

PREPUBLICATION COPY NOTICE:

The EPA Administrator signed the following advanced notice of proposed rulemaking on **April 22, 2010**:

Lead; Renovation, Repair, and Painting Program for Public and Commercial Buildings
[RIN 2070-AJ56]

This is a **prepublication version** of the advanced notice of proposed rulemaking that EPA is submitting for publication in the *Federal Register*. While the Agency has taken steps to ensure the accuracy of this Internet version of the advanced notice of proposed rulemaking, it is not the official version of the advanced notice of proposed rulemaking for purposes of public comment. Please refer to the official version of the advanced notice of proposed rulemaking that will appear in a forthcoming *Federal Register* publication.

Once the official version of the advanced notice of proposed rulemaking publishes in the *Federal Register*, this prepublication version of the advanced notice of proposed rulemaking that appears on the Web site will be replaced with a link to the advanced notice of proposed rulemaking that appears in the *Federal Register* publication. At that time, you will also be able to access the on-line docket for this rulemaking at <http://www.regulations.gov>. You can then use EPA's electronic docket and comment system at www.regulations.gov to submit or view public comments, access the index listing of the contents of the docket, and to access those documents in the docket that are available electronically. The docket number for this rulemaking is **EPA-HQ-OPPT-2010-0173**. For further information about the docket and commenting, please consult the ADDRESSES section in the front of the advanced notice of proposed rulemaking.

For additional information about lead and lead hazards, go to <http://www.epa.gov/lead/>. You can speak to an information specialist by contacting [The National Lead Information Center \(NLIC\)](#) at **1-800-424-LEAD (5323)** (see also <http://www.epa.gov/lead/pubs/nlic.htm>).

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 745

[EPA–HQ–OPPT–2010–0173; FRL–8823–6]

RIN 2070–AJ56

Lead; Renovation, Repair, and Painting Program for Public and Commercial Buildings

AGENCY: Environmental Protection Agency (EPA).

ACTION: Advance notice of proposed rulemaking.

SUMMARY: EPA is giving advance notice of the Agency’s intention to regulate the renovation, repair, and painting of public and commercial buildings under section 402(c)(3) of the Toxic Substances Control Act (TSCA). This notice announces the commencement of proceedings to propose lead-safe work practices and other requirements for renovations on the exteriors of public and commercial buildings and to determine whether lead-based paint hazards are created by interior renovation, repair, and painting projects in public and commercial buildings. For those renovations in the interiors of public and commercial buildings that create lead-based paint hazards, EPA will propose regulations to address these hazards.

DATES: Comments must be received on or before [*insert date 60 days after date of publication in the Federal Register*].

ADDRESSES: Submit your comments, identified by docket identification (ID) number EPA–HQ–OPPT–2010–0173, by one of the following methods:

- *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the on-line instructions for submitting comments.

- *Mail:* Document Control Office (7407M), Office of Pollution Prevention and Toxics (OPPT), Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC

20460–0001.

- *Hand Delivery:* OPPT Document Control Office (DCO), EPA East Bldg., Rm. 6428, 1201 Constitution Ave., NW., Washington, DC. Attention: Docket ID Number EPA–HQ–OPPT–2010–0173. The DCO is open from 8 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The telephone number for the DCO is (202) 564–8930. Such deliveries are only accepted during the DCO’s normal hours of operation, and special arrangements should be made for deliveries of boxed information.

Instructions: Direct your comments to docket ID number EPA–HQ–OPPT–2010–0173. EPA’s policy is that all comments received will be included in the docket without change and may be made available on-line at <http://www.regulations.gov>, including any personal information provided, unless the comment includes information claimed to be Confidential Business Information (CBI) or other information whose disclosure is restricted by statute. Do not submit information that you consider to be CBI or otherwise protected through [regulations.gov](http://www.regulations.gov) or e-mail. The [regulations.gov](http://www.regulations.gov) website is an “anonymous access” system, which means EPA will not know your identity or contact information unless you provide it in the body of your comment. If you send an e-mail comment directly to EPA without going through [regulations.gov](http://www.regulations.gov), your e-mail address will be automatically captured and included as part of the comment that is placed in the docket and made available on the Internet. If you submit an electronic comment, EPA recommends that you include your name and other contact information in the body of your comment and with any disk or CD-ROM you submit. If EPA cannot read your comment due to technical difficulties and cannot contact you for clarification, EPA may not be able to consider your comment. Electronic files should avoid the use of special characters, any form of encryption, and be free of any defects or viruses.

Docket: All documents in the docket are listed in the docket index available at

<http://www.regulations.gov>. Although listed in the index, some information is not publicly available, e.g., CBI or other information whose disclosure is restricted by statute. Certain other material, such as copyrighted material, will be publicly available only in hard copy. Publicly available docket materials are available electronically at <http://www.regulations.gov>, or, if only available in hard copy, at the OPPT Docket. The OPPT Docket is located in the EPA Docket Center (EPA/DC) at Rm. 3334, EPA West Bldg., 1301 Constitution Ave., NW., Washington, DC. The EPA/DC Public Reading Room hours of operation are 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number of the EPA/DC Public Reading Room is (202) 566-1744, and the telephone number for the OPPT Docket is (202) 566-0280. Docket visitors are required to show photographic identification, pass through a metal detector, and sign the EPA visitor log. All visitor bags are processed through an X-ray machine and subject to search. Visitors will be provided an EPA/DC badge that must be visible at all times in the building and returned upon departure.

FOR FURTHER INFORMATION CONTACT:

For technical information contact: Hans Scheifele, National Program Chemicals Division, Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave., NW., Washington, DC 20460-0001; telephone number: (202) 564-3122; e-mail address: scheifele.hans@epa.gov.

