Inspections & Certification
  - Excavation Monitoring via One Call
  - Land Activity Monitoring
  - Local Government Coordination
  - IC Permit

IC Monitoring Approach #1:
State Agency Inspections and Record Reviews

Environmental Covenant Inspection Staff Form

Property Name
Summitville Mine Site
Covenant Property Address
See legal description
City | State | Zip
Del Norte | CO | 81132
County
Rio Grande
LegalDesc:
See Covenant
Major Contaminants
heavy metals, iron, copper, zinc, manganese, cyani
Media WS ☐ Media Air ☐ Media Other ☐
Media WG ☐ Media Soil ☐ Self Reporting ☐
Owner/Corp
Aztec Minerals Group
Contact Address
824 Sun Ridge Lane
Contact and Phone #
Brad Morse
000-000-0000
Chagrin Falls, OH 44022

Covenant Date 4/8/2002
HMWMD ID COD983778432
Covenant ID HMCOV00003
Last Modification 4/8/2002
HMWMD Contact
SF - Mark Rudolph

Restrictions1:
No construction of any building
Restrictions2:
No disturbance of ground surface, including digging, drilling, grading, excavation or mining
Restrictions3:
No action that disturbs vegetation
Restrictions4:
No actions that interferes with any portion of the superfund remedial action
Restrictions5:

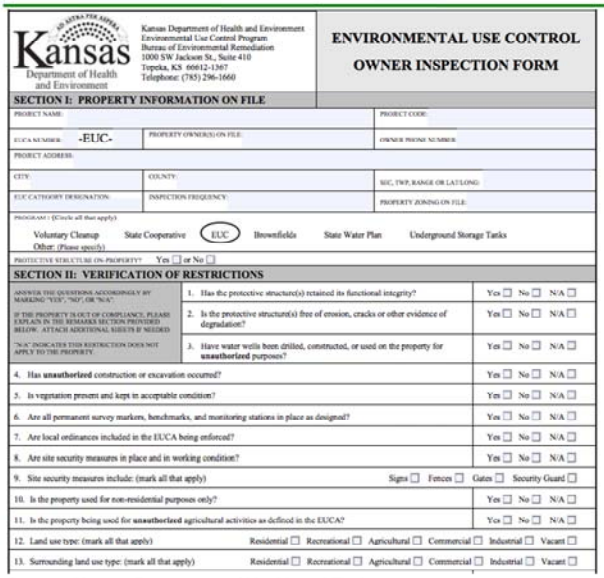
Inspection Compliance Data
CDPHE Staff: Mark Rudolph
Inspection Frequency: Annual
Inspection Due by: 12/31/2017
Completed on
InspectionType
In Compliance? ☐
Followup Required? ☐
Problems Noted
Resolution Date
Notes

Source: Colorado Department of Public Health

- Inspection schedule set and managed by agency.
- Standard form created.
- Agency staff visits site.
- Inspection date and findings recorded in state internal database.
- Copies of inspection reports saved.

29 states use this method

IC Monitoring Approach #2:
Obligated Party Inspection or Certification



Kansas Department of Health and Environment
Environmental Use Control Program
Bureau of Environmental Remediation
1000 SW Jackson St., Suite 410
Topeka, KS 66612-1367
Telephone: (785) 296-1660

ENVIRONMENTAL USE CONTROL OWNER INSPECTION FORM

SECTION I: PROPERTY INFORMATION ON FILE

PROJECT NAME: | PROJECT CODE:

EUCA NUMBER: -EUC- | PROPERTY OWNER(S) ON FILE: | OWNER PHONE NUMBER:

PROJECT ADDRESS:

CITY: | COUNTY: | SEC, TWP, RANGE OR LAT/LONG:

EUC CATEGORY DESIGNATION: | INSPECTION FREQUENCY: | PROPERTY ZONING ON FILE:

PROGRAM: (Circle all that apply)

Voluntary Cleanup State Cooperative (EUC) Brownfields State Water Plan Underground Storage Tanks
Other: (Please specify)

PROTECTIVE STRUCTURE ON PROPERTY? Yes ☐ or No ☐

SECTION II: VERIFICATION OF RESTRICTIONS

ANSWER THE QUESTIONS ACCORDINGLY BY MARKING "YES", "NO", OR "N/A".
IF THE PROPERTY IS OUT OF COMPLIANCE, PLEASE EXPLAIN IN THE REMARKS SECTION PROVIDED BELOW. ATTACH ADDITIONAL SHEETS IF NEEDED.
"N/A" INDICATES THIS RESTRICTION DOES NOT APPLY TO THE PROPERTY.

	1. Has the protective structure(s) retained its functional integrity?	Yes ☐ No ☐ N/A ☐
	2. Is the protective structure(s) free of erosion, cracks or other evidence of degradation?	Yes ☐ No ☐ N/A ☐
	3. Have water wells been drilled, constructed, or used on the property for **unauthorized** purposes?	Yes ☐ No ☐ N/A ☐
4. Has **unauthorized** construction or excavation occurred?		Yes ☐ No ☐ N/A ☐
5. Is vegetation present and kept in acceptable condition?		Yes ☐ No ☐ N/A ☐
6. Are all permanent survey markers, benchmarks, and monitoring stations in place as designed?		Yes ☐ No ☐ N/A ☐
7. Are local ordinances included in the EUCA being enforced?		Yes ☐ No ☐ N/A ☐
8. Are site security measures in place and in working condition?		Yes ☐ No ☐ N/A ☐
9. Site security measures include: (mark all that apply)		Signs ☐ Fences ☐ Gates ☐ Security Guard ☐
10. Is the property used for non-residential purposes only?		Yes ☐ No ☐ N/A ☐
11. Is the property being used for **unauthorized** agricultural activities as defined in the EUCA?		Yes ☐ No ☐ N/A ☐
12. Land use type: (mark all that apply)		Residential ☐ Recreational ☐ Agricultural ☐ Commercial ☐ Industrial ☐ Vacant ☐
13. Surrounding land use type: (mark all that apply)		Residential ☐ Recreational ☐ Agricultural ☐ Commercial ☐ Industrial ☐ Vacant ☐

Source: Kansas Department of Health and Environment (http://www.kdheks.gov/remedial/euc/download/eucapp_form.pdf)

- Requirement ordinarily set within Environmental Covenant.
- Some states create standard forms.
- Agency sends annual reminder letters.
- Agency tracks receipt of certifications.
- Non-receipt can trigger agency inspection.
- Ownership changes captured.

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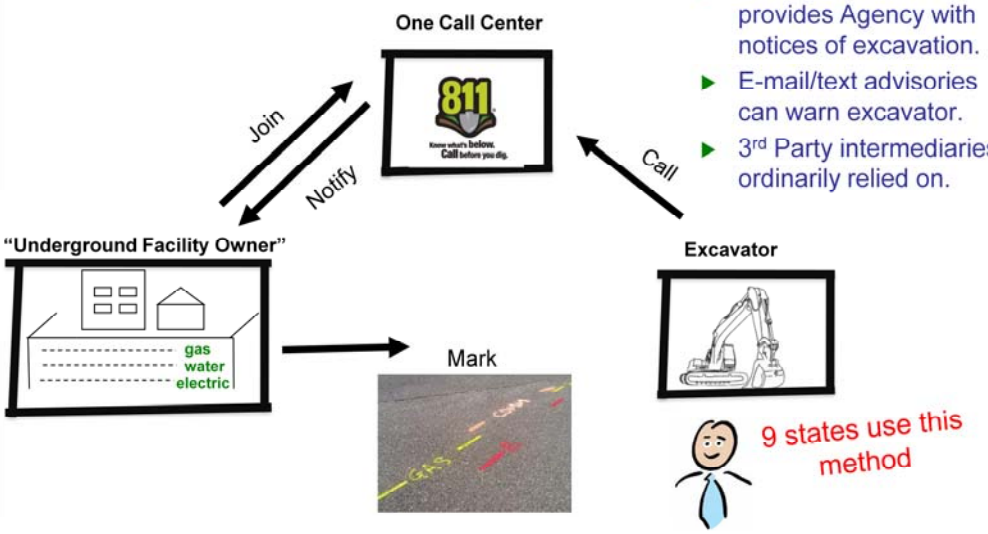
IC Monitoring Approach #3:
Excavation Monitoring via One Call

- Connection to 811 provides Agency with notices of excavation.
- E-mail/text advisories can warn excavator.
- 3rd Party intermediaries ordinarily relied on.



9 states use this method

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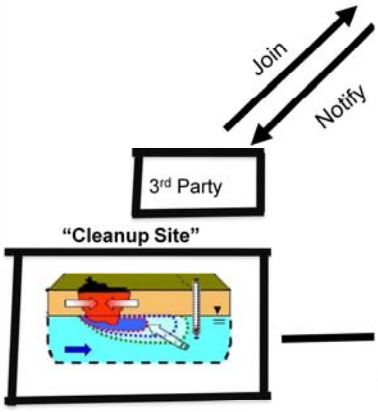
IC Monitoring /
Excavation Monitor



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: 170100372

Ticket Priority:	STANDARD	Work Date:	01/13/17
Work Address:	33371 MARINA BAY CIRCLE, MILLSBORO	Work Done For:	SCHELL
Near Intersection:	ATLANTIC DRIVE	Location Details:	
Work Description:	LOCATE/MARK: MARK AND FLAG THE ENTIRE PROPERTY . Work Type: INST WTR & SWR SVC		

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 http://shortlinks.terradex.com/DNREC-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:

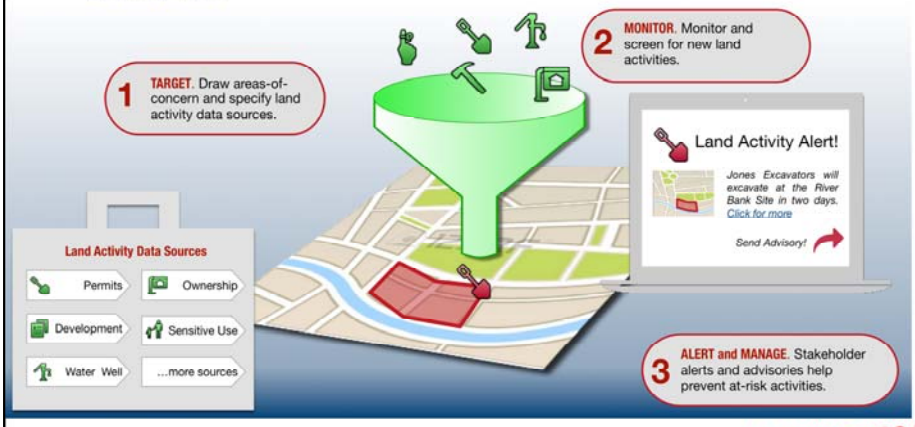
Site 1: LONGNECK MERCURY STUDY (DE-1388)
Chemicals: • Mercury View ATSDR 7439-97-6 View Agency for Toxic Substances & Disease Info

ALTERNATIVES TO VIEW INFORMATION:

View on the Web:	http://www.digclean.com, enter under Option 2: 434404
Call:	650-209-4229, when prompted enter 434404
Send Text Message:	Message: 434404 To: 650-209-4229

IC Monitoring Approach #4:
Land Use & Activity Monitoring

- Connection to electronic feed of land activity info.
- e-Alerts sent to agency.
- 3rd Party intermediaries are ordinarily relied on.



Source: Terradex, Inc.

9 states use this method

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IC Monitoring Approach #5:
Coordination with Local Government

Minimum "Coordination"

- State agency informs local government (LG) as to location of ICs

"Eyes and Ears" Approach

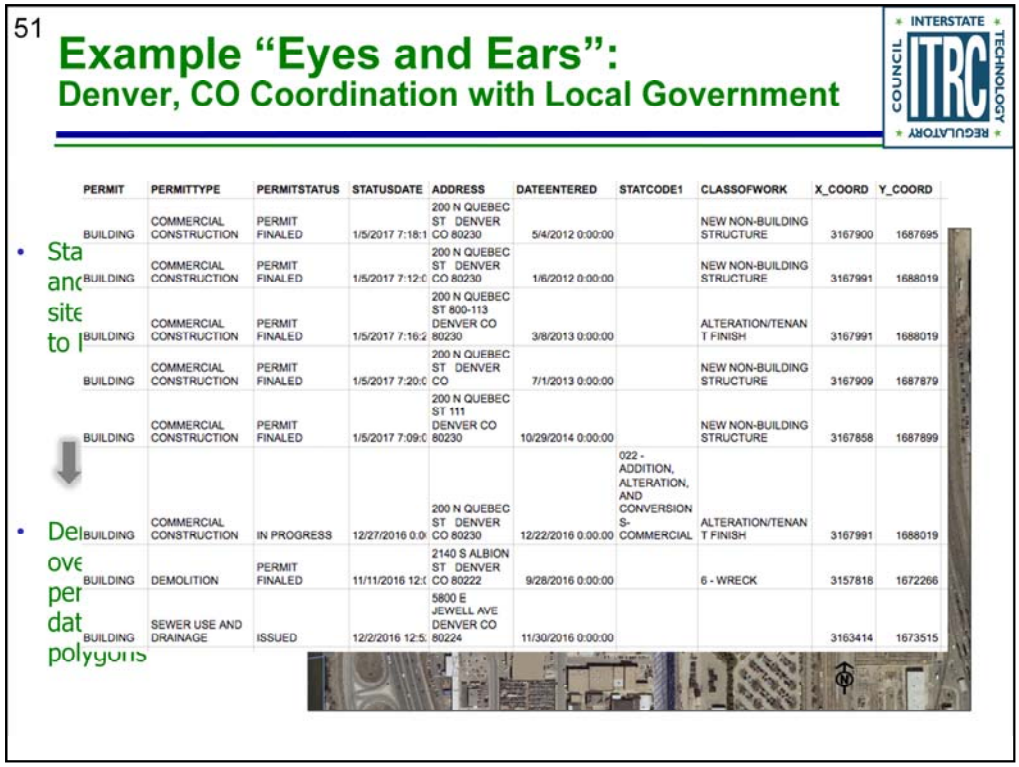
- LG informs agency as to permits impacting IC

OR

Local Government Lead

- LG enacts ordinance that operates as an IC

6 states use this method



Denver and the Colorado Department of Public Health and Environment (CDPHE) signed a memorandum of understanding, fashioned as a LUCIP, in November 2008. The LUCIP had its roots in EPA-supported research and subsequent in-person facilitation by ICMA. Getting the LUCIP drafted and signed took "many years" and long negotiations between various city departments and the CDPHE.

