

Policy Number – DRAFT	Last Update:
Effective Date: TBD	May 4, 2010
Title : Lead Paint Policy	

POLICY STATEMENT

Cayuga County (County) is dedicated to providing safe, healthy facilities for County employees, contractors, vendors, and the general public. The County is committed to compliance with federal and state occupational health and safety and environmental standards and regulations. This policy establishes general procedures for the identification, maintenance, and construction activities that involve lead paint at County-owned properties.

This policy applies to County employees who might be exposed to lead during the course of their job. The policy focuses on employees who conduct painting and paint preparation activities (i.e. scraping, sanding, etc.), the Departments that conduct these construction/maintenance activities, and the Departments requesting these services to be performed by other Departments. The County realizes that employees that work with lead or lead-containing materials have the potential to be exposed to lead through ingestion (eating) or through inhalation (inhaling lead dust or vapors).

Employees conducting the construction activities (scraping, sanding, planning, cutting, etc.) shall comply with 29 CFR 1926.62, the “Lead Exposure in Construction” standard (See **Appendix A**) and is applicable for materials that are found to contain **any** amount of lead. In addition, materials found to contain greater than 1.0 mg/cm² or 0.5% by weight, indicates the presence of “lead based paint”, as outlined in USEPA definitions, and must be handled in accordance with USEPA regulations/Toxic Substance Control Act (TSCA).

Non-construction employees, who might be exposed to lead in the workplace shall comply with 29 CFR 1910.1025 the “Lead Exposure in General Industry” standard.

County employees, or individuals under the direction of County employees (work crews, correctional facility inmates, public assistance recipients, etc.), shall not perform construction activities consisting of scraping, sanding, cutting (by saw or torch), without verification that the painted surface they are working on is lead-free. The associated documentation (proving that the painted surface is lead-free) shall be kept at the work-site and kept available for all workers to review prior to and during work activities.

If lead is present **at any level**, employees who work with the materials must be appropriately trained, must have the appropriate personal protective equipment (PPE), and may require medical surveillance (depending on the level of potential exposure assessment during a specific work task).

TRAINING

Please note that the following training (and this policy, in general) is applicable to County-owned facilities where children-occupied areas and/or target housing do not exist. Additional employee training (not included in this Policy) shall be required, if County workers elect to engage in lead paint activities at the Historic Post Office or any other County facility that meets this criteria.

Lead Awareness Training

Lead awareness training must be provided to all employees who are likely to disturb lead or work with lead-containing materials (defined as any detectable amount of lead present in the paint). Where there is a potential exposure to lead at **any** level, the employees must be informed of the contents of 29 CFR 1910.1025 App A (Substance Data Sheet for Occupational Exposure to Lead) and App B (Employee Standard Summary). These are provided as **Appendix B** of this policy. Lead awareness training must be repeated on an annual basis. New employees shall receive this training prior to working with any lead-containing materials.

Additional training is required for employees that may be exposed to lead while conducting construction activities (scraping, sanding, sawing, cutting, etc.). These employees must attend lead worker training, as described in Lead Worker Training.

Lead Worker Training

29 CFR 1910.1025 and 1926.62 require that an employee health and safety program be implemented for all employees who may potentially be exposed to lead during work activities, including but not limited to: sanding, planning, scraping, etc. Employees, who are potentially exposed to lead in excess of 30 ug/m³ on any day during a given year, are required to attend Lead Training in accordance with 29 CFR 1926.62. At a minimum, Lead Worker Training will include the following:

- Where and what is lead;
- The hazards associated with lead;
- How to minimize the risk of the worker bringing lead from the worksite into their homes;
- Employee information concerning sources of lead, including warning labels, signs and material safety data sheets (MSDS);
- Contents of the Lead Standard 29 CFR 1926.62;
- Specific nature of the operations which could result in exposure to lead above the action level;
- Purpose, proper selection, fitting, use and limitations of respirators and PPE;
- Purpose and description of the medical surveillance and medical removal programs, including health effects of lead exposure and potential reproductive consequences;
- Engineering controls and work practices for lead-related work;
- Review and discussion of the County's Policy;
- Instructions to employees that chelating agents should not routinely be used to remove lead from their bodies and should not be used at all except under the direction of a licensed physician; and
- Employee's right of access to records under 29 CFR 1910.20.

