U.S. EPA Institutional Controls Update

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EPA

Presentation Overview

♦ **IC Planning**
  » Introduction
  » ICIAPs
  » EPA Guidance
  » Case Example

♦ **Advanced Monitoring Systems**
  » Introduction
  » EPA Guidance
  » Examples

Institutional Controls (IC) Planning

♦ Essential for long-term success

♦ Prevents post implementation problems

♦ IC evaluation begins during RI/FS and continues through implementation

♦ Key factors for choosing the right IC instrument

» Intended duration of the ICs

» Number of parcels requiring restrictions

» Support for ICs by affected landowners

» State/tribal/local government cooperation

Institutional Controls Implementation Assurance Plan (ICIAP)

♦ A living document to systematically establish and document activities necessary to implement, maintain, and enforce long-term stewardship of ICs selected in decision documents

♦ Specifies the roles of the persons/organizations who will be responsible for duration of IC life-cycle

♦ Developed prior to, or at the same time as, the design of the engineered response (*e.g.,* RD phase), and finalized with design completion

♦ Should be revised as site conditions change but any IC modifications should be memorialized in a decision document

*A Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites (2012)*

» Provides EPA Regions with a template for developing IC plans at contaminated sites where the response action includes ICs

Model Enforcement Documents

» RD/RA SOW

» RI/FS SOW

Other Guidance – ITRC *Long-term Contaminant Management Using Institutional Controls* **(2016)**

Portland Harbor Superfund Site ICIAP
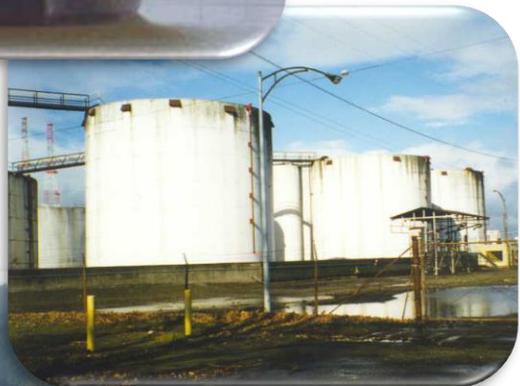
♦ **Primary IC Objectives:**

» Educate fishers

» Prevent damage to sediment caps

♦ **ICs include:**

» Site-wide: fish advisories, waterway use restrictions, coordinated permit review for in-river work

» Project areas: USCG and Oregon navigation regulations, 811 One-Call System, easements and use restrictions, IC registry

♦ **Programmatic ICIAP and Information Management Plan**

» Under development by the City and State

» Coordinates Harbor-wide IC planning and consistent expectations for IC implementation

» Describes ICs and process to document and track IC implementation, maintenance, enforcement, modification and termination

» Facilitates common guidance for Area-Specific ICIAPs for 15 Project Areas

» Easy access for public and decision makers on future actions

» Reference point for multi-decadal duration of project, and a coordination point to made necessary changes in perpetuity

Advanced Monitoring Technologies and Approaches to Maintain ICs

♦ Advanced monitoring technologies refers to a broad range of analytic systems, techniques, technologies, and approaches

♦ Used to facilitate more efficient and timely monitoring and maintenance of ICs, ECs, and other LTS activities

♦ Used to detect potential land uses or activities that:
  » are inconsistent with the cleanup
  » conflict with an IC
  » impede the effectiveness of an EC

♦ Can make IC and EC information more accessible to public

♦ Can be incorporated into ICIAPs

Advanced Monitoring Guidance

♦ ***Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship (2018)***

» EPA guidance provides information about the potential uses of specific advanced monitoring technologies and approaches for monitoring and maintaining ICs and ECs

» Applicable at sites addressed under federal or state cleanup authorities

» Provides details on these different technologies and examples where Regions, states, responsible parties, or third parties have used them

» Follow on to technologies/approaches discussion in earlier guidance (PIME, ICIAP, etc.)

Advanced Monitoring Examples

♦ Land Activity Monitoring

♦ One-Call Excavation Monitoring

♦ Land Use and Building Permit Monitoring

♦ GIS Mapping and Database Approaches

♦ Vapor Intrusion System Remote Monitoring

♦ Change Detection Monitoring

Land Activity Monitoring

♦ **Remote, web-based computer program**

♦ **Types of activities to be monitored include:**

» Real estate activities

» Issuance of building, excavation, street opening, and land development permits

» Sensitive land uses (schools, child care, etc.)

» Water well permits

» Aerial change detection

» Reported environmental releases

♦ **Program alerts PRPs and/or regulators for appropriate follow-up**

♦ Also known as "call-before-you dig" approach

♦ Notices of planned excavation activities are screened for potential conflict with ICs, ECs or other LTS component of remedy using a GIS map or a Web-based application.

♦ Excavator→ One-Call Center→ Create "excavation ticket"→ Site Owner/Operator/Manager → Send back "all clear" message or mark underground hazards

Land Use and Building Permit Monitoring

♦ Uses GIS together with the state or local government permitting process to identify land use activities that may conflict with ICs, ECs, or other LTS activities

♦ EPA, State, or PRPs can create a GIS file to flag properties with LTS obligations

♦ Local government can then notify permit applicants and stakeholders when an application is received

Additional Options

♦ **GIS Mapping**

   » can bridge the information gap between government and public by increasing awareness and understanding of ICs in their community

♦ **Vapor Intrusion System Remote Monitoring**

   » Detects whether VI systems are functioning properly

♦ **Change Detection Monitoring**

   » Periodically compares high-resolution aerial imagery for changes in land use

♦ **Use of ICIAPs**

   » Identify which technology (or technologies) will be implemented and maintained by which party

Resources

Superfund ICs Policy and Guidance
https://www.epa.gov/superfund/superfund-institutional-controls-guidance-and-policy

♦ *Guide to Planning, Implementing, Maintaining, and Enforcing Institutional Controls at Contaminated Sites* (2012)

♦ *Guide to Preparing Institutional Control Implementation and Assurance Plans at Contaminated Sites* (2012)

♦ *Advanced Monitoring Technologies and Approaches to Support Long-Term Stewardship* (2018)

Interstate Technology Regulatory Council (ITRC)

♦ *Long-Term Containment Management Using Institutional Controls* (2016) https://institutionalcontrols.itrcweb.org

Questions?

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