The process agreed to in the LUCIP and now employed by Denver keeps the state updated as to land use and development permits, but does not impose any IC enforcement burden on the city. Each month, CDPHE sends Denver a GIS "shapefile" identifying sites where ICs currently exist. Denver flags the IC properties through a process that reads the "shapefile" into the city's GIS and database system. In addition, Denver designates certain "of concern" permit application requests with "LUCIP codes." For example, excavation gets a "LUCIP code" but plumbing or electrical code-related permits do not. On a weekly basis, the city runs a database query to find all permit applications that (1) contain LUCIP codes and (2) affect IC properties. Denver sends this to CDPHE, which is responsible for determining whether the activity conflicts with ICs and taking appropriate action if it does. Although this process puts some burden on the city's information technology staff, the level of effort was absorbed into the job description of a single person and did not require additional budget or funding. Denver issues permits without any delay or process amendments, but simply tracks the permits that affect IC sites and sends this information to the state.

Example "Local Lead":
Jasper County, MO IC Ordinance

JASPER COUNTY, HEALTH DEPT.

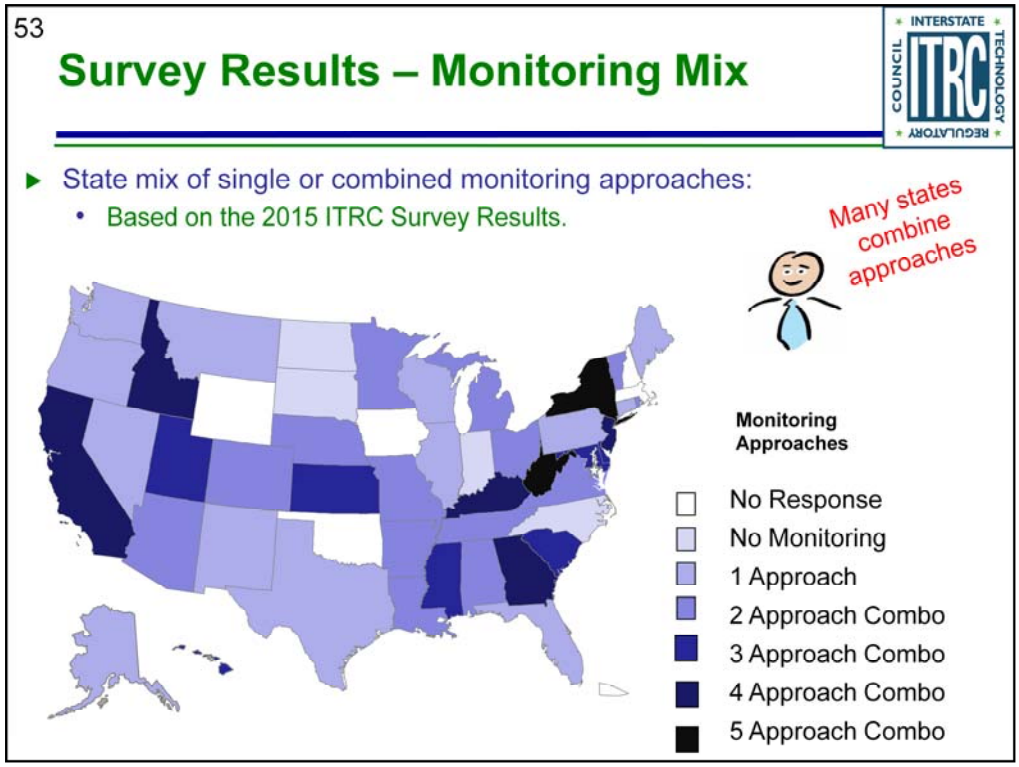
ENVIRONMENTAL CONTAMINATION ORDINANCE

ENVIRONMENTAL CONTAMINATION ORDINANCE

The Jasper County Environmental Contamination Ordinance went into effect July 1, 2006.

The Ordinance requires soil testing for regulated contaminants on Superfund designated properties associated with new construction of a dwelling, dwelling unit child occupied facility or recreational area. Superfund designated areas are outlined on the mine/smelter map. Health Department staff will conduct the soil testing

The ordinance also requires that all existing wells be tested for heavy metals when the property is transferred or sold. The test must be conducted by a DNR certified well tested.The Health Department will provide contact information for certified testers.



Speaker Notes:

Main point – there is significant variation in the use of monitoring elements across the States.

Based on 2015 survey results – Because IC management is an evolving issue, State Use of monitoring elements is also evolving.

The Six Monitoring Elements were developed from an evaluation of the survey responses on monitoring methods. In some cases survey response categories were combined into a single element i.e. “RP” and “Land Owner” Inspections & Certifications are combined as “Obligated Party” Inspections & Certifications.

No Response	IA MA NH OK WY (5)
Zero	IN NC ND SD (4)
1	CT FL IL ME MT NM NV OR PA TX WA WI (12)
2	AK AL AR AZ CO LA MI MN MO NE OH RI TN VA VT (15) 1 AND 2 COMBINED (27)
3	DE HI KS MD MS SC UT (7)
4	CA GA ID KY NJ (5)
5	NY WV (2) neither reported local gov’t involvement in monitoring
6	None

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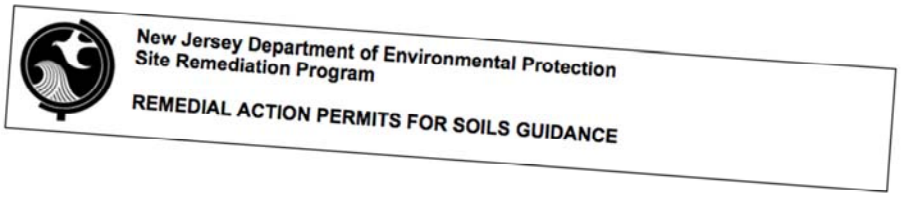
IC Monitoring Approach #6:
IC Permit (NJ Example)

- When GW/Soil IC is Required
- Remedial Action Permit Required
  - Monitoring/Reporting by "Obligated Party"
  - Fees
- Financial Assurance Required if EC Exists.



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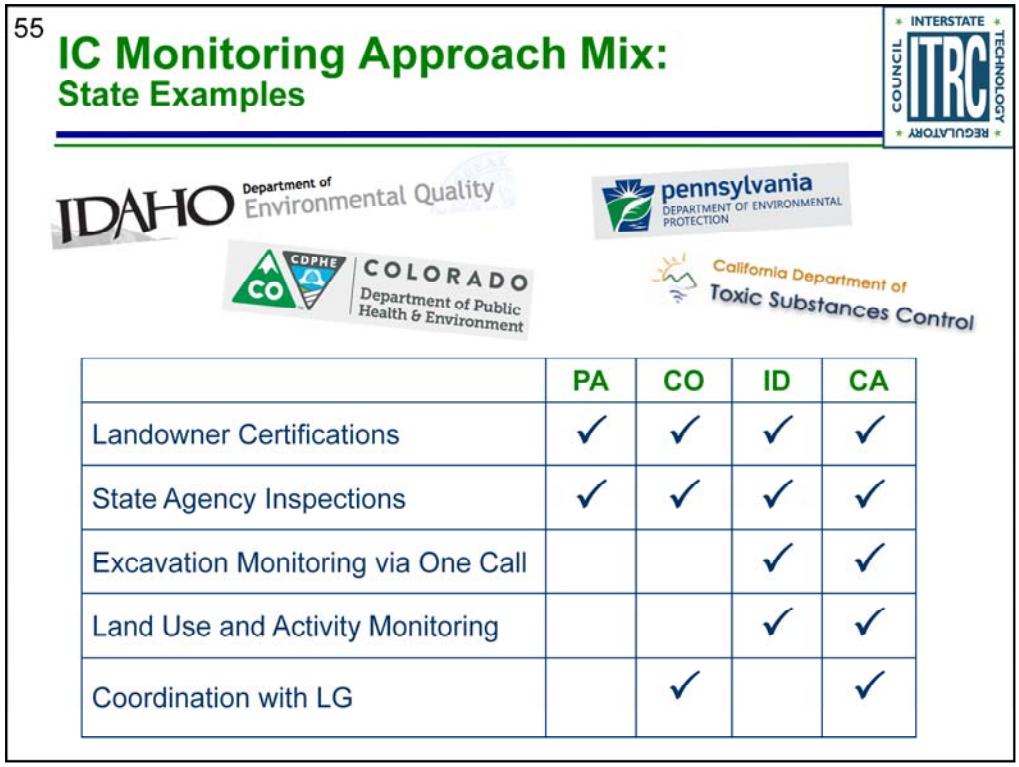
IC Monitoring Approach Mix:
State Examples



	PA	CO	ID	CA
Landowner Certifications	✓	✓	✓	✓
State Agency Inspections	✓	✓	✓	✓
Excavation Monitoring via One Call			✓	✓
Land Use and Activity Monitoring			✓	✓
Coordination with LG		✓		✓

Only some sites rely on this level of IC monitoring. When the CA IC monitoring was put into practice, after some time, it was clear to see which sites needed less and which needed more IC monitoring.

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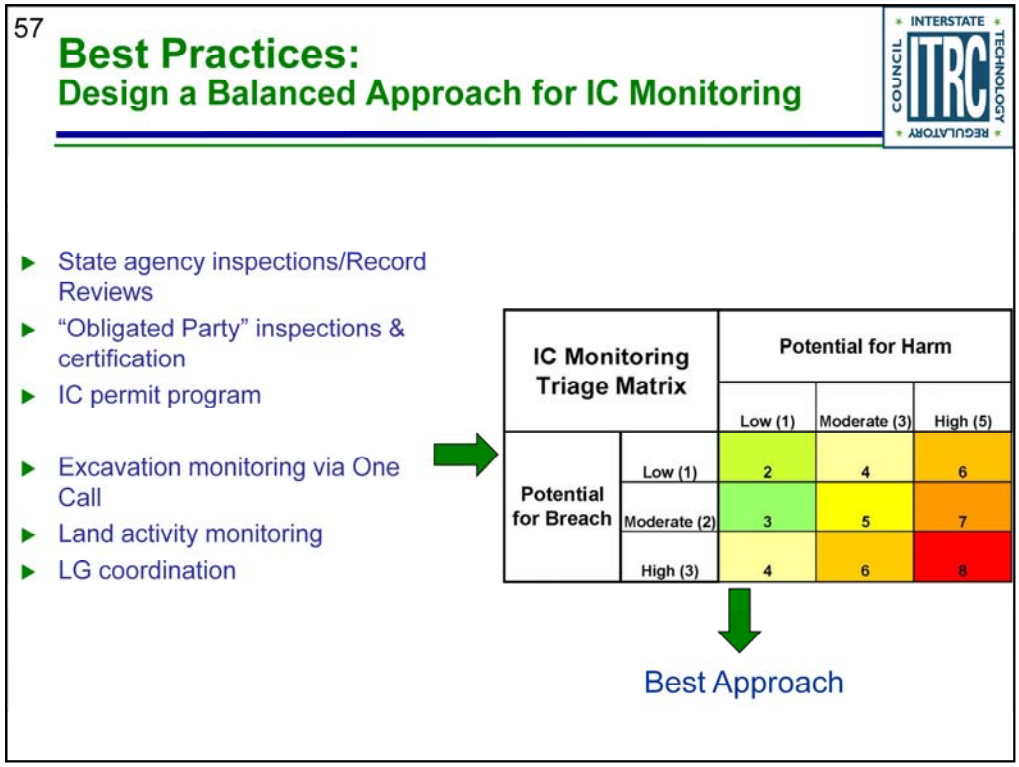
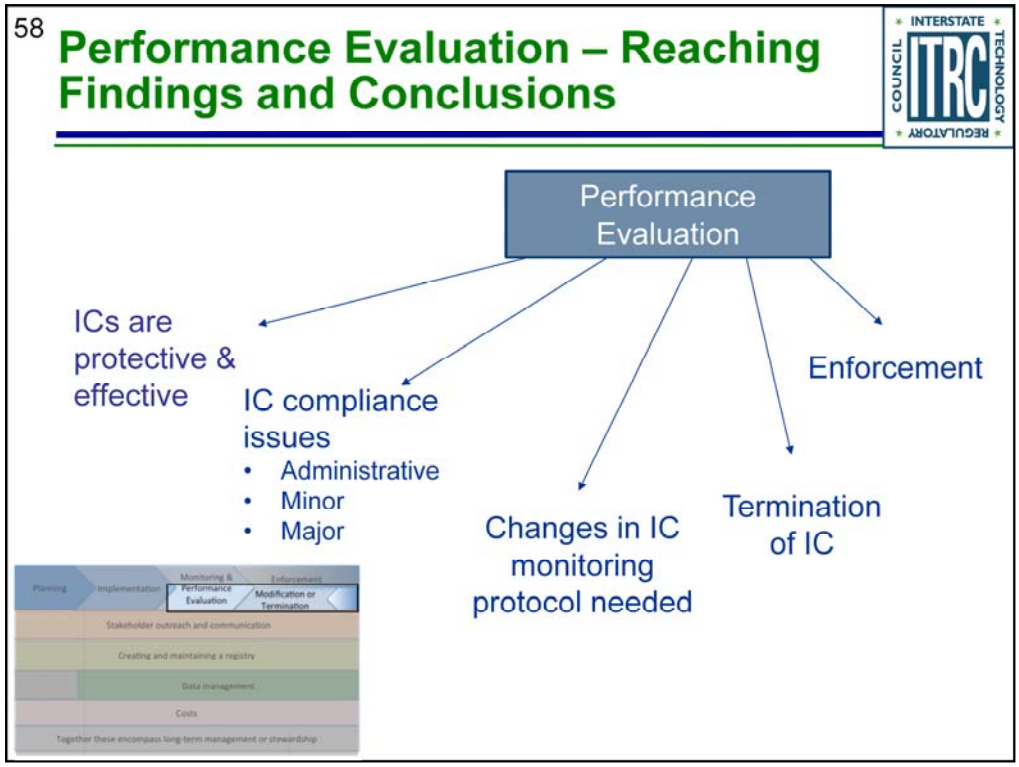
Assessment of IC Monitoring Approaches