Department Heads will identify the specific individuals/job descriptions involved, so that employee exposure assessments can be performed. All costs associated with training, personal protective equipment, and medical monitoring provided to County employees will be assumed by the employee's respective department. Training must be provided annually for any employee with a potential to lead exposure. This category would include employees who have the potential to disturb lead-containing paint or lead-containing components/building materials in the course of normal activities such as carpenters, painter, and plumbers who use lead containing solders.

RESPONSIBILITIES

The following identifies the responsibilities for various parties affected by this policy.

County Administration (Legislature, County Administrator, Human Resources)

- Develop and distribute the written Lead Management Plan;
- Assist in identifying employees and coordinate the training that they require. (See Training Section for more specific training information). The training content will depend upon the nature of the activity:
 - For employees who have the potential to be exposed to lead at any level, and are not working in construction, they must be informed annually of the contents of 29 CFR 1910.1025, Appendix A (Substance Data Sheet for Occupational Exposure to Lead) and Appendix B (Employee Standard Summary).
 - For employees who have the potential to be exposed to lead at or above the action level of 30 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$), and are working in construction, must be provided a training program as outlined in 29 CFR 1926.62(l).
 - For employees who are exposed to lead in any form, for example, painters and carpenters involved in the disturbance of lead-containing or lead-based paint, and are exposed to lead in excess of 30 $\mu\text{g}/\text{m}^3$ on any day during a given year, must be provided a training program as outlined in 29 CFR 1910.1025(l)(1)(ii).
- Coordinate and direct all required or recommended medical surveillance for employees, as required by regulations;
- Provide for medical consultations and examinations for workers who have been exposed or believe they may have been exposed to lead;
- Provide for maintenance of medical records relating to consultations, examinations and medical surveillance, as required by law;
- Maintain records of employee participation in training and provide confirmation back to the departments the list of participants;
- Perform exposure monitoring as requested by supervisors;
- Coordinate assessment of materials to determine lead content as necessary to determine exposure potential;
- Maintain building-specific inventory of lead-containing or LBP information;
- Review periodically the Lead Paint Policy and revise as necessary.

Department Heads

Note – Though Buildings & Grounds, Parks & Trails, and Highway personnel are actively involved in painting activities, this section applies to **any** Department that may impact lead-containing materials:

- Assure that all employees who have potential to contact lead-containing materials are aware of the hazards associated with lead. This includes individuals that are sanding, scraping, and/or painting AND employees that might contact lead while these operations are being conducted;
- Coordinate and arrange for appropriate lead training and respiratory protection training, exposure monitoring, medical surveillance, medical consultations (as required);
- Maintain training records for employees in your department;
- Coordinate assessment of materials to determine lead content, as necessary, to determine exposure potential;
- Coordinate and document exposure monitoring;
- Coordinate with appropriate management/Department Head(s) (from the area where work will be conducted) to gather material assessment information and obtain appropriate lead-based paint inventory information. Please note that Hazardous Material Survey Reports for County-owned buildings are maintained by the Superintendent of Buildings and Grounds;
- Oversee contracts requiring the disturbance of known lead-containing materials, lead-based paint, and/or presumed lead-containing materials;
- Identify requirements for compliance with applicable Federal and State lead regulations in contract specifications;
- Coordinate the collection of and obtain information such as OSHA personal exposure sampling and any area sampling results, as necessary, to evaluate potential exposures to County employees (or satisfy information requests from County employees and regulatory agencies related to construction operations);
- Interface with contractors where enforcement of related contract provisions will need to be required;
- Maintain submittal documents and related records from contracts associated with work that impacts presumed or known lead-containing applications in a manner that is readily retrievable in case of a regulatory inspection;
- Communicate requirements to contractors; and,
- Ensure lead waste is properly managed according to all applicable regulations.

Supervisors

- Assure that all employees who have a potential to be exposed to lead have received the appropriate training;
- Assure that employees under their control follow the lead management plan practices, as described in this program;
- Arrange for exposure monitoring where needed to document exposure levels or provide negative exposure assessments;
- Initiate medical surveillance for any employee who has the potential for exposure to lead, as outlined in 29 CFR 1910.1025 or 29 CFR 1926.62;
- Coordinate assessment of materials to determine lead content as necessary to determine exposure potential; and
- Report any problem associated with implementation of the Lead Management Plan in the work area to the Department Head.