For general information contact: The TSCA-Hotline, ABVI – Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554-1404; e-mail address: TSCA-Hotline@epa.gov.

SUPPLEMENTARY INFORMATION:

I. General Information

A. Does this Action Apply to Me?

This document is directed to the public in general. However, this document may be of particular interest to the following entities:

- Building construction (North American Industrial Classification System (NAICS) code 236), *e.g.*, commercial building construction, industrial building construction, commercial and institutional building construction, building finishing contractors, drywall and insulation contractors, painting and wall covering contractors, finish carpentry contractors, other building finishing contractors.
- Specialty trade contractors (NAICS code 238), *e.g.*, plumbing, heating, and air-conditioning contractors, painting and wall covering contractors, electrical contractors, finish carpentry contractors, drywall and insulation contractors, siding contractors, tile and terrazzo contractors, glass and glazing contractors.
- Real estate (NAICS code 531), *e.g.*, lessors of non-residential buildings and dwellings, non-residential property managers.
- Facilities support services (NAICS code 561210).
- Other general government support (NAICS code 921) *e.g.*, general services departments, government, public property management services, government.

This listing is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be affected by this action. Other types of entities not listed in this unit could also be affected. The NAICS codes have been provided to assist you and others in determining whether this action might apply to certain entities. If you have any questions regarding the applicability of this action to a particular entity, consult the technical person listed under **FOR FURTHER INFORMATION CONTACT**.

B. What Should I Consider as I Prepare My Comments for EPA?

1. *Submitting CBI*. Do not submit this information to EPA through regulations.gov or e-

mail. Clearly mark the part or all of the information that you claim to be CBI. For CBI information in a disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM that you mail to EPA, mark the outside of the disk or CD-ROM as CBI and then identify electronically within the disk or CD-ROM the specific information that is claimed as CBI. In addition to one complete version of the comment that includes information claimed as CBI, a copy of the comment that does not contain the information claimed as CBI must be submitted for inclusion in the public docket. Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2.

2. Tips for preparing your comments. When submitting comments, remember to:

- i. Identify the document by docket ID number and other identifying information (subject heading, **Federal Register** date and page number).
- ii. Follow directions. The Agency may ask you to respond to specific questions or organize comments by referencing a Code of Federal Regulations (CFR) part or section number.
- iii. Explain why you agree or disagree; suggest alternatives and substitute language for your requested changes.
- iv. Describe any assumptions and provide any technical information and/or data that you used.
- v. If you estimate potential costs or burdens, explain how you arrived at your estimate in sufficient detail to allow for it to be reproduced.
- vi. Provide specific examples to illustrate your concerns and suggest alternatives.
- vii. Explain your views as clearly as possible, avoiding the use of profanity or personal threats.
- viii. Make sure to submit your comments by the comment period deadline identified.

II. Background

A. EPA's Lead-based Paint Programs

In 1992, Congress found that low-level lead poisoning was widespread among American children, affecting, at that time, as many as 3,000,000 children under age 6; that the ingestion of household dust containing lead from deteriorating or abraded lead-based paint was the most common cause of lead poisoning in children; and that the health and development of children living in as many as 3,800,000 American homes was endangered by chipping or peeling lead paint, or excessive amounts of lead-contaminated dust in their homes. Congress further determined that the prior Federal response to this threat was insufficient and enacted Title X of the Housing and Community Development Act of 1992, Public Law 102-550 (also known as the Residential Lead-Based Paint Hazard Reduction Act of 1992) (“the Act” or “Title X”). Title X established a national goal of eliminating lead-based paint hazards in housing as expeditiously as possible and provided a leadership role for the Federal government in building the infrastructure necessary to achieve this goal.

Subsequently, President Clinton created the President's Task Force on Environmental Health Risks and Safety Risks to Children. Co-chaired by the Secretary of the Department of Health and Human Services (HHS) and the Administrator of EPA, the Task Force consisted of representatives from 16 Federal departments and agencies. The Task Force set a Federal goal of eliminating childhood lead poisoning by the year 2010 (Ref. 1). In October 2001, President Bush extended the work of the Task Force for an additional 18 months beyond its original charter. Reducing lead poisoning in children was the Task Force's top priority. Although more work remains to be done, significant progress has been made towards reducing lead poisoning in children. The estimated percentage of children with blood lead levels above 10 micrograms per deciliter ($\mu\text{g}/\text{dL}$) declined from 4.4% between 1991 and 1994 to 1.4% between 1999 and 2004

(Ref. 25). More information on Federal efforts to address lead poisoning, including the responsibilities of EPA and other Federal Agencies under Title X, can be found in Units III.A. and III.B. of the preamble to the 2006 Renovation, Repair, and Painting Program Proposed Rule (2006 Proposal) (Ref. 3).

The Act added a new title to TSCA entitled “Title IV-Lead Exposure Reduction.” Most of EPA's responsibilities for addressing lead-based paint hazards can be found in this title, with section 402 of TSCA being one source of the rulemaking authority to carry out these responsibilities. TSCA section 402(a) directs EPA to promulgate regulations covering lead-based paint activities to ensure that persons performing these activities are properly trained, that training programs are accredited, and that contractors performing these activities are certified. These regulations must contain standards for performing lead-based paint activities, taking into account reliability, effectiveness, and safety. On August 29, 1996, EPA promulgated final regulations under TSCA section 402(a) that govern lead-based paint inspections, lead hazard screens, risk assessments, and abatements in target housing and child-occupied facilities (also referred to as the Lead-based Paint Activities Regulations) (Ref. 4). “Target housing” is defined in TSCA section 401 as any housing constructed before 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0-bedroom dwelling. The Lead-based Paint Activities Regulations created a subset of public and commercial buildings called child-occupied facilities, and defined them in terms of the amount of time a young child might spend within them. These regulations, codified at 40 CFR part 745, subpart L, contain an accreditation program for training providers and training and certification requirements for lead-based paint inspectors, risk assessors, project designers, abatement supervisors, and abatement workers. Work practice standards for lead-based paint activities are included. Pursuant to TSCA section 404, provision was made for

interested States, Territories, and Indian Tribes to apply for and receive authorization to administer their own lead-based paint activities programs.