State Agency Inspections/Record Reviews	• Periodic "snapshot" • Comprehensive • Agency staff/resources required
Owner Certifications	• Periodic "snapshot" • Greater reliance on landowner • Agency must still administer
Excavation Monitoring via One Call	• Daily frequency • Comprehensive coverage of digging • 3rd party services
Land Activity Monitoring	• Daily frequency • Tailored coverage of land use/activity • 3rd party services
Coordination with Local Governments	• Various approaches. • Can leverage the existing practice of local govt. • Requires non-conventional coordination
IC Permit	• Similar to owner certification • But formalizes the approach and includes ongoing fee



See Table 2 of the Document which lists various states as noting the need to improve or develop IC monitoring.



Administrative: Such as property transfer or occupancy change. These changes may trigger correspondence to affected parties, and/or re-filing an IC document with new ownership information

Minor: Such as EC repairs, building demo, excavation into soil. Such changes are typically noted in the monitoring documents, but do not prompt a need to refile or physically modify the IC document

Major: IC document may need to be revised

IC is no longer protective due to redevelopment activities, change in receptor;

Additional remediation performed;

Changes in remediation standards;

Site is rezoned, or put to a different use;

Change in monitoring/reporting requirements;

Construction projects within public easement compromise IC/EC;

IC requirements are not tailored to site risks.

Changes in In IC Monitoring Protocol Needed. Monitoring results and resulting performance evaluation may reveal a weakness in the monitoring protocol

Increased development near and IC

Higher levels of erosion than anticipated or expected

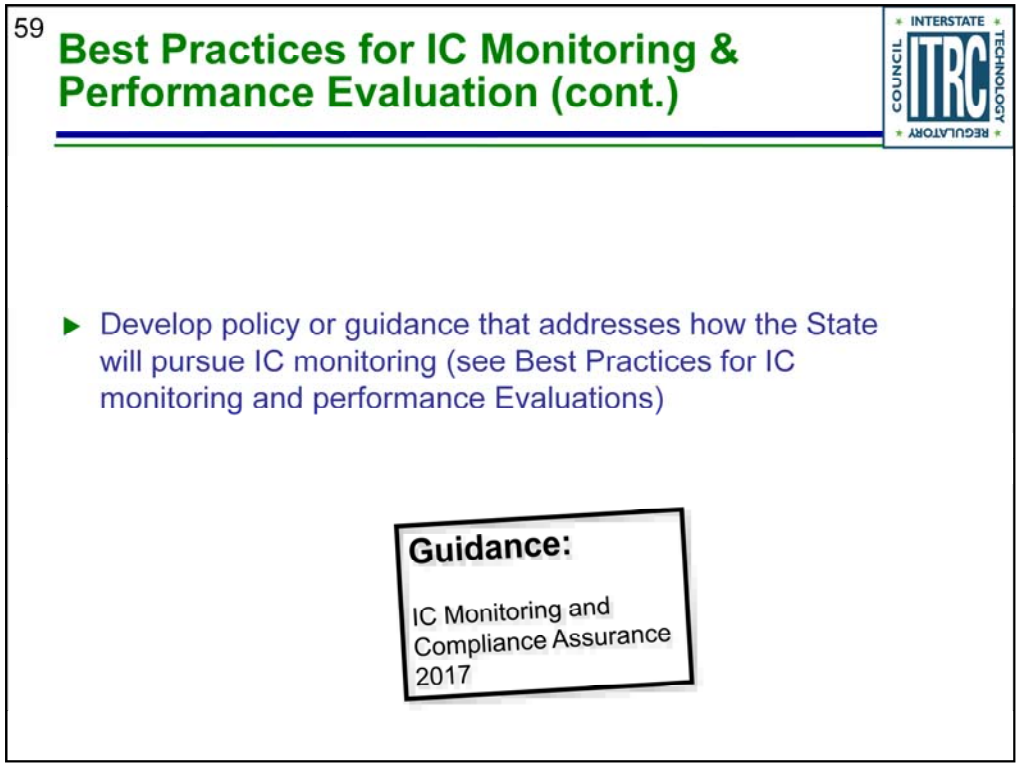
Levels of human activity near and IC

IC Termination

Additional cleanup performed

Cleanup standards met

Cleanup standards change “upward”

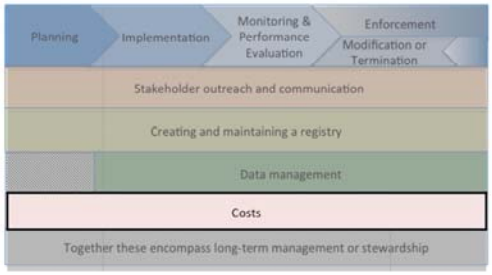


See, e.g., Idaho SOW described above.

Cost of an IC Program

- Cost elements cover the IC life cycle*
  - Planning
  - Community engagement
  - Information management
  - Monitoring and performance evaluation
  - Enforcement

*See ASTSWMO, State Conceptual Framework to Estimate Associated Cost (August 2012) (avail. at http://astswmo.org/state-conceptual-framework-to-estimate-associated-cost/)



State IC Upfront Fees:
Missouri Example

Title 10—DEPARTMENT OF NATURAL RESOURCES
Division 25—Hazardous Waste Management Commission
Chapter 15—Hazardous Substance Environmental Remediation (Voluntary Cleanup Program)

3. Monitoring fee. For sites which require engineering and/or institutional controls (e.g., capping, deed restrictions), the person shall submit a fee to cover the department's long-term monitoring costs. The department's voluntary cleanup project manager shall establish a site-specific monitoring fee, ranging from five thousand dollars to fifteen thousand dollars ($5,000–$15,000). The amount of the monitoring fee shall be dependent upon the complexity of the site and the type of engineering and/or institutional controls.

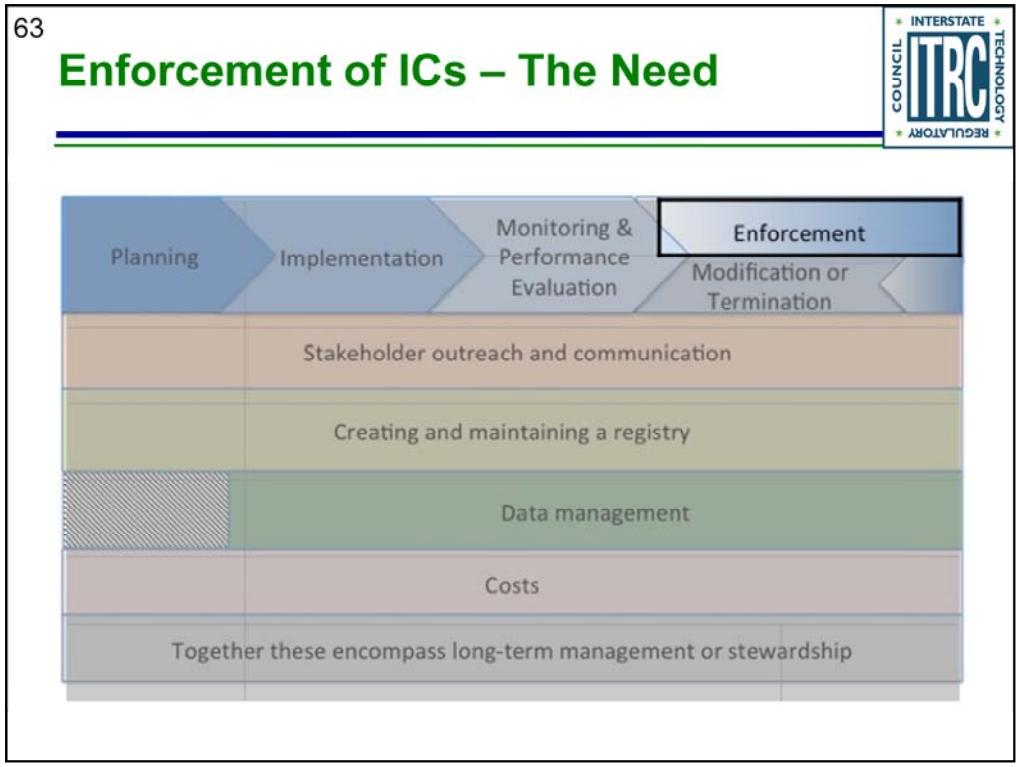
State IC Ongoing Fees:
California Example

LAND USE COVENANT AND AGREEMENT

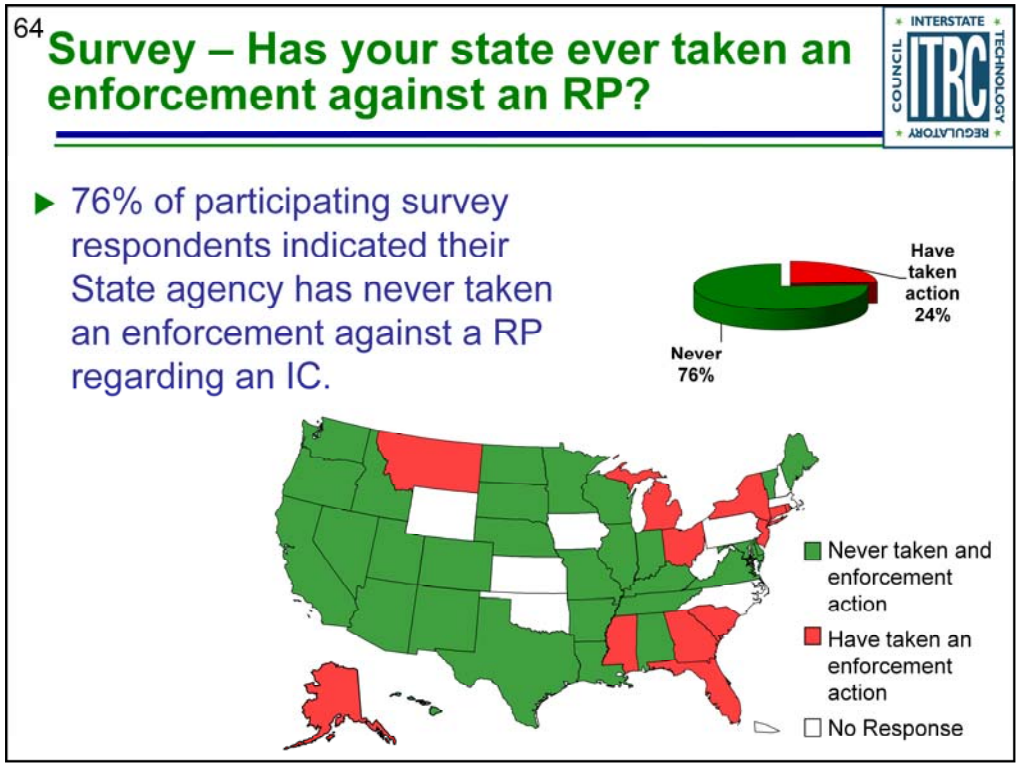
ENVIRONMENTAL RESTRICTIONS

County of Del Norte, Assessor Parcel Number: 115-180-19
Hooshnam Site
DTSC Site Code 201250

3.5. Costs of Administering the Covenant to be paid by Owner. The Department has already incurred and will in the future incur costs associated with the administration of this Covenant. Therefore, the Covenantor hereby covenants for the Covenantor and for all subsequent Owners that, pursuant to California Code of Regulations, title 22, section 67391.1(h), the Owner agrees to pay the Department's costs in administering the Covenant.