Employees

- Perform his/her work as safely as possible and follow all safety procedures;

- Comply with and understand the provisions of the Lead Paint Policy and work practices identified for individual tasks;
- Report existing or potential health or safety hazards to the Supervisor immediately; and
- Attend appropriate training, as required by Lead Paint Policy.

IDENTIFYING LEAD IN THE WORKPLACE

Several workplaces at the County (buildings constructed prior to 1978) have an increased potential for encountering lead-based paint or lead-containing materials. This is due to the historic use of lead-containing applications of various natures, including, but not limited to: paints, varnishes, glazes and solder. In order to determine potential exposure to lead as a result of operations and maintenance activities, the presence of lead in an area must be determined prior to work activities.

Hazardous Materials Surveys (including lead-based paint) were conducted for all County-owned buildings in 2007 and 2008, and should be considered a primary source of information regarding the presence/absence of lead-based paint on interior and exterior building surfaces. These reports are maintained by the County Superintendent of Buildings and Grounds.

For buildings, constructed prior to 1978, lead-based paint assessments must be performed for any surface that will be disturbed and is suspected of containing lead. The only exception to this rule is where it is documented that the building received a complete interior renovation, and all interior components were demolished and removed from the area of renovation. However, areas with new applications of paint must not be assumed to be lead-free, as lead containing paint may exist in or under new applications. Assessments, conducted by a properly trained, qualified individual, shall be required utilizing one of the following methods:

- Referencing existing building surveys, construction notes or as-built drawings may be used where the surfaces involved are referenced. Renovation file notes and updated drawings may be used to identify surface replacements.
- Substrate testing using an X-ray fluorescence (XRF) lead in-paint analyzer.
- Collecting a sample of the intact paint and submitting it to an accredited laboratory for lead analysis.
- Soil tests for lead contamination.

The operation of the XRF or the collection of paint chip samples may be conducted by County Department of Environmental Health personnel who have appropriate lead training and who have been properly trained on the use of the XRF equipment. Other sampling methods may be conducted by properly trained individuals (i.e., who have lead worker training), or by a certified outside consultant. Lead swabs shall not be utilized, as they are not recognized method of detecting presence or absence of lead.

EXPOSURE MONITORING

If lead is identified in areas/materials scheduled for work activities, then the County shall be required to provide personal monitoring, sampling, and analysis, in accordance with NIOSH Method 7082, Sampling Airborne Particulate for Lead. Analysis will be conducted by an American Industrial Hygiene Association accredited laboratory. Results in excess of the Action Level (AL) will require additional employee protection measures in accordance with

either 29 CFR 1926.62 or 29 CFR 1910.1025, depending how the work is classified (i.e. construction or general industry).

At a minimum, initial exposure monitoring will be conducted to determine exposure levels and to verify that respiratory protection/PPE is appropriate. Initial exposure monitoring will be required to represent each specific task. A task may be a single job (i.e., sanding), or may incorporate a series of jobs conducted during a given work day. An example would be an employee that was directed to scrape loose paint, rough sand the area to be painted, and then paint. It is important that the employee's activities are clearly defined and documented during personal air monitoring.

Personal exposure monitoring involves an employee wearing a sampling unit during the course of the workday. The sampling unit includes a pump that is worn on the belt, vinyl tubing that extends over the person's shoulder, and a filter cartridge (attached to the tubing) located in the employee's breathing zone. The pump is turned on and kept on for the duration of work activities. Upon completion, the cartridge is removed and submitted for laboratory analysis to determine the lead concentration over the given work period.

An exposure assessment is a compilation of work procedures, environmental conditions, required respiratory/personal protective equipment, and exposure air monitoring data. The data collected from the assessments are important as they form the basis for defining controls to minimize or eliminate potential exposures to lead and work practices, engineering controls, etc., may be modified based upon the sampling results.

An exposure assessment will be prepared and maintained by each department encompassing the job tasks applicable to that department. Departments may rely on exposure assessment/air monitoring data collected by another department, as long as materials (for example: lead concentrations in paint), work procedures, environmental conditions and required respiratory/personal protective equipment are identical.

