

# Environmental Studies Manual



Prepared for:  
***The Illinois State Toll Highway Authority***

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## TABLE OF CONTENTS

I. PURPOSE AND OBJECTIVES OF THE ENVIRONMENTAL STUDIES MANUAL.....	1
A. Purpose .....	1
B. Objectives .....	1
C. Resources of Concern .....	2
II. DEFINITION OF TERMS .....	4
III. ROLES AND RESPONSIBILITIES .....	8
A. Resource and Regulatory Agencies .....	8
B. ISTHA Staff .....	10
C. Design Section Engineer Staff .....	11
D. Construction Section Engineer Staff .....	11
IV. PROJECT ACTION LEVELS .....	12
V. DOCUMENTATION .....	14
A. Purpose of Documentation of Studies, Engineering and Environmental Issues.....	14
B. Application of Document Action Types to Projects .....	14
C. Types of ISTHA Environmental Documents.....	15
VI. GUIDANCE FOR ASSESSING RESOURCES OF CONCERN .....	18
A. Wetlands .....	18
B. Biological Resources .....	29
C. Public Lands .....	39
D. Streams, Lakes and Waterways .....	45
E. Cultural, Historical and Archaeological Resources .....	51
F. Special Waste .....	58
G. Noise Effects.....	69
H. Air Quality Effects.....	76
I. Agricultural Resources .....	82
J. Landscape, Erosion and Sediment Control.....	89
APPENDIX A. ESIS FORMS .....	95
APPENDIX B. IDNR MEMORANDUM OF UNDERSTANDING .....	107
APPENDIX C. ACOE, IDNR-OWR, IEPA JOINT APPLICATION MATERIALS .....	119
APPENDIX D. TRAFFIC NOISE STUDY DEFINITIONS.....	150
APPENDIX E. EROSION AND SEDIMENT CONTROL ANALYSIS FORM.....	152

## F. Special Waste

### 1. Purpose and Introduction

This chapter provides technical guidance for procedures for identifying, evaluating, documenting and coordinating the affects of ISTHA projects on special waste. Special waste may be present on property which could be affected by ISTHA projects. This section outlines a consistent, industry-accepted method for assessing the presence or absence of special waste on properties affected by ISTHA projects.

#### Special Waste Definition

The procedures outlined herein use the collective term “special waste”, which refers to both hazardous and non-hazardous waste. There are a few sources for the definition of a special waste and several components of the definition of a special waste. The definitions of special waste are found in:

- Environmental Protection Act (415 ILCS 5/3.45)
- Illinois Environmental Protection Act and Title 35 of the Illinois Administrative Code (IAC) of Regulations.

In summary, a special waste includes hazardous waste, potentially infectious medical waste, industrial process waste, and pollution control waste.

A hazardous waste is (1) listed on the IEPA hazardous waste list which can be obtained from the Illinois Office of Small Business or (2) has the characteristic of ignitability, corrosivity, reactivity, or toxicity (determined by generator knowledge or analytical testing in a laboratory). Also, a waste is hazardous as determined in conformance with the Resource Conservation Recovery Act (RCRA) hazardous waste determination requirements as presented in Section 722.111 of Title 35 IAC.

An industrial process waste is any liquid, solid, semisolid, or gaseous waste generated when manufacturing a product or performing a service. Examples include cutting oils; paint sludges; equipment cleanings; metallic dust sweepings; used solvents from parts cleaners; and off-specification, contaminated, or recalled wholesale or retail products. The following wastes are not industrial process wastes:

- uncontaminated packaging materials
- uncontaminated machinery components
- general household waste
- landscape waste
- construction or demolition debris

A pollution control waste is generated directly or indirectly when businesses remove contaminants from air, soil, or water. Examples include baghouse dust, landfill waste, scrubber sludge, and chemical spill cleaning material, and may be:

- liquid waste
- asbestos hazardous airborne pollutants regulated under the Clean Air Act
- regulated polychlorinated biphenyl (PCB) waste
- delisted hazardous waste
- characteristic hazardous waste treated or stabilized to be nonhazardous
- waste material generated by shredding recyclable metals

2. The following regulations or policies apply to special waste.

Federal

- Comprehensive Environmental Resource Conservation and Liability Act (CERCLA)
- Resource Recovery and Conservation Act (RCRA)

State

- Illinois Environmental Protection Agency (IEPA), Tiered Approach to Corrective Action Objectives (TACO), as presented in Title 35 Illinois Administrative Code (IAC) Part 740.