I'm sure many of you on the phone or at your computer are geologists and engineers or other technical staff that focus on making sure all of the appropriate exposure pathways are adequately defined and addressed by the chosen institutional control. As a staff member who works as a liaison with the Department of Attorney General and the technical project managers, I may be contacted when the enforceability or enforcement of an institutional control comes in to question. For this portion of the presentation, I'm going to highlight many of the tools contained in the ITRC IC guidance document that should be considered when planning, implementing and approving the type of institutional control that is best suited for the selected remedy.

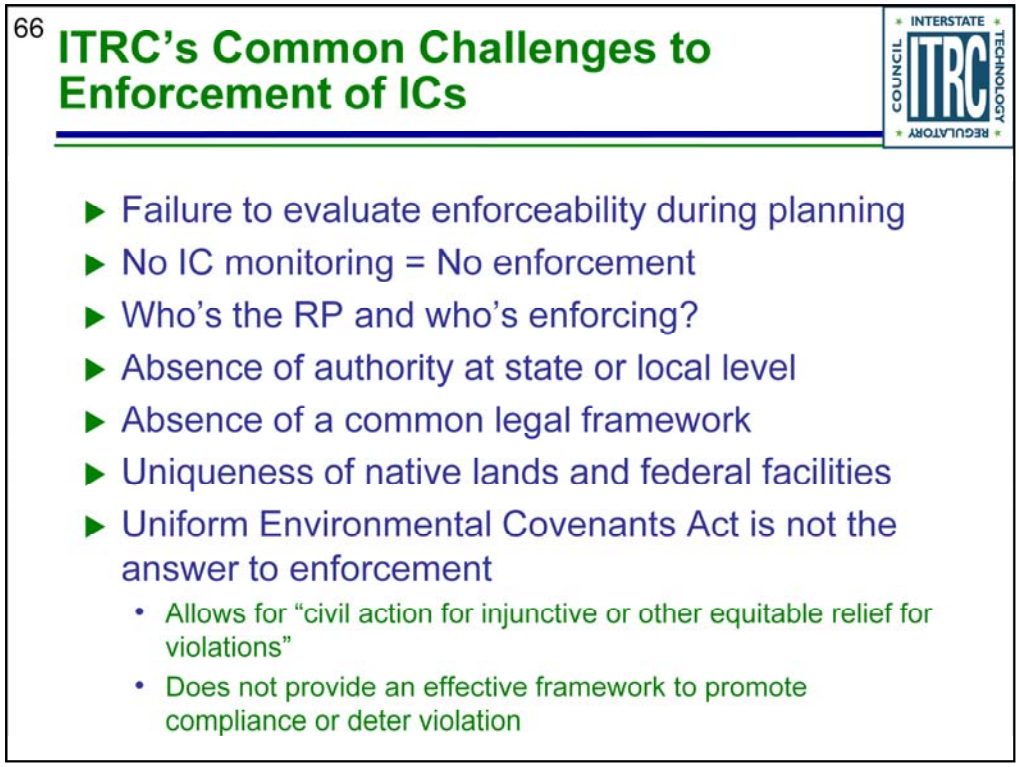


ITRCs survey illustrates weaknesses in state monitoring and compliance efforts. If adequate management and monitoring requirements are not established as part of a state IC program, then there is little to enforce. Indeed, ITRC's survey results indicate that approximately 2/3s of state agency ever taken an enforcement against a responsible party regarding an institutional control. This is a significant statistic to keep in mind because we know failures and violations of ICs do happen. Overall, the data amplifies the necessary relationship between adequate IC management tools and the foundation they provide to a overall meaningful IC enforcement program.

Enforcement Poll Question

Poll Question

- Does the state you represent (or where you have implemented an IC) have an enforcement process in hand if an IC violation is identified, regardless if you have taken an enforcement action?
  - Yes
  - No
  - Don't know



I've previously touched upon the concepts and challenges of considering enforceability during the planning and implementing phases of institutional controls, and Mike Sowinski also covered the importance of monitoring as part of a long term management program. In addition to these 2 challenges, identifying the proper parties to enforce the provisions of an institutional control can be complex and complicated. And even though ICs are most commonly tied to laws independently administered by state and local jurisdictions, many states may not have explicit authorities written into the respective statutes. Add into that the uniqueness of native land and federal facilities. Another challenge is that there is currently no model framework to guide a compliance and enforcement strategy specifically for ICs. And finally, the Uniform Environmental Covenants Act is a model statute that can be adopted into law and provide legal framework to create, modify, enforce and terminate an IC, but the model language only provides for conventional, common law relief such as trespass or nuisance once a violation occurs and does not provide a compliance assistance framework that many state regulators seek to use first.

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Enforcement of ICs Requires Legal Authority

- Specific legal authority
  - Statutes, regulations, ordinances, etc.
- Common law authority
  - Case law on trespass, nuisance, etc.
- IC instruments
  - Enabling language in the IC
- Enforcement instruments
  - Consent orders, decrees, etc.

ITRCs guidance document recognizes the challenges to enforcement of ICs and discusses the various legal authorities (beyond the traditional statutory dependence) that regulators and other parties responsible for assuring compliance may use. For example, in my state,

Instruments such as consent decrees document an administrative or judicial court's approval of the settlement of an enforcement case filed in court. Typically, consent decrees specify actions to be taken or not to be taken by the settling parties. Consent decrees may have penalties attached for noncompliance.

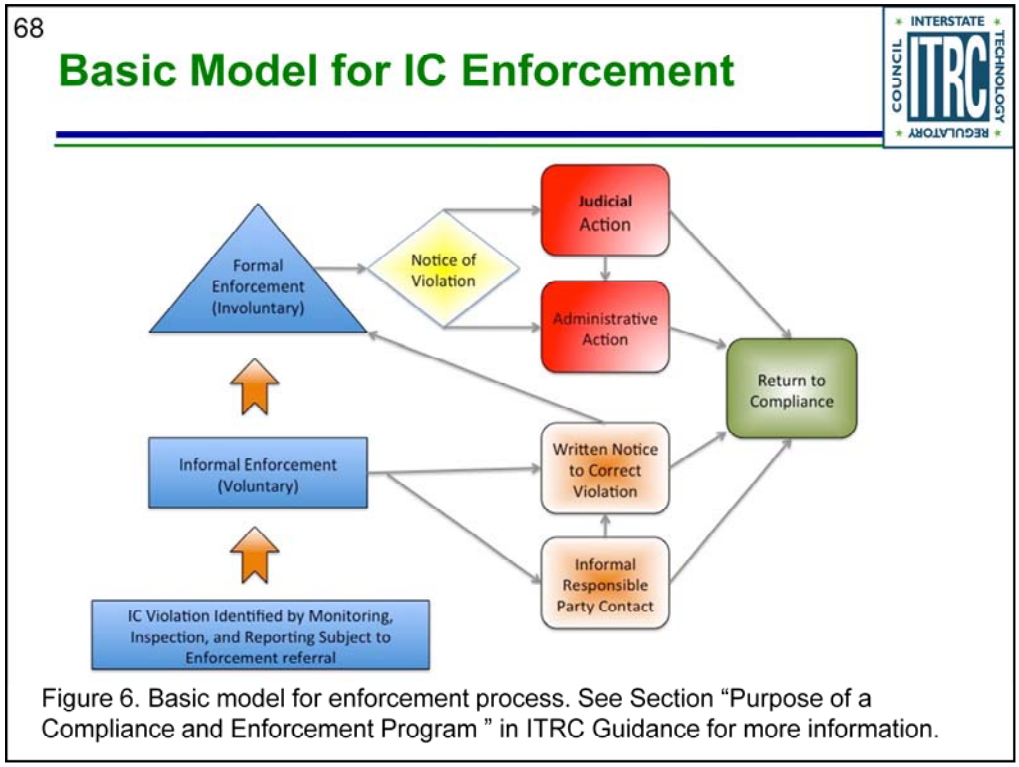
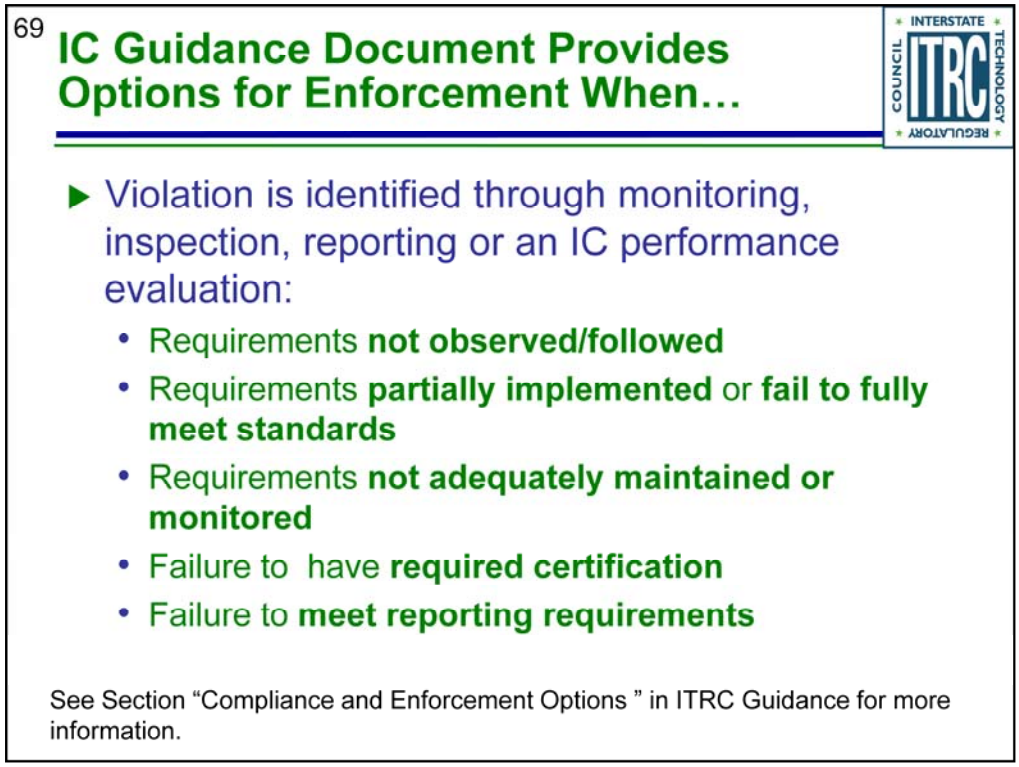


Figure 6. Basic model for enforcement process. See Section "Purpose of a Compliance and Enforcement Program " in ITRC Guidance for more information.

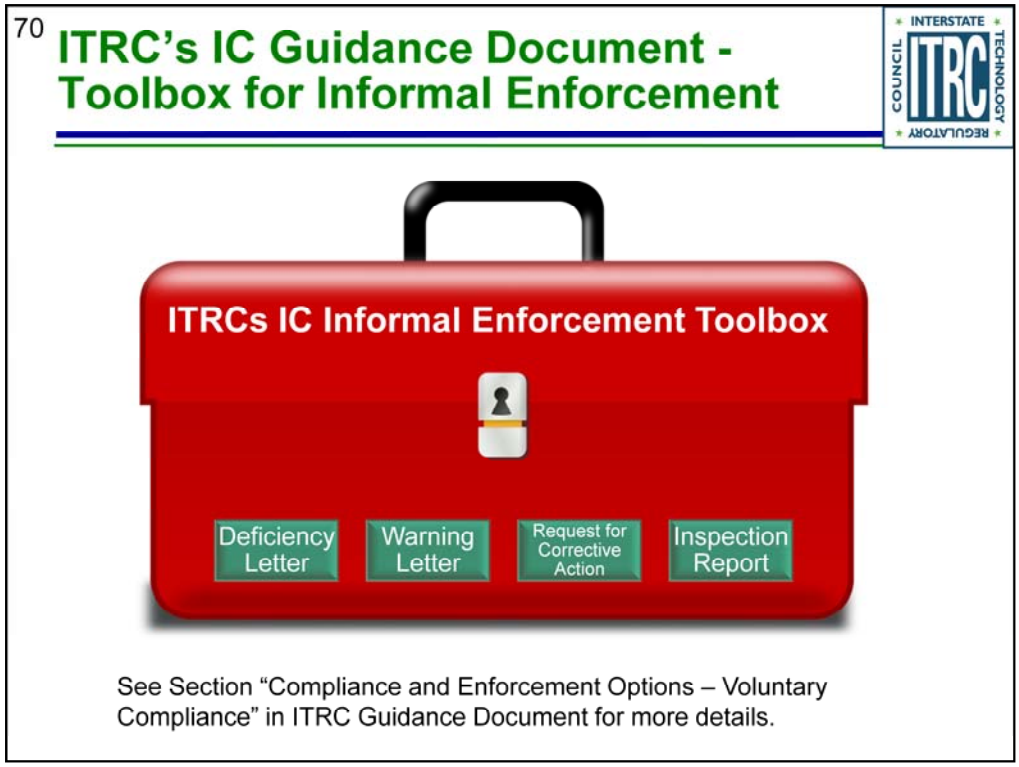
Because there is no common model legal framework for ICs, the ITRC guidance document suggests that the construction of a basic IC enforcement model can be premised on the traditional environmental enforcement model used for water, air, and waste. When IC compliance failure occurs, enforcement can be strategically applied toward the parties' return to compliance, deter any further violation, and assure the protection of receptors from threat of release or exposure. The ITRC guidance document suggests that voluntary compliance methods emphasize enforcement avoidance, as well as intervention to educate a party on how to comply with IC requirements. In contrast, requiring involuntary compliance from a party through formal enforcement is generally considered a final administrative measure to resolve IC violations. Failing to respond to informal enforcement measures, violations with significant environmental impact or parties with a history of noncompliance may generally be considered for formal enforcement.