Provided that the County has valid, representative data for the specific work activity to be performed, the County may rely on the exposure monitoring data collected within the previous 12 months during work operations conducted under workplace conditions closely resembling the processes, type of material, control methods, work practices and environmental conditions used and prevailing in the employer's current operations. If the work activities to be performed vary from any existing data, additional exposure monitoring shall be required.

In response to employee concerns regarding potential exposure to lead in the vicinity of a work area, the department(s) having the work performed, department(s) proximal to work area(s), or by neighbors proximal to outside work areas, area samples may be collected. All such air sampling shall be performed by an appropriately-trained industrial hygienist. However, to the extent feasible, lead work activities shall not take place within 25 feet of the general public or County employees that are not involved in the lead work activities.

MEDICAL SURVEILLANCE

In accordance with 29 CFR 1910.25 and 1926.62, employees who are performing construction work and are occupationally exposed on any day to lead at or above the action limit (AL), shall

have initial medical surveillance consisting of biological monitoring in the form of blood sampling and analysis for lead and zinc protoporphyrin (ZPP) levels.

The County's obligation to offer medical surveillance is triggered by the results of the air monitoring program. Full medical surveillance must be made available to all employees who are or may be exposed to lead in excess of the action level for more than 30 days a year and whose blood lead level exceeds 40 ug/dl.

Employees who may be exposed to lead for 30 days in any consecutive 12 months will be offered the following medical surveillance:

- blood sampling and analysis at least every 2 months for the first 6 months and every 6 months thereafter;
- workers with blood lead levels at or above 40 ug/dl will have a blood test at least every two (2) months until two (2) consecutive tests (a week apart) show levels less than 40 ug/dl;
- if an employee is medically removed due to elevated blood lead levels, a second (follow-up) blood sampling must be performed within two weeks after the employer receives the results of the first test; and,
- blood tested upon termination of employment.

A ZPP is required on each occasion that a blood lead level measurement is made.

Employees will receive the confidential results of blood tests from the medical facility conducting the sampling. All medical records remain confidential unless the employee grants permission for his/her records to be released. However, Human Resources will be notified of the employee's fitness to continue performing lead work. Human Resources will notify the individual's Supervisor/Department Head, of the results. In the event that an employee's blood lead level exceeds 40 ug/dl, the employee will be moved or transferred to another area until blood lead levels decrease as verified through subsequent blood testing, and County Administration and affected Department Head(s) will collectively investigate the work practices used to determine why the employee's blood tested high for lead. The investigation and subsequent corrective action plan will be developed to prevent future elevated exposures.

The County will determine whether medical surveillance is to be performed the County Health Department, or by a private, outsourced medical provider that specializes in industrial medicine. An outside medical provider would be non-biased, would assure that employee's medical records were maintained confidentially, and would be able to provide required information to Human Resources/ Department Heads regarding the ability of an individual to perform their job duties.

If the County chooses to utilize the services of the County Health Department for medical surveillance services, a procedure must be developed between Human Resources and the County Health Department to assure that records are maintained for the required period of time, and that the confidentiality of the employee's medical records is strictly maintained.

Medical Consultation

A medical examination shall be provided to each person enrolled in the lead medical surveillance program if at any time the individual experiences symptoms consistent with lead intoxication, needs consultation concerning the potential effects of past lead exposure or on the ability to procreate or carry a healthy child, or has difficulty breathing during fit-testing or the use of a respirator. This medical consultation will be conducted by the County Health Department, or outsourced to an industrial medical facility. The examination shall be conducted annually for any individual who has had a blood-lead level of 40 ug/dl or greater or has been medically removed in the past 12 months. The content of the physical exam shall be at the discretion of the attending physician but shall include at a minimum:

- A detailed work history and a medical history, with particular attention to past lead exposure (occupational and non-occupational), personal habits (smoking, hygiene), and past gastrointestinal, hematologic, renal, cardiovascular, reproductive and neurological problems;
- A thorough physical examination, with particular attention to teeth, gums, hematologic, gastrointestinal, renal, cardiovascular, and neurological systems. Pulmonary status should be evaluated if respiratory protection will be used;
- A blood pressure measurement;
- A blood sample and analysis which determines blood lead level, hemoglobin and hematocrit determinations, red cell indices, and examination of peripheral smear morphology, zinc protoporphyrin, blood urea nitrogen and serum creatinine;
- A routine urinalysis with microscopic examination; and
- Any laboratory or other test relevant to lead exposure which the examining physician deems necessary by sound medical practice.