Other

- American Society for Testing and Materials (ASTM) Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process (Designation E 1527-97)
- ASTM Standard Practice for Environmental Site Assessments: Phase II Environmental Site Assessment Process (Designation E 1903-97)

3. Responsibilities

Illinois State Toll Highway Authority

ISTHA is to provide overall direction for the work, assess the findings of the DSE, determine regulatory applicability, and conduct all agency coordination.

#### Design Section Engineer

The DSE is to determine the potential for the presence of special waste. If possible, the DSE will determine the magnitude of the probability for its presence, the types of contaminants likely to be present, the aerial extent of the contaminants, and the media potentially impacted (soil, groundwater, etc.).

The DSE is to determine the potential for the presence of special waste within the project area based upon field observations, a database search, or any follow-up studies authorized by ISTHA. This applies to all ISTHA projects and actions that would:

- involve acquisition of additional right of way or easements (temporary or permanent)
- require a drainage structure
- involve borrow/contractor-use areas
- involve proposed access control revisions

#### 4. DSE Staff Qualifications

DSE special waste evaluations must be performed by a qualified environmental professional. A qualified environmental professional must meet all of the following criteria:

- 1) hold a bachelor's degree or above in civil, chemical, or environmental engineering, environmental technology, a life science, or chemistry
- 2) have at least three years experience in special waste assessment, including Phase I and Phase II assessments
- 3) have been 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) trained and hold a current 8-hour refresher certificate

Certifications in asbestos sampling and/or lead paint are encouraged.

#### 5. Submittals and Timing

Special waste issues shall be addressed at the earliest possible point in project development. The objective is to identify potential special waste issues during the Planning (Phase I) stage, rather than the design (Phase II) stage. Since Level I projects would likely fall under the Design Department, the ESIS Form Part I submittal would serve as the primary indicator for the potential presence of special waste. Addressing special waste issues during the planning stage is the best means possible of avoiding or minimizing special waste impacts.

*ESIS Form Part I*

If the proposed project will occur entirely within existing ISTHA right of way, the first step in project development is to conduct a field reconnaissance and submit the ESIS Form Part I. Section 6 of this chapter, entitled Methodology, describes this process. The ESIS Form provides a foundation to assess the potential for environmental concerns on the project. It is to initiate an awareness of any environmental issues present.

#### *Special Waste Memorandum*

If the proposed project will require new right of way or the acquisition of any property not currently owned by ISTHA, then a regulatory database search must be conducted in addition to the field reconnaissance. The database search, conducted according to ASTM standards, must be reviewed by a qualified professional to determine the potential risk for special waste to be present within project boundaries or for the project to be impacted by special waste from an off-site property. The database review must be documented in a Special Waste Memorandum. Section 6 of this chapter gives further details on the database search. Section 7 of this chapter gives details on the Special Waste Memorandum.

Once the ESIS Form Part I and/or the Special Waste Memorandum (if necessary) are completed and submitted, the DSE project staff and ISTHA will evaluate the potential for special waste impacts, including potential impacts from off-site properties. ISTHA will then verify the current project LEVEL and determine the need for additional studies. If potential impacts are greater than anticipated, the LEVEL may be elevated or reduced. Factors or resource issues other than special waste may affect this decision. One or two special studies would not necessarily affect a change in the project LEVEL.

#### *Environmental Site Assessment(s)*

If additional studies are determined to be necessary, ISTHA may direct the DSE to perform either a Phase I Environmental Site Assessment or a Phase II Environmental Site Assessment. The methodology and format for Environmental Assessments are discussed in Section 6.

#### *ESIS Form Part II*

As part of the pre-final design submittal, Part II of the ESIS Form should be completed. The ESIS Form Part II will enable ISTHA and the DSE to determine if the overall project design has changed since the ESIS Form Part I was completed, thereby causing impacts that were not originally anticipated. The ESIS Form Part II also documents measures that were

taken to avoid or minimize impacts. Five copies of the ESIS Form Part II should be forwarded to the Project Engineer.

6. Methodology

The process for addressing special waste issues may require several transmittals and coordination points with ISTHA. These are discussed below for the various types of projects. All coordination will be documented with written responses.

*Projects which do not require acquisition of new right of way or property:*

Reconnaissance/field observations: A site visit must be made for the purpose of determining the potential for the presence of special waste or the potential for off-site properties to affect ISTHA property. The field investigation shall identify areas that raise concerns, i.e., stained soil, stressed vegetation, vent pipes, signs indicating pipelines, nearby facilities known to handle special waste/materials, etc. Photographs of any areas of concern shall be taken.