The ITRCs IC guidance document emphasizes that effective enforcement of an institutional control depends on thoughtful IC planning. Enforcement action may be considered when IC requirements:

- have not been observed;
- have not been implemented or fail to meet requirements;
- have not been adequately maintained or monitored;
- fail to have required certification; or
- fail to meet reporting requirements.

Once a violation is identified through monitoring, inspection, reporting, or an IC performance evaluation, the entity who can enforce can then choose either the informal or formal phase, previously described.



The ITRC guidance document describes the potentially available tools for your agency when seeking to choose the informal/voluntary compliance assistance approach.

Voluntary compliance action may take many forms, and will vary from state to state; examples include an Informal Correction Letter (ICL), a Request for Corrective (or Compliance) Action (RCA), a Deficiency Letter (DL), or an Inspection Report that identifies one or more issues concerning IC requirements. Materials that support an informal enforcement action can be provided to further support the action and to assist the OP in fully understanding the IC violation. These materials can include inspection reports, photographs, maps, and copies of relevant regulations or laws

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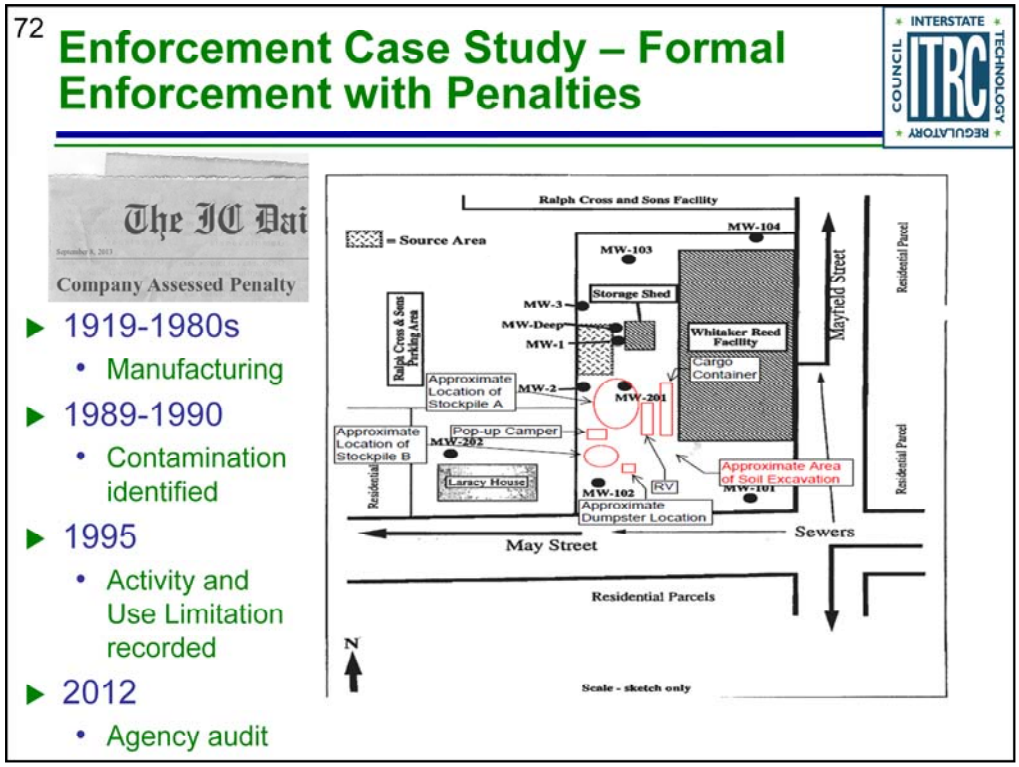
ITRC's IC Guidance Document - Briefcase for Formal Enforcement

- Notice of Violation
- Administrative Orders
- Judicial Orders
- Criminal Complaints (*in the most serious cases*)

See Section "Compliance and Enforcement Options – Involuntary Compliance" in ITRC Guidance Document for more details.

In the event that the party fails to respond to voluntary compliance measures or fails in any requirement for corrective action within the specified schedule, violations with significant environmental impact or OPs with a history of noncompliance may generally be considered for an NOV without the benefit of voluntary compliance measures. Formal administrative enforcement measures may include administrative orders, civil judicial action and, in the most serious cases, criminal action (Regulations).



I understand that the enforcement process may be a little challenging to put all together, so the ITRC guidance document includes real world case study examples. One such example takes place in Concord, Massachusetts.

1919 – late 1980s – building occupied by light manufacturing

1989 – 1990 – Property assessment identified oil stained soils with PCE and PCE contaminated groundwater

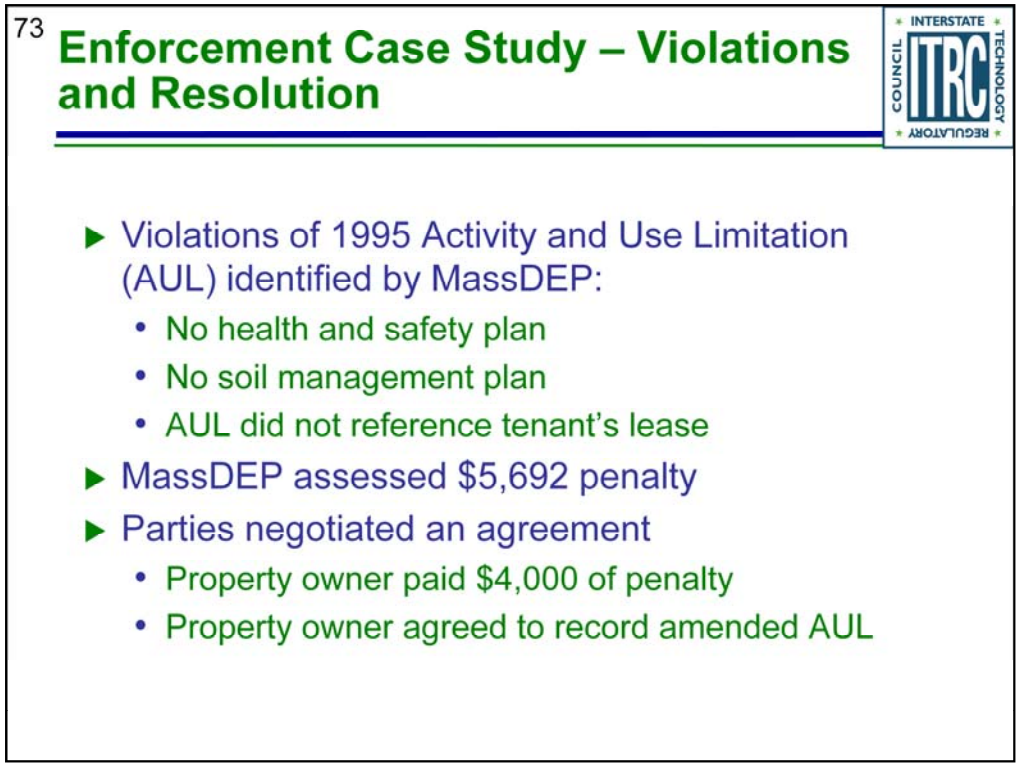
Remedial activities did not satisfy unrestricted use

1995 – Notice of Activity and Use Limitation (ASTMs restrictive covenant synonym) was recorded with Worcester District South Registry of Deeds

The Massachusetts Department of Environmental Protection may audit any property for which an AUL was recorded.

May 2012 – MassDEP observed soil disturbance & stockpiled soil

October 2012 – Soil samples collected & analyzed detected concentrations of PCE and extractable petroleum hydrocarbons.



The earth moving activities by a tenant at the site were observed without a required health and safety plan or soil management plan – both violations of the AUL. Massachusetts law provides for administrative penalties of up to $25,000 per day for failure to comply with the terms of an AUL.

In this case, Mass assessed a penalty of $5,692 and negotiated an agreement with the property owner to record an amended AUL to address the violations described above and pay $4000 in penalties while the rest were held in abeyance.

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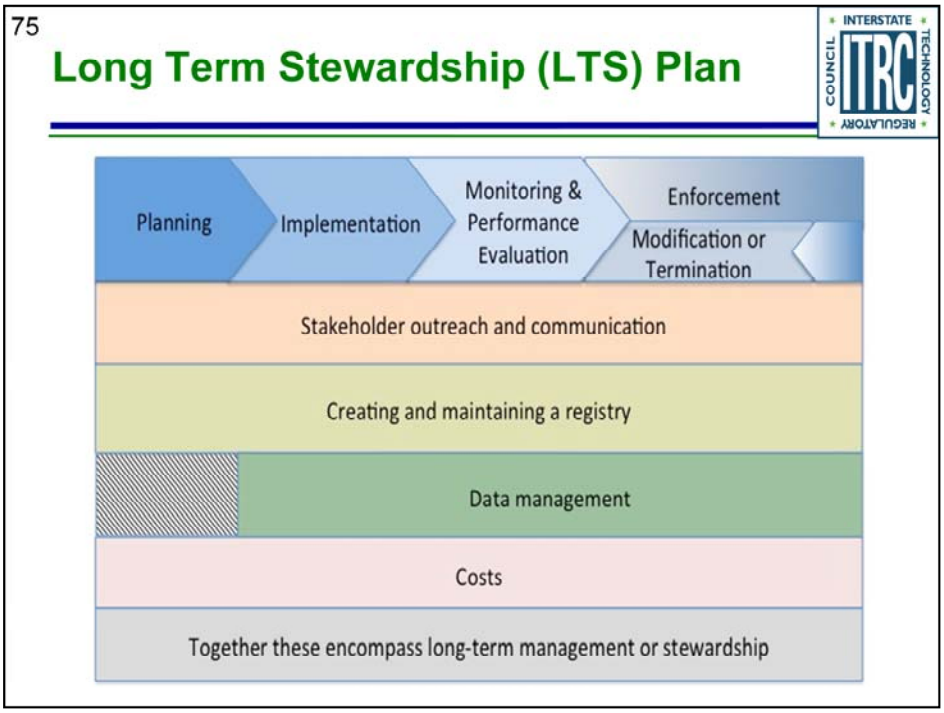
Enforcement Case Study Takeaway – MA. Authority and Framework

- MassDEP's administrative authority for ICs stems from statutory authority.
- Failure to comply with terms of Activity and Use Limitation (AUL) is failure to comply with Mass Contingency Plan.
- Law provides for administrative penalties up to $25,000 per day for failure to comply with the terms of AUL.

Massachusetts authorizes an administrative enforcement framework that begins with the issuance of compliance assistance letters to property owners who have a Notice of Activity Use Limitation on the property deed. Failures (identified through the audit program) to comply with the AUL is a failure to comply with the Massachusetts Contingency Plan, and enforcement action may be initiated as happened in this case.

In summary, planning for an IC enforcement action should take place at the time site-specific IC requirements are developed to carefully evaluate enforceability, interested parties, jurisdictional requirements, and methods of enforcement. Enforcement planning should occur as early as the development of a LTS Plan, which Lynn Bailey from the State of Hawaii's Department of Health, Office of Hazard Evaluation and Emergency Response, will now introduce.



An Institutional Control is “A legal or administrative restriction on the use of, or access to a site or facility to eliminate or minimize potential exposure to chemicals of concern.” ~ Team doc glossary

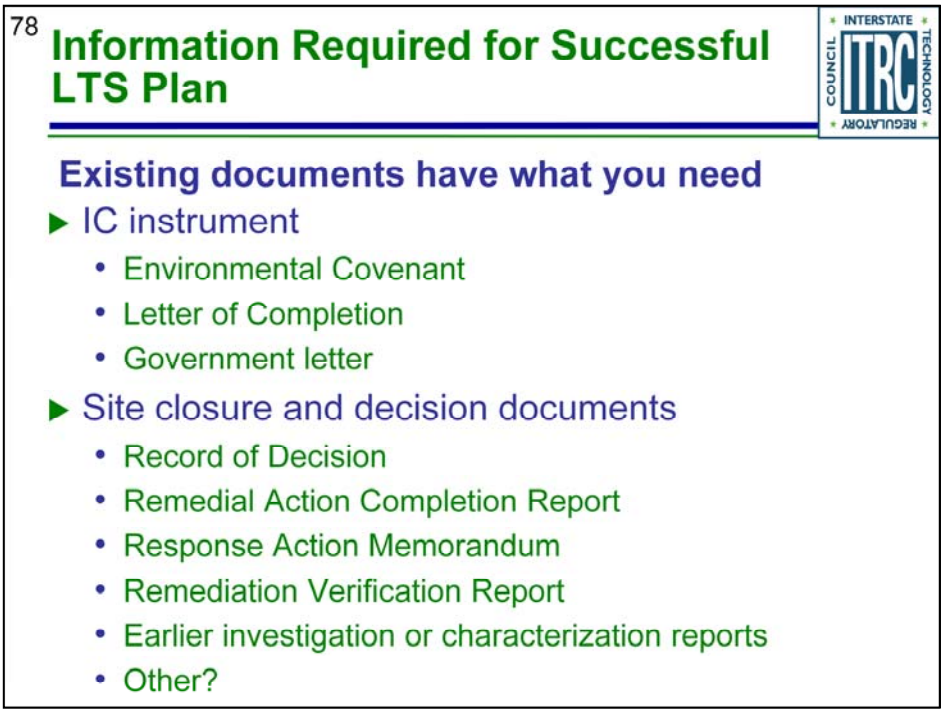
Long-term stewardship is required to ensure the IC remains protective of human health and the environment throughout the full IC life cycle.