On June 9, 1999, the Lead-based Paint Activities Regulations were amended to include a fee schedule for training programs seeking EPA accreditation and for individuals and firms seeking EPA certification (Ref. 5). These fees were established as directed by TSCA section 402(a)(3), which requires EPA to recover the cost of administering and enforcing the lead-based paint activities requirements in unauthorized States. The most recent amendment to the Lead-based Paint Activities Regulations occurred on April 8, 2004, when notification requirements were added to help EPA monitor compliance with the training and certification provisions and the abatement work practice standards (Ref. 6).

Another of EPA's responsibilities under Title X is to require that purchasers and tenants of target housing and occupants of target housing undergoing renovation are provided information on lead-based paint and lead-based paint hazards. As directed by TSCA section 406(a), the Consumer Products Safety Commission (CPSC), the Department of Housing and Urban Development (HUD), and EPA, in consultation with the Centers for Disease Control and Prevention (CDC), jointly developed a lead hazard information pamphlet entitled Protect Your Family From Lead in Your Home (PYF) (Ref. 7). This pamphlet was designed to be distributed as part of the disclosure requirements of section 1018 of Title X and TSCA section 406(b), to provide home purchasers, renters, owners, and occupants with the information necessary to allow them to make informed choices when selecting housing to buy or rent, or deciding on home renovation projects. The pamphlet contains information on the health effects of lead, how exposure can occur, and steps that can be taken to reduce or eliminate the risk of exposure during various activities in the home.

Pursuant to the authority provided in section 1018 of Title X, on March 6, 1996, HUD

and EPA jointly promulgated regulations requiring persons who are selling or leasing target housing to provide the PYF pamphlet and information on known lead-based paint and lead-based paint hazards in the housing to purchasers and renters (Ref. 8). These joint regulations, codified at 24 CFR part 35, subpart A, and 40 CFR part 745, subpart F, describe in detail the information that must be provided before the contract or lease is signed and require that sellers, landlords, and agents document compliance with the disclosure requirements in the contract to sell or lease the property. Title X does not provide for these requirements to be administered by States or Tribes in lieu of the Federal regulations. Therefore, HUD and EPA are responsible for administering and enforcing these disclosure obligations.

TSCA section 406(b) directs EPA to promulgate regulations requiring persons who perform renovations for compensation in target housing to provide a lead hazard information pamphlet to owners and occupants of the home being renovated. These regulations, promulgated on June 1, 1998, are codified at 40 CFR part 745, subpart E (Ref. 9). The term “renovation” is not defined in the statute, but the regulation, at 40 CFR 745.83, defines a “renovation” as the modification of any existing structure, or portion of a structure, that results in the disturbance of painted surfaces. The regulations specifically exclude lead-based paint abatement projects as well as small projects that disturb 2 square feet or less of painted surface per component, emergency projects, and renovations affecting components that have been found to be free of lead-based paint, as that term is defined in the regulations, by a certified inspector or risk assessor. These regulations require the renovation firm to document compliance with the requirement to provide the owner and the occupant with the PYF pamphlet. TSCA section 404 also allows States to apply for, and receive authorization to administer, the TSCA section 406(b) requirements.

TSCA section 403 directs EPA to promulgate regulations that identify, for the purposes

of Title X and Title IV of TSCA, dangerous levels of lead in paint, dust, and soil. EPA promulgated regulations pursuant to TSCA section 403 on January 5, 2001, and codified them at 40 CFR part 745, subpart D (Ref. 10). These hazard standards define lead-based paint hazards in target housing and child-occupied facilities as paint-lead, dust-lead, and soil-lead hazards. A paint-lead hazard is defined as any damaged or deteriorated lead-based paint, any chewable lead-based painted surface with evidence of teeth marks, or any lead-based paint on a friction surface if lead dust levels underneath the friction surface exceed the dust-lead hazard standards. A dust-lead hazard is surface dust that contains a mass-per-area concentration of lead equal to or exceeding 40 micrograms per square foot ($\mu\text{g}/\text{ft}^2$) on floors or 250 $\mu\text{g}/\text{ft}^2$ on interior windowsills based on wipe samples. A soil-lead hazard is bare soil that contains total lead equal to or exceeding 400 parts per million (ppm) in a play area or average of 1,200 ppm of bare soil in the rest of the yard based on soil samples.

B. EPA's Renovation, Repair, and Painting Program

Section 402(c) of TSCA addresses renovation and remodeling. For the stated purpose of reducing the risk of exposure to lead in connection with renovation and remodeling activities, section 402(c)(1) of TSCA requires EPA to promulgate and disseminate guidelines for the conduct of such activities that may create a risk of exposure to dangerous levels of lead. In response to this statutory directive, EPA developed the guidance document entitled "Reducing Lead Hazards when Remodeling Your Home" in consultation with industry and trade groups (Ref. 11). This document has been widely disseminated to renovation and remodeling stakeholders through the National Lead Information Center, EPA Regions, and EPA's State and Tribal partners and is available at <http://www.epa.gov/lead/pubs/rrpamph.pdf>.