RESPIRATORY PROTECTION

County workers engaged in lead work will require respiratory protective equipment at all times.

The use of respiratory protection shall be in accordance with 29 CFR 1910.134, Respiratory Protection and the County's Respiratory Protection Program. Any employees utilizing a respirator shall read and understand the appropriate regulations and County Program prior to any work activities. All workers must be medically evaluated to determine the ability of the worker to perform the work while wearing a respirator. Training in the care, use, and fitting of the respirator will be required. Respirator fit-testing shall be conducted by the County for those employees who are authorized to wear a respirator. Any worker who is not authorized to wear a respirator will be prohibited from engaging in activities which may expose the worker to airborne lead.

All employee respirators worn at the work site should be placed in a plastic bag prior to leaving the site and should be thoroughly cleaned before being worn again. Cleaning should include inspection of the respirator and replacement of worn parts. Fit-checks should be done each time the respirator is worn. The medical exam, fit-testing, and training must be repeated annually.

Respirators shall be selected based upon the results of personal air sampling data, as follows:

Airborne concentration of lead	Required respirator ¹
Not in excess of 50 µg/m ³	Half-mask air-purifying respirator equipped with high efficiency filters ^{2,3} .
Not in excess of 250 µg/m ³	Full facepiece, air-purifying respirator with high efficiency filters ³ .
Not in excess of 500 µg/m ³	(1) Any powered, air-purifying respirator with high efficiency filters ³ ; or (2) Half-mask supplied-air respirator operated in positive-pressure mode ² .
Not in excess of 1000 µg/m ³	Supplied-air respirators with full facepiece, hood, helmet, or suit, operated in positive pressure mode.
Greater than 1000 µg/m ³ , unknown concentration or fire fighting.	Full facepiece, self-contained breathing apparatus operated in positive-pressure mode.

1. Respirators specified for higher concentrations can be used at lower concentrations of lead.
2. Full facepiece is required if the lead aerosols cause eye or skin irritation at the use concentrations.
3. A high efficiency particulate filter means 99.97 percent efficient against 0.3 micron size particles.

PERSONAL HYGIENE PRACTICES

The County recognizes that even when airborne lead exposure levels are low, the potential exists for significant lead ingestion due to poor personal hygiene practices. No eating, drinking, application of cosmetics (including lip balm), or smoking is permitted at work sites where lead-containing materials and/or lead-based paints are being disturbed. Workers shall wash their hands, arms, and faces, prior to eating, drinking, applying cosmetics, or smoking, and prior to leaving the worksite. The County will provide appropriate disposable protective coveralls and shoe coverings. Workers shall remove the disposable protective clothing before leaving the worksite to prevent contaminating areas outside the worksite. Workers should shower and wash their hair after finishing work to prevent spreading residual lead dust.

When chemical strippers are used to remove lead-based paint, appropriate impermeable gloves and chemical resistant clothing shall be worn for worker protection as well as safety goggles or face shields to protect the eyes from chemical splashes. Portable eye wash equipment must be available on site. The area where the chemical stripper is being used must be well ventilated to avoid exposure to potentially toxic vapors. This process shall only be utilized in an outdoor or well ventilated environment.

WORKING WITH LEAD-BASED PAINT

The following tables present information on working with lead paint and the do's and don'ts associated with removing or preparing lead based paint surfaces.

Why You Should Be Concerned

What You Should Do

Understand rules and regulations

PESH requires individuals who work with lead-based paint to follow specific procedures. Contractors are responsible for Understanding the procedures and for training their employees to follow them.

Review this guide. It highlights requirements and offers guidelines on protecting you, your workers, your customers, and the environment from lead-based-paint contaminants.

Contain the work areas

Uncontained lead dust, chips, and debris settle on soil, plants, and furniture. Cleanup or replacement can be very expensive. It is a good idea to notify neighbors before work begins. It is good P.R. and it gives them a chance to close windows, move play equipment, cover garden spots, etc. in case any lead debris moves into the next yard.