- Had there been an LTS Plan, and had all stakeholders had access to it, we could have prevented the larger issues – release to ocean, fines from State and Fed. Gov, negative public attention.

Long Term Stewardship Plan

- Created AFTER IC is in Place
- LTS Plan Objectives
  - Ties everything together
  - Assigns responsibilities
  - Goal is long-term integrity of IC
- Who writes LTS Plan?
  - Most often the obligated party (OP)
- Who keeps LTS Plan?
  - Regulators
  - Property owners
  - Permitting agencies

Only 52% of the responding states require some sort of LTS plan



Note: Different states, different programs have different types of documents that can be good resources.

For Interim ICs pull information from finalized characterization reports, like remedial investigation reports or feasibility studies, as well as from the Interim IC.

The LTS Plan will build on the information in these documents to tie it into the components such as monitoring, registry, outreach and enforcement that the team discussed earlier.

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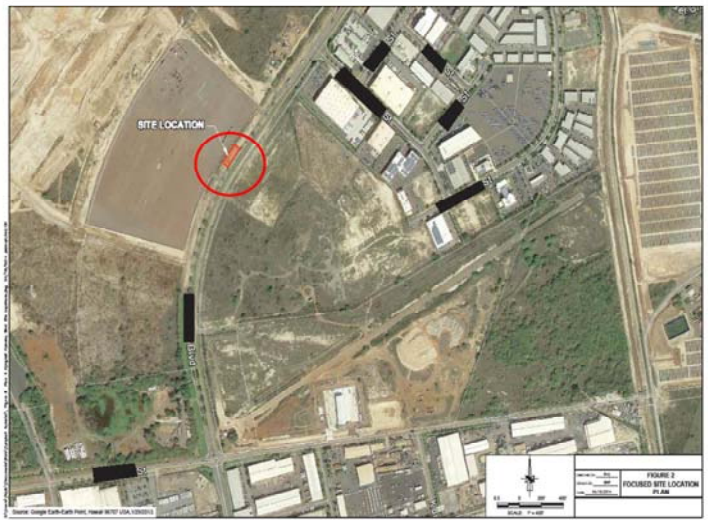
LTS Plan – Sample Site "Easement"



Example Site to show how simple it can be to create an effective LTS Plan - Tenants of the casting yard northwest of the site were excavating across a pipeline easement to put in wiring for some lighting. Fairly open area surrounded by industrial land. This site is a small, rectangular area with institutional controls for observed free product, groundwater contamination, and soil contamination.

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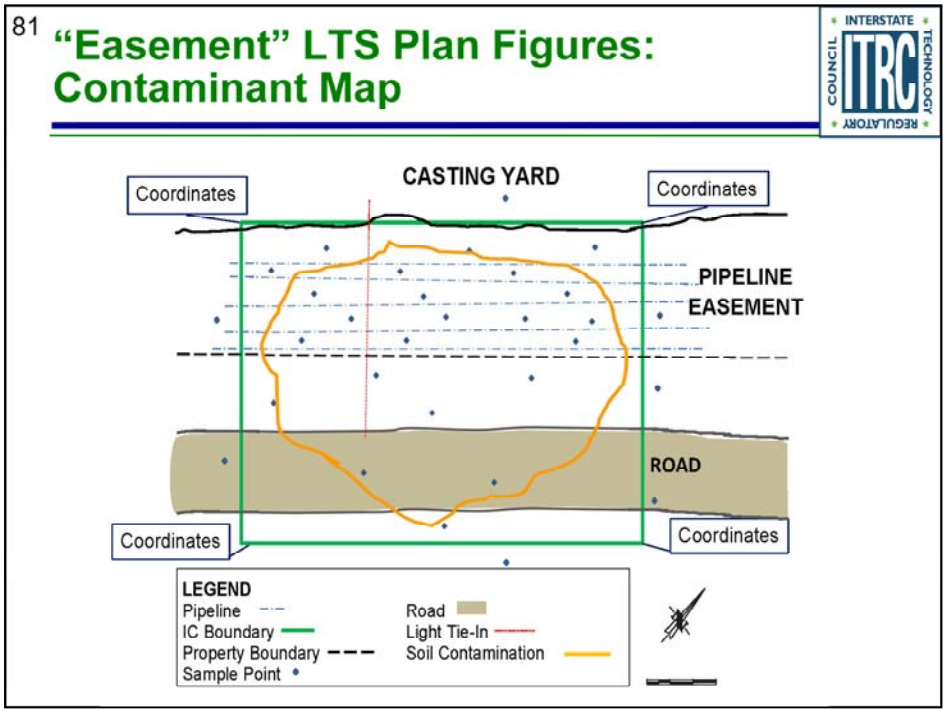
LTS Plan – Use Historical Site Information

- Figures with scale, legend, and directional arrow
  - Site location
  - Site plan
  - Contaminant maps
  - Conceptual site model
- Tables and text
  - Site background
  - Historical sample results



This is a simplified map for the presentation. Your LTS Plan contaminant figure most likely will have additional details, like call-out boxes with contaminant concentrations, depths to contamination, etc.

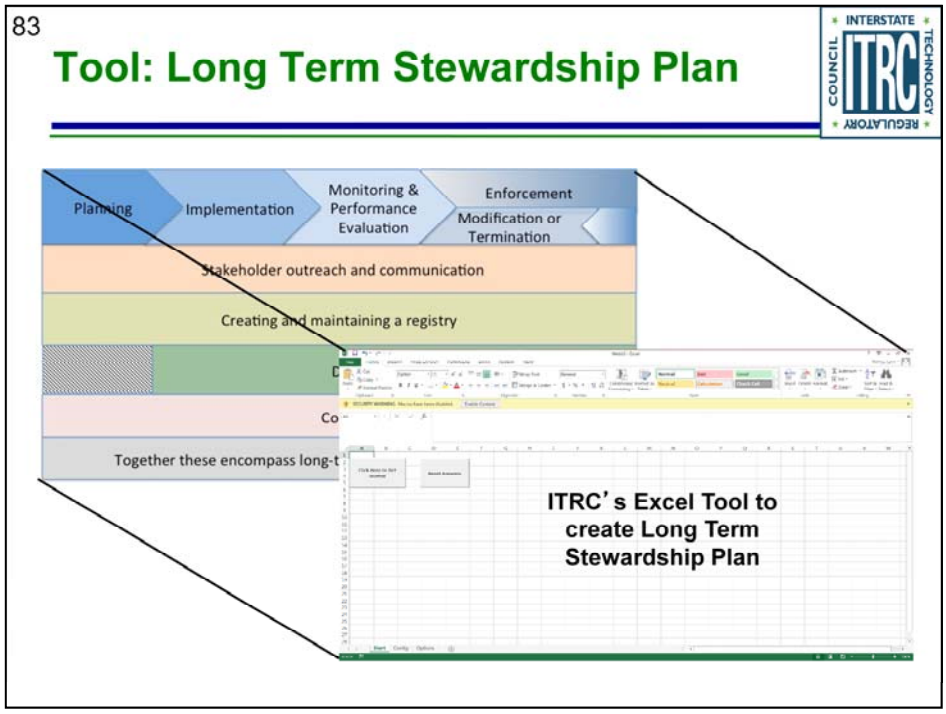
Need additional maps to show other contaminants and concentrations.

More complicated sites may need additional IC areas to be mapped.

Technical aspects of contamination management at example site are simple, but responsibility to manage different aspects of LTS not clear.

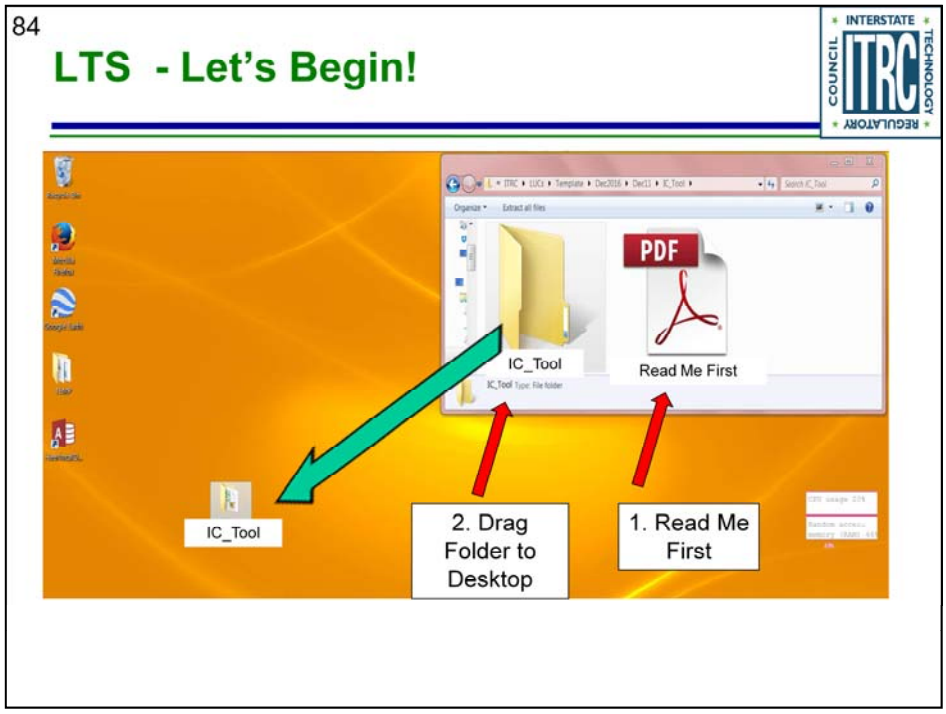
As we write the LTS Plan, the roles and responsibilities of each stakeholder must be clearly defined throughout the remaining life cycle of the IC – monitoring/performance evaluations, enforcement, modification/termination.

Additional known and potential stakeholders from Table 5 will be included in an appendix of the plan.



The LTS Tool allows users to generate an LTS Plan which can be further edited to smooth the language, add/delete information, or improve functionality.

After generating the document, coordinate with local regulators to ensure that the LTS Plan meets all regulatory requirements.

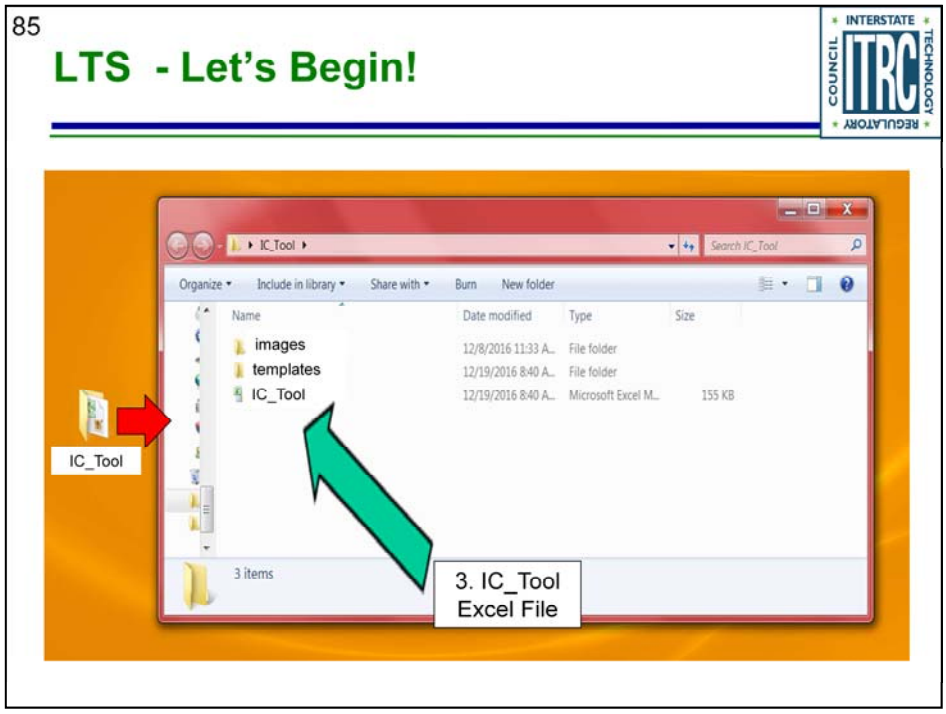


1) Click link in team document on the ITRC Web page to download tool.