Section 402(c)(2) of TSCA directs EPA to study the extent to which persons engaged in various types of renovation and remodeling activities are exposed to lead during such activities

or create a lead-based paint hazard regularly or occasionally. EPA conducted this study in four phases. Phase I, the Environmental Field Sampling Study (Ref. 12), evaluated the amount of leaded dust generated by various typical renovation activities. Phase II, the Worker Characterization and Blood Lead Study (Ref. 22), involved collecting data on blood lead and renovation and remodeling activities from workers. Phase III, the Wisconsin Childhood Blood-Lead Study (Ref. 14), was a retrospective study focused on assessing the relationship between renovation and remodeling activities and children's blood-lead levels. Phase IV, the Worker Characterization and Blood-Lead Study of R&R (Renovation and Repair) Workers Who Specialize in Renovations of Old or Historic Homes (Ref. 15), was similar to Phase II, but focused on individuals who worked primarily in old historic buildings. More information on the results of these peer-reviewed studies can be found in Unit III.C.1. of the preamble to the 2006 Proposal (Ref. 3).

Section 402(c)(3) of TSCA directs EPA to revise the regulations promulgated under TSCA section 402(a), *i.e.*, the Lead-based Paint Activities Regulations, to apply to renovation or remodeling activities in target housing, public buildings constructed before 1978, and commercial buildings that create lead-based paint hazards. Based primarily on the four-phase study conducted under TSCA section 402(c)(2), EPA issued a proposed rule in January 2006 to cover renovation, repair, and painting activities that disturb painted surfaces in target housing and child-occupied facilities (Ref. 3). In the 2006 Proposal, EPA proposed to conclude that all such activities in the presence of lead-based paint create lead-based paint hazards because available information indicated that all such activities create dust-lead levels that exceed the hazard standards established under TSCA section 403.

After the 2006 Proposal was issued, EPA conducted a field study entitled "Characterization of Dust Lead Levels after Renovation, Repair, and Painting Activities" (Dust

Study) to better characterize dust lead levels resulting from various renovation, repair, and painting activities (Ref. 16). This study, completed in January 2007, was designed to compare environmental lead levels at appropriate stages after various types of renovation, repair, and painting preparation activities were performed on the interiors and exteriors of target housing units and child-occupied facilities. The renovation activities were conducted by local professional renovation firms, using personnel who received lead safe work practices training. The activities conducted represented a range of renovation, repair, and painting activities that would have been permitted under the 2006 Proposal, including work practices that are restricted or prohibited under the final rule, such as the use of high-speed machines without high-efficiency particulate air (HEPA) filtered exhaust control to remove paint. Of particular interest was the impact of using specific work practices that renovation firms would be required to use under the proposed rule, such as the use of plastic to contain the work area and a multi-step cleaning protocol, as opposed to more typical work practices. The Dust Study reinforced EPA's proposed finding that typical renovation and remodeling activities that disturb lead-based paint create lead-based paint hazards.

In April 2008, EPA issued the final Renovation, Repair and Painting Rule (RRP Rule) under the authority of section 402(c)(3) of TSCA to address lead-based paint hazards created by renovation, repair, and painting activities that disturb lead-based paint in target housing and child-occupied facilities (Ref. 17). The term "target housing" is defined in TSCA section 401 as any housing constructed before 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0-bedroom dwelling. Under the RRP Rule, a child-occupied facility is a building, or a portion of a building, constructed prior to 1978, visited regularly by the same child, under 6 years of age, on at least two different days within any week (Sunday through Saturday period), provided that each day's

visit lasts at least 3 hours and the combined weekly visits last at least 6 hours, and the combined annual visits last at least 60 hours. The RRP Rule establishes requirements for training renovators, other renovation workers, and dust sampling technicians; for certifying renovators, dust sampling technicians, and renovation firms; for accrediting providers of renovation and dust sampling technician training; for renovation work practices; and for recordkeeping. Interested States, Territories, and Indian Tribes may apply for and receive authorization to administer and enforce all of the elements of the RRP Rule.

C. Recent Renovation, Repair, and Painting Program Developments

Shortly after the RRP Rule was published, several petitions were filed challenging the rule. These petitions were consolidated in the Circuit Court of Appeals for the District of Columbia Circuit. On August 24, 2009, EPA entered into an agreement with the environmental and children's health advocacy groups in settlement of their petitions (Ref. 18). In this agreement, EPA committed to propose several changes to the RRP Rule. EPA also agreed to commence rulemaking to address renovations in public and commercial buildings, other than child-occupied facilities, to the extent those renovations create lead-based paint hazards. For these buildings, EPA agreed, at a minimum, to do the following:

- Issue a proposal to regulate renovations on the exteriors of public and commercial buildings other than child-occupied facilities by December 15, 2011 and to take final action on that proposal by July 15, 2013.
- Consult with EPA's Science Advisory Board by September 30, 2011, on a methodology for evaluating the risk posed by renovations in the interiors of public and commercial buildings other than child-occupied facilities.
- Eighteen months after receipt of the Science Advisory Board's report, either issue a proposal to regulate renovations on the interiors of public and commercial buildings other than

child-occupied facilities or conclude that such renovations do not create lead-based paint hazards.