*Projects which require acquisition of new right of way or property:*

For projects which will require the acquisition of property, in addition to the reconnaissance discussed above, the DSE will conduct a database search for the purpose of identifying known environmental hazards to the property. The DSE will conduct a database search, or have a database search conducted, of the customary federal and state databases. These databases should include U.S. Environmental Protection Agency, IEPA, Department of Transportation, and any other databases considered customary by industry standards and required by ASTM E 1527-97. Searches should be conducted on the following databases: Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), Emergency Response Notification System (ERN), National Priorities List (NPL), Resource Conservation and Recovery Information System (RCRIS), Facility Index System (FINDS), PCB Activity Database (PADS), RCRA Administration Action Tracking System (RAATS), Toxic Release Inventory System (TRIS), Toxic Substance Control Act (TSCA), Hazardous Materials Incident Report System (HMIRS), state landfills and hazardous waste site databases, state underground storage tanks databases, leaking underground storage tank databases, and any other databases available and appropriate for the radii required by ASTM E 1527-97.

Any sites identified by the database search should be visited during the site reconnaissance. In addition, adjacent and nearby properties should be visited during the site reconnaissance for the purpose of identifying

Phase I ESA Report and a copy of a DSE memorandum concluding that a “no risk” or “low risk” determination has been made.

If the Phase I ESA does identify RECs or AOECs that are determined to impact the property or the ISTHA project, then the DSE shall make a determination whether the property evaluated presents “moderate risk” or “high risk” for special waste. The DSE and ISTHA shall then evaluate options for reducing the risk to an acceptable level through avoidance or through a Phase II ESA to evaluate the actual conditions of the subsurface.

The DSE shall document the Phase I ESA findings in the environmental documentation for the project. The documentation should be a copy of the Phase I ESA and a copy of a DSE memorandum concluding that a “moderate risk” or “high risk” for special waste determination has been made and a recommended action to respond to the risk finding.

#### *Phase II Environmental Site Assessment*

ISTHA will respond to the DSE recommendation in writing. If it is determined that a Phase II ESA is required, ISTHA will direct the DSE to conduct the assessment in accordance with ASTM E 1903-97, at a minimum. The purpose of the Phase II ESA is to assess the presence or absence of contamination in soil and/or groundwater. The Phase II ESA should be performed by an appropriately experienced and trained environmental professional. In addition to the staff qualifications discussed in Section 4, DSE personnel performing the Phase II ESA must also have the following qualifications:

- specific task training on proper sampling methods, sample packaging methods for transportation, and chain-of-custody procedures
- respiratory protection training and current respirator fit test
- annual medical monitoring

The DSE shall produce a report of the Phase II ESA which shall include a discussion of the findings, conclusions, and recommendations. Findings should include a comparison of the laboratory analytical results to the various corrective action objectives for the exposure routes and property use as presented in IEPA’s Tiered Approach to Corrective Action Objectives (TACO). If the Phase II ESA does not identify impacts to the property or AOECs that have been determined to impact the property or the ISTHA project, then the DSE shall make a determination whether the property evaluated presents “no risk” or “low risk” for special waste. The DSE shall document this finding in the environmental documentation for the project. The documentation should be a copy of the Phase II ESA and a copy of a DSE memorandum concluding that a “no risk” or “low risk” determination has been made.

potential off-site facilities that pose an environmental risk to the proposed property but were not identified by the database search. The database search findings, site reconnaissance findings, and their implications for the project should be summarized in a Special Waste Memorandum.

#### *ESIS Form Part I*

Upon completion of the site reconnaissance and any database searches (if necessary), the DSE will complete and submit the ESIS Form Part I. The submittal shall include photographs of any areas suspected of being contaminated or having the potential to have caused contamination and the Special Waste Memorandum (if issued). Based on the information provided, ISTHA will make a recommendation, in writing, of one of the following:

- a) there is no reason for further investigation, or
- b) further investigation is required

Generally, ISTHA would determine that no further investigations are necessary if all of the following criteria are true:

- a) additional right of way is not required
- b) new property will not be acquired due to the project
- c) the site reconnaissance did not reveal any indications of contamination on the property
- d) there are no nearby, off-site properties which pose a risk of contamination to the property
- e) the project is not at or adjacent to a pre-existing Tollway M-Yard, storage facility, warehouse, etc.

If ISTHA determines that further investigation is required, they will indicate whether a Phase I Environmental Site Assessment should be conducted or if the DSE should proceed directly to a Phase II Environmental Site Assessment.