2) Within a zipped file, you'll see a folder called IC_Tool and a .pdf document called "Read Me First". Open the "Read Me First" file.

3) Follow step by step instructions for saving and opening the tool. *****Note: If you get errors the first time you use the tool refer back to these instructions.

4) Extract the IC Tool from the zipped file by selecting the IC Tool folder and dragging it to your desktop. *****Note: The tool will only run properly if it is extracted, so please don't skip this step.



5) Open extracted folder called, "IC_Tool" on your desktop. Important: Please keep all these files and folders together as they are packaged. Changing the folder or file names or moving files/folders will hinder the tool functionality.

6) Click the IC_Tool Excel File to open.

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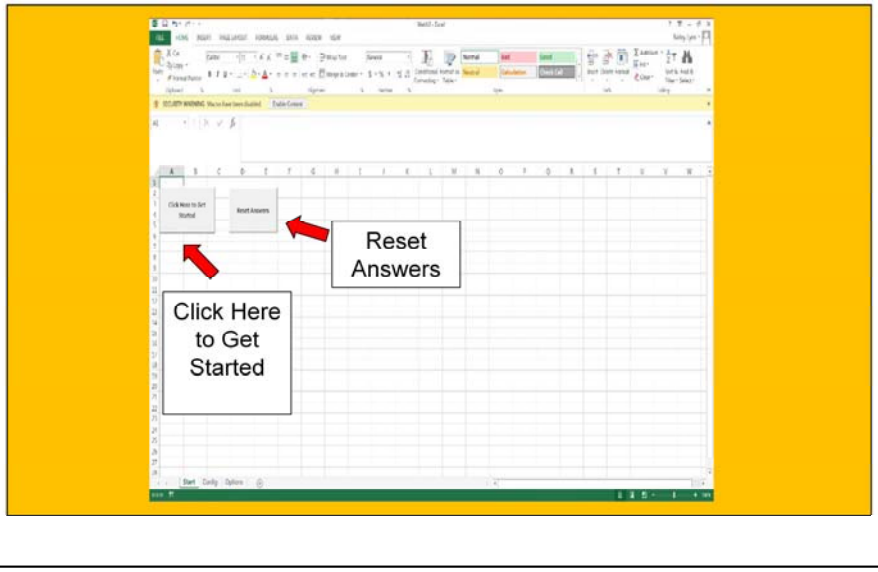
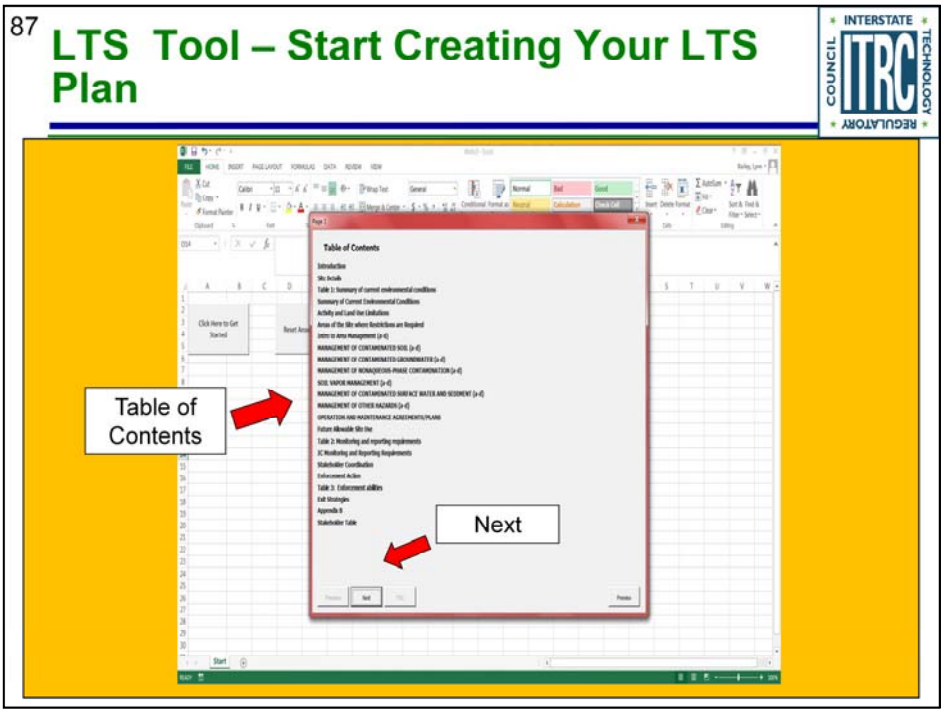
LTS Tool – Start Creating Your LTS Plan

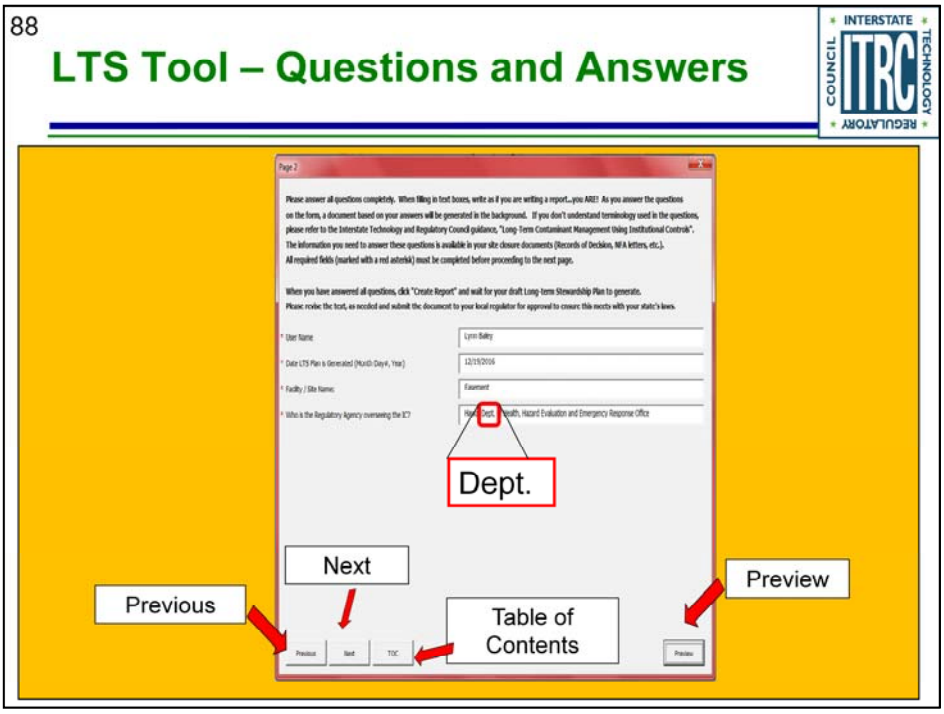


New users: Tool may auto open. If so, skip to next slide. If not, you may need to enable editing, enable content, and/or configure Excel to trust VBA. The “Read Me First” file will show you how to do this. Once those steps are complete, your screen will look like this.

Returning users: If you worked on the tool, close the tool to work on it later, and reopened it, you will also see this screen. Clicking “Click Here to Get Started” will send you to the Form Page where you left off. Clicking reset answers, clears all previous entries and returns you to the beginning.



The first time you use the tool, whether you “Click Here to Get Started” or whether the tool auto opens, the first thing you will see is the tool table of contents. Click next to go to the next slide.



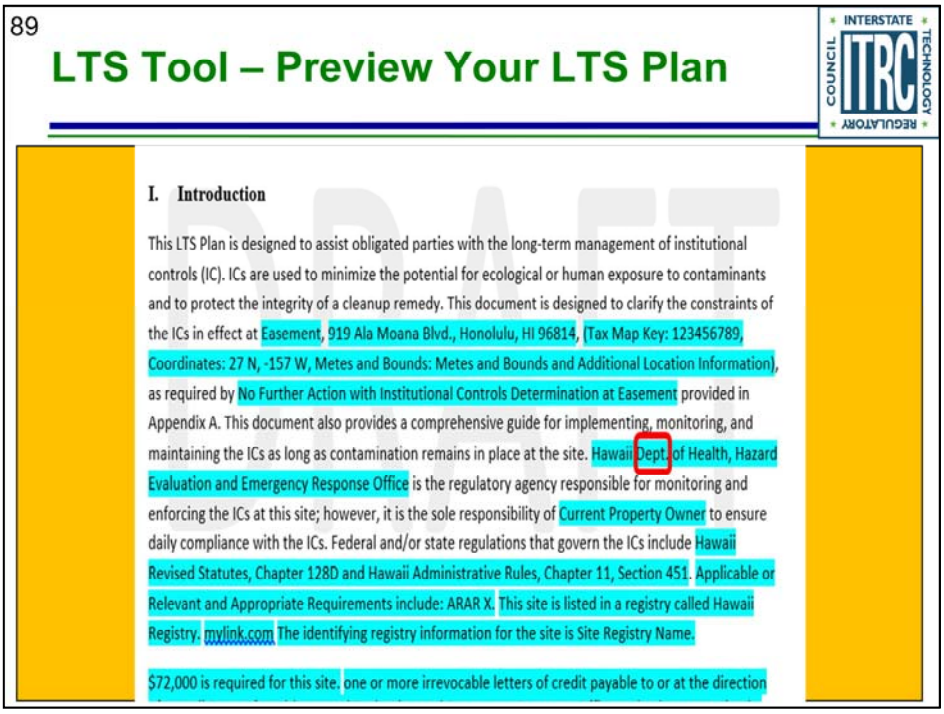
Three buttons at the bottom of form to navigate forward or back: Note: Any form question marked with a red asterisc is required. You will not be able to advance until all the questions marked with red asterisc are completed.

Use the existing historical info to complete the form.

Answers may be used throughout the LTS Plan being created.

Answers will appear exactly as typed.

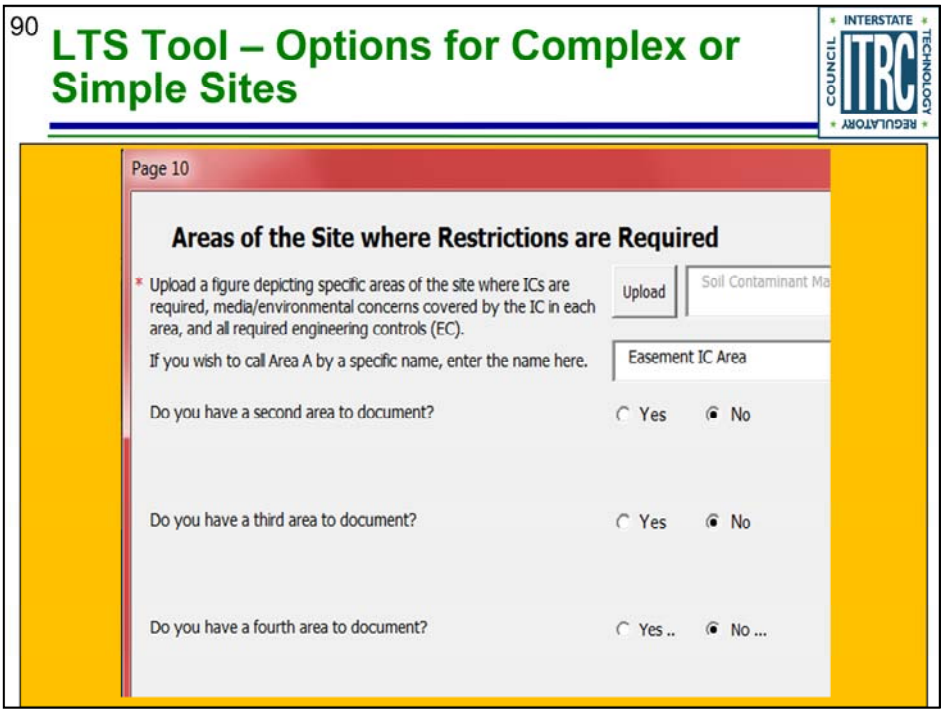
Whenever you would like to check your work, click on the preview button in the lower right-hand corner of each page of the form.



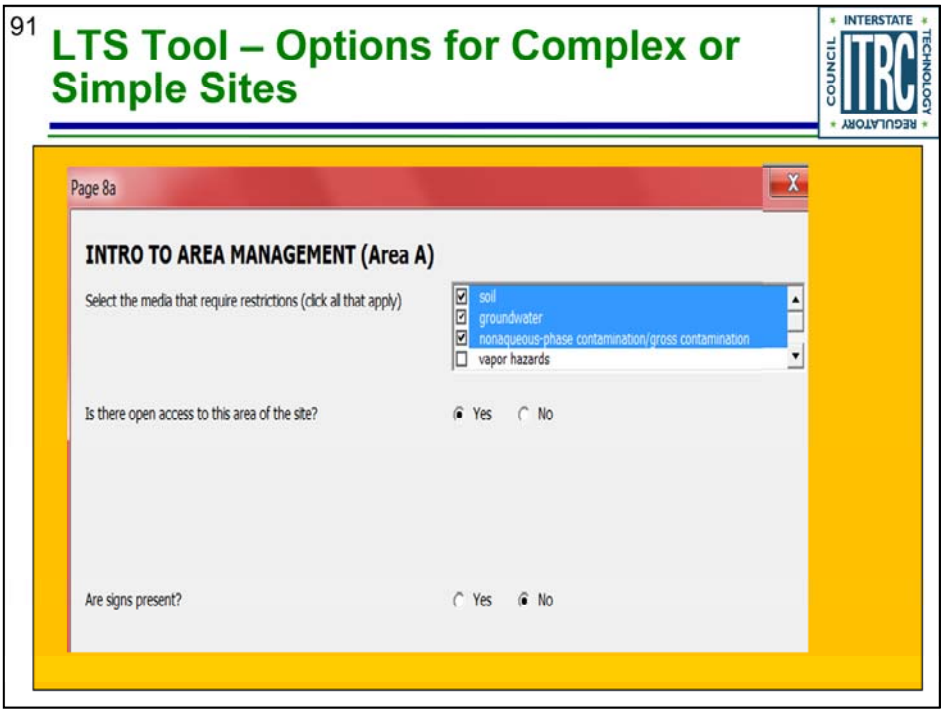
Screenshot of preview.