On August 10, 2009, EPA received a petition from several environmental and public health advocacy groups requesting that the EPA amend regulations issued under Title IV of TSCA (Ref. 20). Specifically, the petitioners requested that EPA lower the Agency's dust-lead hazard standards issued pursuant to section 403 of TSCA from 40 $\mu\text{g}/\text{ft}^2$ to 10 $\mu\text{g}/\text{ft}^2$ or less for floors and from 250 $\mu\text{g}/\text{ft}^2$ to 100 $\mu\text{g}/\text{ft}^2$ or less for window sills. The petitioners also asked EPA to modify the definition of lead-based paint in 40 CFR 745.103 and 745.223 from 0.5 percent by weight (5,000 parts per million (ppm)) to 0.06 percent by weight (600 ppm) with a corresponding reduction in the 1.0 milligram per square centimeter standard. On October 22, 2009, EPA granted this petition under section 553(e) of the Administrative Procedures Act, 5 USC 553(e) (Ref. 21). In granting this petition, EPA agreed to commence the appropriate proceeding, but did not commit to a particular schedule or to a particular outcome. Because Congress gave the Department of Housing and Urban Development (HUD) statutory authority to establish a lower level of lead in paint for the purpose of the definition of the term "lead-based paint" in target housing (see 15 USC 2681(9)), EPA agreed to work with HUD in taking the appropriate action on the request pertaining to the definition of the term "lead-based paint."

D. Information on Lead and its Health Effects

Lead is a soft, bluish metallic chemical element mined from rock and found in its natural state all over the world. Lead is virtually indestructible, is persistent, and has been known since antiquity for its adaptability in making various useful items. In modern times, it has been used to manufacture many different products, including paint, batteries, pipes, solder, pottery, and gasoline. Through the 1940's, paint manufacturers frequently used lead as a primary ingredient in many oil-based interior and exterior house paints. Usage gradually decreased through the

1950's and 1960's as titanium dioxide replaced lead and as latex paints became more widely available.

1. Health effects in general. Lead bioaccumulates, and is only slowly removed, with bone lead serving as a blood lead source for years after exposure and may serve as a significant source of exposure. Bone accounts for more than 90% of the total body burden of lead in adults and 70% in children (Ref. 22). In comparison to adults, bone mineral turns over much more quickly in children as a result of growth. Changes in blood lead concentration in children are thought to parallel more closely to changes in total body burden. Therefore, blood lead concentration is often used in epidemiologic and toxicological studies as an index of exposure and body burden for children.

Lead is known for its “broad array of deleterious effects on multiple organ systems via widely diverse mechanisms of action” (Ref. 22, p. 8–24 and section 8.4.1). This array of health effects includes effects on heme biosynthesis and related functions, neurological development and function, reproduction and physical development, kidney function, cardiovascular function, and immune function. The weight of evidence varies across this array of effects and is comprehensively described in the EPA Air Quality Criteria for Lead (Criteria Document) (Ref. 22). There is also some evidence of lead carcinogenicity, primarily from animal studies, together with limited human evidence of suggestive associations (Ref. 22, sections 5.6.2, 6.7, and 8.4.10). Lead has also been classified as a probable human carcinogen by the International Agency for Research on Cancer (inorganic lead compounds), based on limited evidence in humans and sufficient evidence in animals, and as reasonably anticipated to be a human carcinogen by the U.S. National Toxicology Program (lead and lead compounds) (Ref. 22, section 6.7.2). EPA considers lead a probable carcinogen based on the available animal data (<http://www.epa.gov/iris/subst/0277.htm> (Ref. 22, p. 6–195)).

This discussion is focused on those effects most pertinent to ambient exposures, which, given the reductions in ambient lead levels over the past 30 years, are generally those associated with individual blood lead levels in children and adults in the range of 10 µg/dL and lower. These key effects include neurological, hematological, and immune effects for children, and hematological, cardiovascular, and renal effects for adults (Ref. 22, Tables 8–5 and 8–6, pp. 8–60 to 8–62). As evident from the discussions in chapters 5, 6, and 8 of the Criteria Document, “neurotoxic effects in children and cardiovascular effects in adults are among those best substantiated as occurring at blood lead concentrations as low as 5 to 10 µg/dL (or possibly lower); and these categories are currently clearly of greatest public health concern” (Ref. 22, p. 8–60). At mean blood lead levels, in children, on the order of 10 µg/dL, and somewhat lower, associations have been found with effects to the immune system, including altered macrophage activation, increased immunoglobulin E (IgE) levels and associated increased risk for autoimmunity and asthma (Ref. 22, sections 5.9, 6.8, and 8.4.6). A meta-analysis of numerous studies estimates that a doubling of blood-lead level (e.g., from 5 to 10 µg/dL) is associated with ~1.0 millimeter of mercury (mm Hg) increase in systolic blood pressure and ~0.6 mm Hg increase in diastolic pressure (Ref. 22, p. E–10). With respect to renal effects in adults, increased risk for nephrotoxicity was observed at the lowest lead exposure levels in epidemiological studies included in the Criteria Document (Ref. 22, p. 8-49). Nephrotic effects were reported among some adults with mean concurrent blood lead levels as low as 2 to 4 µg/dL. “More specifically, the newly available general population studies have shown associations between blood Pb and indicators of renal function impairment at blood-Pb levels extending below 10 µg/dL, with nephrotic effects having been reported among some adults with mean concurrent blood-Pb levels as low as ~2 to 4 µg/dL.” (Ref. 22, p. 8-49).

The toxicological and epidemiological information available “includes assessment of new

evidence substantiating risks of deleterious effects on certain health endpoints being induced by distinctly lower than previously demonstrated lead exposures indexed by blood lead levels extending well below 10 µg/dL in children and/or adults” (Ref. 22, p. 8–25). Some health effects associated with individual blood lead levels extend below 5 µg/dL, and some studies have observed these effects at the lowest blood levels considered. With regard to population mean levels, the Criteria Document points to studies reporting “lead effects on the intellectual attainment of preschool and school age children at population mean concurrent blood-lead levels [BLLs] ranging down to as low as 2 to 8 µg/dL” (Ref. 22, p. E-9).