INTERIORS

- Turn off and seal the HVAC system.
- Remove belongings or wrap them in plastic - especially rugs and upholstered furniture.
- Cover floors and carpet with double layers of heavy-duty plastic sheeting and tape the sheeting to the skirting boards.
- Use protected passageways or plastic runners between work areas and exits.
- Close off the work area with heavy-duty plastic sheeting (see the "Best practices" page).
- Work on one room at a time.
- Keep all non-trained individuals, especially children and women of child-bearing age, out of the work area.

EXTERIORS

- Spread heavy-duty plastic sheeting at least 10 feet from the foundation, covering the ground and vegetation.
- Move play equipment away from the work areas and cover sand pits.
- Close nearby windows and doors.
- Use a shade cloth to contain dust.
- Capture and filter waste water; make sure it doesn't run into a storm drain.
- Keep all non-trained individuals, especially children and women of child-bearing age, out of the work area.

Choose an appropriate work method

Some paint removal activities produce toxic fumes and mists, and other methods spread lead dust. Cleaning up uncontained contaminants can be very expensive.

Minimize the amount of lead-based paint you disturb. If you need to remove lead-based paint, review the tables on the following pages.

They highlight what you need to know

		about various methods for removing lead-based paint: what you should do, what you should avoid, and your responsibilities under PESH's safety and health rules.
Clean up work areas properly	Cleanup methods such as dry sweeping and using household or shop vacuums spread dust and debris.	Work wet and clean up daily. Wet debris before sweeping. For cleanup, wet down debris and use a HEPA vacuum (see the "Best Practices" page).
Dispose of waste correctly	Paint chips, sludge, and contaminated PPE may be hazardous waste and must be disposed of in accordance with federal, state and local regulations.	Clean up daily using wet methods and HEPA vacuum. Collect visible paint chips. Put the debris into heavy-duty plastic bags, buckets or similar containers, and secure them. Arrange for proper disposal.

REMOVING LEAD BASED PAINT

Methods and Practices

	Don't	Do
Hand scraping and sanding	Do not use dry scraping or sanding. And do not use power sanders or scrapers. These methods spread lead dust, the most common source of lead poisoning.	Work wet and contain the work area. Use a hand sprayer/hose with fine spray nozzle to wet surfaces. Cover floors with double layers of plastic sheeting before you begin work. Close all windows.
Using heat	Avoid using extreme heat. Lead-based paint heated above approx. 950 degrees F can generate harmful toxic fumes. Do not use open flame torching. When an open flame heats lead-based paint, it generates toxic fumes.	Use a heat gun and keep the setting low (below 750 degrees F) or work wet with a hand scraper, sanding sponge, or wire brush.
Using power sanders, grinders, and saws	Do not use uncontained power sanding, grinding, or abrasive blasting. Lead dust a common source of lead poisoning, particularly among children and pets. Site cleanup costs can be very expensive.	Use only powered sanding and grinding equipment fitted with a special shrouding and a HEPA vacuum exhaust. If shrouded HEPA-vac tools are not available, use a complete containment system. Always use a complete containment system with abrasive sandblasting equipment.
Using power washers	Do not use uncontained power-washing and hydroblasting for paint removal. Lead-contaminated water can enter storm drains; most street drains empty directly into creeks or streams. Filter waste water. Never empty filtered water into street drains or on	If power washing must be used, contain all wash water including all runoff, over spray and splash. Dispose of wastewater in accordance with applicable federal, state and local regulations.

	the ground. Contaminated ground may require expensive clean-up and/or removal and replacement of topsoil or landscaping.	
Using chemical paint strippers	Avoid inhaling or contacting chemical paint strippers. The chemicals are harsh and some produce harmful vapors. Methylene chloride, a common paint stripper is particularly hazardous.	Use chemical paint strippers only for small tasks. Cross ventilate work areas, use non-corrosive, non-volatile strippers, and wear chemically resistant gloves. The sludge from stripping work is hazardous waste; dispose of it in accordance with applicable federal, state and local regulations.
Manual demolition	Avoid doing manual demolition work in uncontained areas – cleaning up contaminated living/working space can be very expensive.	Always contain and cover work areas, work wet, and clean up daily, alternating wash and HEPA vacuum cycles.

The County shall conduct all construction activities involving lead paint in accordance with the procedures presented in the U.S Department of Housing and Urban Development's ***Lead Paint Safety: A Field Guide for Painting, Home Maintenance and Renovation Work.*** A copy of the Field Guide is presented as **Appendix C.**