Form answers are highlighted in preview.

Unanswered questions appear as highlighted “Question Not Answered”.



Tool allows you to write LTS Plan for simple site with one IC, or complicated site with several areas with different ICs.



You will then be led through a series of questions about which types of contamination are controlled with ICs and ECs within each area.

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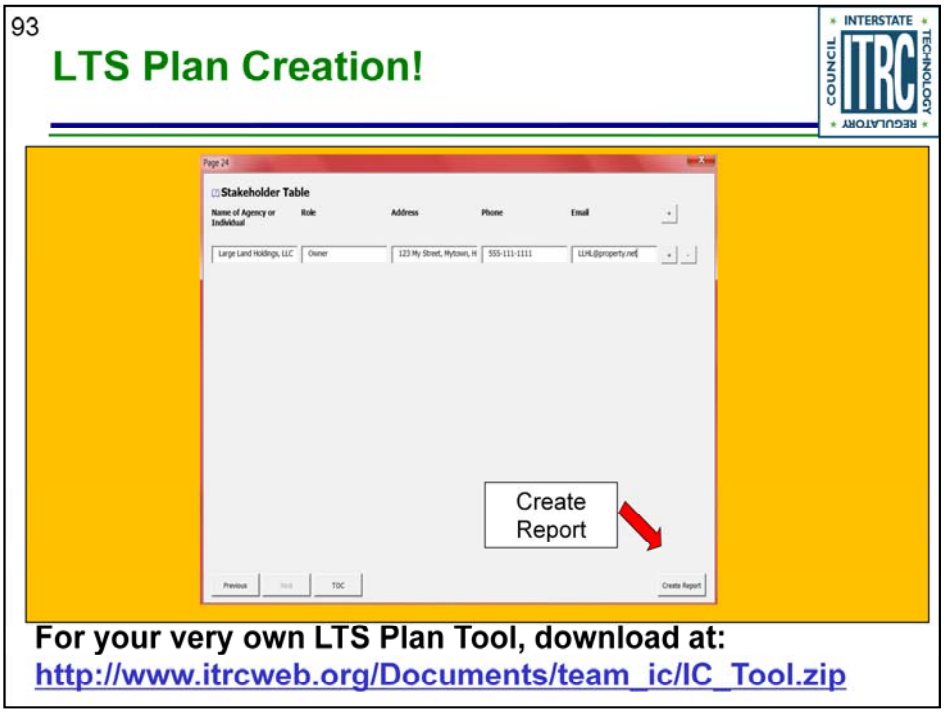
LTS Tool – Monitoring Questions

Activity or EC that Must be Monitored	Frequency of Inspection and/or Monitoring	Method of Inspection and/or Monitoring	Entity Conducting IC Monitoring	Reporting Requirement
Regulatory Compliance with all aspects of IC	Once every 5 years	Records review	Mr. Smith	Checklist
Cap Integrity	Annually	Site Visit	Future Property Owner	Photolog
Property transfer	Once every 5 years	Review Tax Records	IC Manager	Report
Operations and maintenance of systems	Monthly	Site Visit	AAA Consulting Firm	laboratory analytical results
Groundwater use	Annually	Review Well Permits	County Planning Office	other (specify)

Monitoring Table - After completing this section of the tool, a table like this will be included in the LTS Plan for your site.



Form used to generate a table: The column headings are shown, and one blank row is provided. Click on a cell and select a response from a pulldown tab or type in a response. When you complete a row, click on the plus sign to add a new row. Continue filling information and adding rows until your table is complete.

Click on the “Create Report“ button in the bottom right-hand corner of the last page. Your Plan is created. It is a Word file called “ITRC IC Final”. This file can be renamed, saved elsewhere, formatted, spell-checked, and edited like any other Word document

Users can save the form answers and update later, or they can reset the form to use it for a new LTS Plan for another site. Click TOC to return to the beginning. Then close the form and click the “reset answers” button.

Note link to download your tool.

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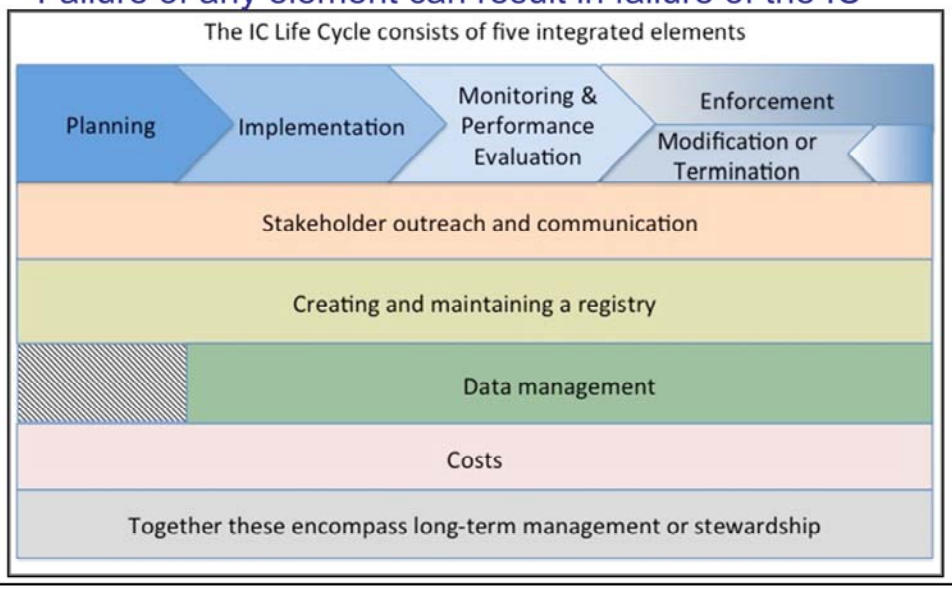
A Long-term Management Plan for ICs is Critical – ITRC Guidance Provides Solution

Failure of any element can result in failure of the IC



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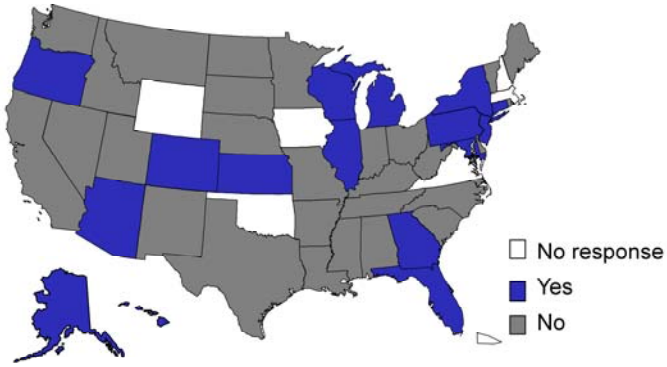
How Are ICs Managed for the Long-term on Your Sites?

Overarching Need – Long-term IC Management Procedures

- 64% of states responding have no standard procedure for selecting, using, and implementing Institutional Controls across different state programs.



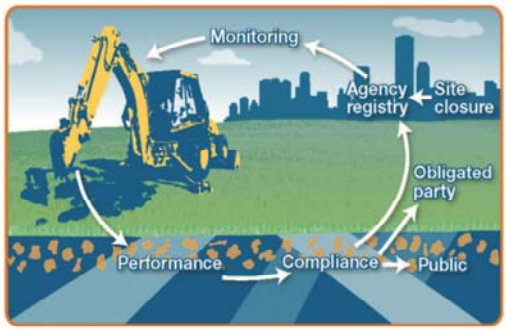
- Institutional Controls vary greatly across the states and within state programs.

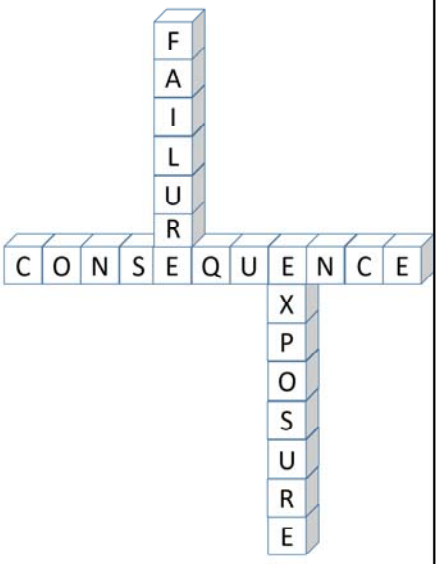
Are You Confident in the Long Term Integrity of ICs?

- If you are not actively managing or monitoring your ICs, how do you know they continue to be protective?
- If you don't have a plan or need to improve on your current plan…this ITRC guidance is for you!
- The ITRC guidance can serve as a credible, consensus-based tool to support your discussions.

Reduce Risk – Manage ICs

Reduce your risk of IC failure
Use ITRC's Guidance:
"Long-term Contaminant Management Using Institutional Controls"





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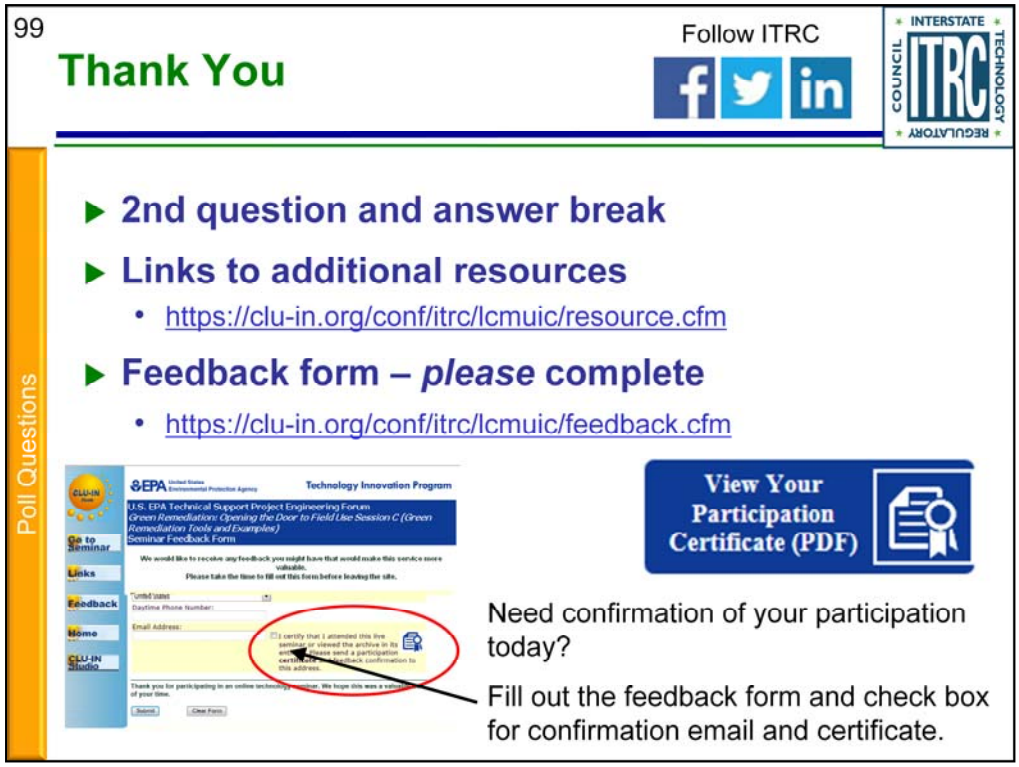
We Can Help You Ensure Your Institutional Control Success

The tools in the Guidance Document can Help maintain the integrity of ICs & Avoid accidental violations



Links to additional resources:
https://clu-in.org/conf/itrc/lcmuic/resource.cfm

Your feedback is important – please fill out the form at:
https://clu-in.org/conf/itrc/lcmuic/feedback.cfm

The benefits that ITRC offers to state regulators and technology developers, vendors, and consultants include:

✓Helping regulators build their knowledge base and raise their confidence about new environmental technologies

✓Helping regulators save time and money when evaluating environmental technologies

✓Guiding technology developers in the collection of performance data to satisfy the requirements of multiple states

✓Helping technology vendors avoid the time and expense of conducting duplicative and costly demonstrations

✓Providing a reliable network among members of the environmental community to focus on innovative environmental technologies

How you can get involved with ITRC:

✓Join an ITRC Team – with just 10% of your time you can have a positive impact on the regulatory process and acceptance of innovative technologies and approaches

✓Sponsor ITRC's technical team and other activities

✓Use ITRC products and attend training courses

✓Submit proposals for new technical teams and projects