EPA notes that many studies over the past decade, in investigating effects at lower blood lead levels, have utilized the CDC advisory level or level of concern for individual children (10 µg/dL). This level has variously been called an advisory level or level of concern. In addressing children’s blood lead levels, CDC has stated, “[s]pecific strategies that target screening to high-risk children are essential to identify children with BLLs \geq 10 µg/dL” (Ref. 1) as a benchmark for assessment, and this is reflected in the numerous references in the Criteria Document to 10 µg/dL. Individual study conclusions stated with regard to effects observed below 10 µg/dL are usually referring to individual blood lead levels. In fact, many such study groups have been restricted to individual blood lead levels below 10 µg/dL or restricted to blood lead levels below levels that are lower than 10 µg/dL (*e.g.*, the blood lead levels must be below 8 µg/dL). EPA notes that the mean blood lead level for these groups will necessarily be lower than the blood lead level below which they are restricted, because the restricted blood lead level is the upper end of the blood lead level range of the study.

Threshold levels, in terms of blood lead levels in individual children, for neurological effects cannot be discerned from the currently available studies (Ref. 22, pp. 8–60 to 8–63). The Criteria Document states, “There is no level of lead exposure that can yet be identified, with

confidence, as clearly not being associated with some risk of deleterious health effects” (Ref. 22, p. 8–63). As discussed in the Criteria Document, “a threshold for lead neurotoxic effects may exist at levels distinctly lower than the lowest exposures examined in these epidemiologic studies” (Ref. 22, p. 8– 67). Physiological, behavioral and demographic factors contribute to increased risk of lead-related health effects. Population groups potentially at risk, sometimes also referred to as sensitive populations, include those with increased susceptibility (i.e., physiological factors contributing to a greater response for the same exposure), as well as those with greater vulnerability (i.e., those with increased exposure such as through exposure to higher media concentrations or resulting from behavior leading to increased contact with contaminated media), or those affected by socioeconomic factors, such as reduced access to health care or low socioeconomic status (Ref. 22).

Children are at increased risk of lead-related health effects due to various factors that enhance their exposures (e.g., via the hand-to-mouth activity that is prevalent in very young children, (Ref. 22, section 4.4.3)) and susceptibility. While children are considered to be at a period of maximum exposure around 18–27 months, recent epidemiologic studies have found other blood lead measurements, including concurrent blood lead levels or lifetime averages, to be stronger predictors of lead-associated effects than peak blood lead concentration (Ref. 22, pp. 6-60 and 6-61). The evidence “supports the idea that lead exposure continues to be toxic to children as they reach school age, and [does] not lend support to the interpretation that all the damage is done by the time the child reaches 2 to 3 years of age” (Ref. 22, section 6.2.12). The following physiological and demographic factors can further affect risk of lead-related effects in some children.

- Children with particular genetic polymorphisms (e.g., presence of the d-aminolevulinic acid dehydratase-2 [ALAD-2] allele) may have increased sensitivity to lead toxicity, which may

be due to increased susceptibility to the same internal dose and/or to increased internal dose associated with same exposure (Ref. 22, p. 8–71, sections 6.3.5, 6.4.7.3, and 6.3.6).

- Some children may have blood lead levels higher than those otherwise associated with a given lead exposure (Ref. 22, section 8.5.3) as a result of nutritional status (e.g., iron deficiency, calcium intake), as well as genetic and other factors (Ref. 22, chapter 4 and sections 3.4, 5.3.7, and 8.5.3).

- Situations of elevated exposure, such as residing near sources of ambient lead, as well as socioeconomic factors, such as reduced access to health care or low socioeconomic status can also contribute to increased blood lead levels and increased risk of associated health effects from air-related lead (Refs. 23, 24).

- Children in poverty and black, non-Hispanic children have notably higher blood lead levels than do economically well-off children and white children, in general (Ref. 25).

2. *Neurological effects in children.* Among the wide variety of health endpoints associated with lead exposures, there is general consensus that the developing nervous system in children is among the, if not the, most sensitive. While blood lead levels in U.S. children have decreased notably since the late 1970s, newer studies have investigated and reported associations of effects on the neurodevelopment of children with these more recent blood lead levels (Ref. 22, chapter 6). Functional manifestations of lead neurotoxicity during childhood include neurophysiologic, motor, cognitive, and behavioral impacts. Numerous epidemiological studies have reported neurocognitive, neurobehavioral, neurophysiologic, and neuromotor function effects in children with blood lead levels below 10 µg/dL (Ref. 22, sections 6.2 and 8.4). As discussed in the Criteria Document, “extensive experimental laboratory animal evidence has been generated that (a) substantiates well the plausibility of the epidemiologic findings observed in human children and adults and (b) expands our understanding of likely mechanisms

underlying the neurotoxic effects” (Ref. 22, p. 8–25; section 5.3).

Cognitive effects associated with lead exposures that have been observed in epidemiological studies have included decrements in intelligence test results, such as the widely used IQ score, and in academic achievement as assessed by various standardized tests as well as by class ranking and graduation rates (Ref. 22, section 6.2.16 and pp. 8–29 to 8–30). As noted in the Criteria Document with regard to the latter, “[a]ssociations between lead exposure and academic achievement observed in the studies noted in this section were significant even after adjusting for IQ, suggesting that lead-sensitive neuropsychological processing and learning factors not reflected by global intelligence indices might contribute to reduced performance on academic tasks” (Ref. 22, pp. 8–29 to 8–30). Further, neurological effects in general include behavioral effects, such as delinquent behavior (Ref. 22, sections 6.2.6 and 8.4.2.2), sensory effects, such as those related to hearing and vision (Ref. 22, sections 6.2.7 and 8.4.2.3), and deficits in neuromotor function (Ref. 22, p. 8–36).