#### *Phase I Environmental Assessment*

The DSE shall conduct a Phase I Environmental Site Assessment (ESA) in accordance with ASTM standard E 1527-97, at a minimum. The DSE shall produce a report for the Phase I ESA which shall present the findings, conclusions, and recommendations. If the Phase I ESA does not identify Recognized Environmental Conditions (RECs) or Areas of Environmental Concern (AOECs) that are determined likely to impact the property or the ISTHA project, then the DSE shall make a determination whether the property evaluated presents "no risk" or "low risk" for special waste. The DSE shall document this finding; the documentation should be a copy of the

If the Phase II ESA does identify impacts to the soil and/or groundwater or AOECs that have been determined to have impacted the property or the ISTHA project, then the DSE shall make a determination whether the property evaluated presents “moderate risk” or “high risk” for special waste. The DSE and ISTHA shall then evaluate options for reducing the risk to an acceptable level. ISTHA may request that the DSE develop an Opinion of Cost for site remediation in order for ISTHA to evaluate all options.

Depending upon the Phase I ESA and/or the Phase II ESA results concerning the contamination involved, the DSE and ISTHA will evaluate options for reducing the risk of special waste impacts. These options could include avoidance, minimization, stabilization, providing a special provision in the construction plan documents to require monitoring for worker protection, or providing a special provision in the construction plan documents for managing contaminated soils as special wastes. ISTHA may request that the DSE prepare a cost estimate for managing the contaminated soil as special waste, including removal and disposal of contaminated soils and associated monitoring for worker protection.

#### *ESIS Form Part II*

As part of the pre-final design submittal, Part II of the ESIS Form should be completed. The ESIS Form Part II should document measures that were taken to avoid or minimize impacts, as well as discusses measures taken to minimize any risk of special waste impacts.

### 7. Documentation

#### *ESIS Forms Part I and II*

These forms serve to document and summarize overall site constraint and conditions at the project site. They act as a checklist to ensure environmental issues are not overlooked. When it is determined that there are special waste concerns, these forms serve as the preliminary documentation.

### *Special Waste Memorandum*

If the proposed project will require the acquisition of new property, the DSE will conduct or obtain a database search to identify known environmental hazards to the property. The results of the database search and any site visits associated with the database search will be summarized in a Special Waste Memorandum. The format for this document should follow the format below.

1. Title
2. Project Location
3. Summary of Facilities located by the Database Search
4. Conclusions Regarding the Potential for Identified Facilities to Impact the Project

### *Phase I Environmental Site Assessment Report*

If further investigation is required, ISTHA may require the DSE to perform a Phase I ESA. The Phase I Environmental Site Assessments shall be documented in a report. The format for this document should follow the format below.

1. Title
2. Overview of Assessment or Executive Summary
3. Site Location, including:
  - a. Location Map
  - b. Vicinity Description
  - c. Hydrologic, Geologic, and Topographic Description of Property and Surroundings
4. Findings, including:
  - a. Property Use History
  - b. Site Investigation Observations
  - c. Review of Database Search
  - d. Review of Environmental Risks from Off-site Facilities
5. Conclusions

### *Phase II Environmental Site Assessment Report*

If further investigation is still required, ISTHA may require the DSE to perform a Phase II ESA. The Phase II Environmental Site Assessments shall be documented in a report. The format for this document should follow the format below.

1. Title
2. Executive Summary
3. Site Location, Vicinity Description, Reason(s) for Study

4. Investigative Procedures
5. Investigative/Analytical Results
6. Comparison of Analytical Results to TACO Corrective Action Objectives
7. Conclusions

#### *Contract Documents*

Contract documents should make note of any special waste concerns. Contract documents which may require special waste notations include, but are not limited to site plans, mitigation plans, and project specifications.

Contract documents are to follow all appropriate DSE Manuals. Special requirements shall be noted on the drawings. Special requirements may include avoidance measures such as “no intrusion” areas, the placement of “no intrusion” fencing, or the placement of mats to minimize soil disturbance. Special provisions may need to be developed for the project specifications. These special provisions could include, but are not limited to, special provisions requiring monitoring for worker protection; special provisions for removing, managing, or disposing of contaminated soils as special wastes; or special provisions for dust suppression. Special waste locations and impacts which result from utility locations or placements shall also be identified and clearly labeled.

Special waste areas shall be shown on all applicable drawings. The boundary shall be in bold font. Any impacts, such as excavating or grading shall be shown with a cross-hatched shading. The size of the areas (in acres) shall be clearly labeled.

Any special waste areas within the construction zone which are not to be directly impacted by the project shall be shown on the drawings. They are to have “no intrusion” fencing as well as appropriate sediment and erosion control methods applied, shown on the drawings. This will reduce the overall risk for a release or for the health and safety of construction workers.

# ISTHA SPECIAL WASTE COORDINATION PROCESS