With regard to potential implications of lead effects on IQ, the Criteria Document recognizes the “critical” distinction between population and individual risk, identifying issues regarding declines in IQ for an individual and for the population. The Criteria Document further states that a “point estimate indicating a modest mean change on a health index at the individual level can have substantial implications at the population level” (Ref. 22, p. 8–77). As an example, the Criteria Document states, “although an increase of a few mm Hg in blood pressure might not be of concern for an individual’s well-being, the same increase in the population mean might be associated with substantial increases in the percentages of individuals with values that are sufficiently extreme that they exceed the criteria used to diagnose hypertension” (Ref. 22, p. 8–77). A downward shift in the mean IQ value is associated with both substantial decreases in percentages achieving very high scores and substantial increases in the percentage of individuals

achieving very low scores (Ref. 22, p. 8–81). For example, for a population mean IQ of 100 (and standard deviation of 15), 2.3% of the population would score above 130, but a shift of the population to a mean of 95 results in only 0.99% of the population scoring above 130 (Ref. 22, pp. 8–81 to 8–82). “For an individual functioning in the low [IQ] range due to the influence of developmental risk factors other than lead, a lead-associated [IQ] decline of several points might be sufficient to drop that individual into the range associated with increased risk of educational, vocational, and social failure” (Ref. 22, p. 8–77).

Other cognitive effects observed in studies of children have included effects on attention, executive functions, language, memory, learning, and visuospatial processing (Ref. 22, sections 5.3.5, 6.2.5, and 8.4.2.1), with attention and executive function effects associated with lead exposures indexed by blood lead levels below 10 µg/dL (Ref. 22, section 6.2.5 and pp. 8–30 to 8–31). The evidence for the role of lead in this suite of effects includes experimental animal findings (Ref. 22, section 8.4.2.1; p. 8–31), which provide strong biological plausibility of lead effects on learning ability, memory and attention (Ref. 22, section 5.3.5), as well as associated mechanistic findings.

The persistence of such lead-induced effects is described in the Criteria Document (*e.g.*, Ref. 22, sections 5.3.5, 6.2.11, and 8.5.2). The persistence or irreversibility of such effects can be the result of damage occurring without adequate repair offsets or of the persistence of lead in the body (Ref. 22, section 8.5.2). It is additionally important to note that there may be long-term consequences of such deficits over a lifetime. Poor academic skills and achievement can have “enduring and important effects on objective parameters of success in real life,” as well as increased risk of antisocial and delinquent behavior (Ref. 22, section 6.2.16).

Multiple epidemiologic studies of lead and child development have demonstrated inverse associations between blood lead concentrations and children’s IQ and other cognitive-related

outcomes at successively lower lead exposure levels over the past 30 years (Ref. 22, section 6.2.13). For example, the overall weight of the available evidence, described in the Criteria Document, provides clear substantiation of neurocognitive decrements being associated in children with mean blood lead levels in the range of 5 to 10 $\mu\text{g}/\text{dL}$, and some analyses indicate lead effects on intellectual attainment of children for which population mean blood lead levels in the analysis ranged from 2 to 8 $\mu\text{g}/\text{dL}$ (Ref. 22, sections 6.2, 8.4.2, and 8.4.2.6). Thus, while blood lead levels in U.S. children have decreased notably since the late 1970s, newer studies have investigated and reported associations of effects on the neurodevelopment of children with blood lead levels similar to the more recent, lower blood lead levels (Ref. 22, chapter 6).

Children in minority populations and children whose families are poor have an increased risk of exposure to harmful lead levels (Ref. 25, at e376). Analysis of the National Health and Nutrition Examination Surveys (NHANES) data from 1988 through 2004 shows that the prevalence of blood lead levels equal to or exceeding 10 $\mu\text{g}/\text{dL}$ in children aged 1 to 5 years has decreased from 8.6% in 1988-1991 to 1.4% in 1999-2004, which is an 84% decline (Ref. 25, at e377). However, the NHANES data from 1999-2004 indicates that non-Hispanic black children aged 1 to 5 years had higher percentages of blood lead levels equal to or exceeding 10 $\mu\text{g}/\text{dL}$ (3.4%) than white children in the same age group (1.2%) (Ref. 25). In addition, among children aged 1 to 5 years over the same period, the geometric mean blood lead level was significantly higher for non-Hispanic blacks (2.8 $\mu\text{g}/\text{dL}$), compared with Mexican Americans (1.9 $\mu\text{g}/\text{dL}$) and non-Hispanic whites (1.7 $\mu\text{g}/\text{dL}$) (Ref. 25, at e377). For children aged 1 to 5 years from families with low income, the geometric mean blood lead level was 2.4 $\mu\text{g}/\text{dL}$ (Ref. 25, at e377). Further, the incidences of blood-lead levels greater than 10 $\mu\text{g}/\text{dL}$ and greater than or equal to 5 $\mu\text{g}/\text{dL}$ were higher for non-hispanic blacks (14% and 3.4% respectively) than for Mexican Americans (4.7% and 1.2%, respectively) and non-Hispanic whites (4.4% and 1.2%, respectively) (Ref. 25).

The “analysis indicates that residence in older housing, poverty, age, and being non-Hispanic black are still major risk factors for higher lead levels” (Ref. 25, at e376).

3. *Adult health effects.* As previously noted, the adult health effects of lead exposure include negative impacts on renal and cardiovascular function. While cardiovascular effects in adults are well substantiated as occurring at blood lead levels as low as 5 to 10 µg/dL (or possibly lower), newly-demonstrated renal system effects among general population groups are also emerging as low-level lead exposure effects of concern (Ref. 22, p. 8-60).

Most studies in general adult and patient populations published during the past two decades have observed associations between “Pb dose and worse renal function.” (Ref. 22, p. 6-112) The cumulative effect of higher blood lead levels from past exposure may be a factor in the nephrotoxicity observed at current blood lead levels. However, one study found associations between blood lead and concurrent serum creatinine in participants whose peak blood lead levels were equal to or less than 10 µg/dL (Ref. 22, p. 6-112). “The threshold for lead-related nephrotoxicity cannot be determined based on current data, but associations with clinically-relevant renal outcomes have been observed in populations with mean blood lead levels as low as 2.2 µg/dL” (Ref. 22, p. 6-112). In addition, the available data are not sufficient to determine whether the observed nephrotoxicity is related more to such current blood lead levels, higher levels from past exposures, or both (Ref. 22, p. 8-49). Some adult populations are at an even greater risk for adverse health effects as a result of lead exposure. “The influence of an individual’s health status on susceptibility to lead toxicity has been demonstrated most clearly for renal outcomes.” “Individuals with diabetes, hypertension, and chronic renal insufficiency are at increased risk of Pb-associated declines in renal function, and indications of altered kidney function have been reported at blood Pb levels ranging somewhat below 5 µg/dL (Lin et al., 2001, 2003; Muntner et al., 2003; Tsaih et al., 2004).” (Ref. 22 p. 8-72).

Positive associations between lead exposure and increased blood pressure have been observed in numerous studies. Epidemiologic studies that have examined the effects of blood lead levels on blood pressure have generally found positive associations, even after controlling for confounding factors such as tobacco smoking, exercise, body weight, alcohol consumption, and socioeconomic status (Ref. 22, p. 8-45). Recent meta-analyses of these studies have reported robust, statistically-significant, though small effect-size, associations between blood-Pb concentrations and blood pressure. For example, the meta-analysis of Nawrot *et al* (2002) indicated that a doubling of blood lead corresponded to a 1 mm Hg increase in systolic blood pressure. Although this magnitude of increase is not clinically meaningful for an individual, a population shift of 1 mm Hg is important (Ref 22, p. 8-45). The majority of the more recent studies employing bone lead level have also found a strong association between long-term lead exposure and arterial pressure. “Since the residence time of Pb in blood is relatively short but very long in bone, the latter observations have provided compelling evidence for the positive relationship between Pb exposure and a subsequent rise in arterial pressure in human adults.” (Ref 22, p. 8-45)

Studies also demonstrate a relationship between increased lead exposure and other adverse cardiovascular outcomes, including increased incidence of hypertension and cardiovascular morbidity and mortality (Ref. 22, p. 6-154). “Lead interference in calcium-dependent processes, including ionic transport systems and signaling pathways important in vascular reactivity may only represent the first step in the cascade of Pb-induced physiological events that culminates in cardiovascular disease. Lead alteration of endothelial cell response to vascular damage, inducement of smooth muscle cell hyperplasia, alteration of hormonal and transmitter systems regulating vascular reactivity, and its clear role as promoter of oxidative stress suggest mechanisms that could explain the Pb-associated increase in blood pressure,

hypertension, and cardiovascular disease noted in this section” (Ref . 22, p. 6-153).

Current research does not definitively indicate whether health impacts observed later in life are the result of current lead exposure or exposure which occurred during early childhood or at some other time in the past. The following excerpts from the Criteria Document illustrate the uncertainties surrounding this issue:

- “It could be that damage occurred during a circumscribed period when the critical substrate was undergoing rapid development, but that the high correlation between serial blood Pb levels impeded identification of the special significance of exposure at that time.” (Ref. 22, p. 8-73)

- “While some observations in children as old as adolescence indicate that exposure biomarkers measured concurrently are the strongest predictors of late outcomes, the interpretation of these observations with regard to critical windows of vulnerability remains uncertain” (Ref . 22, p. 8-74).

4. Renovations in residential settings and elevated blood lead levels. EPA’s Wisconsin Childhood Blood-Lead Study, described more fully in Unit III.C.1.c. of the preamble to the 2006 Proposal, provides ample evidence of a link between renovation activities and elevated blood lead levels in resident children (Ref. 14). This peer-reviewed study concluded that general residential renovation and remodeling is associated with an increased risk of elevated blood lead levels in children and that specific renovation and remodeling activities are also associated with an increase in the risk of elevated blood lead levels in children. In particular, removing paint (using open flame torches, using heat guns, using chemical paint removers, and using wet scraping/sanding) and preparing surfaces by sanding or scraping significantly increased the risk of elevated blood lead levels.

Three studies from New York support the findings of the Wisconsin Childhood Blood-

Lead Study. In 1995, the New York State Department of Health assessed lead exposure among children resulting from home renovation and remodeling in 1993–1994. A review of the health department records of children with blood lead levels equal to or greater than 20 µg/dL identified 320, or 6.9%, with elevated blood lead levels that were attributable to renovation and remodeling (Ref. 26). An update to that study with data from environmental investigations conducted during 2006-2007 in New York State (excluding New York City) identified renovation, repair, and painting activities as the probable source of lead exposure in 14% of 972 children with blood lead levels equal to or exceeding 20 µg/dL (Ref. 27). The authors concluded that children living in housing undergoing renovation, repair, and painting that was built before 1978, and particularly before 1950, when concentrations of lead in paint were higher, are at high risk for elevated blood lead levels. The final study was a case-control study that assessed the association between elevated blood lead levels in children younger than 5 years and renovation or repair activities in homes in New York City (Ref. 28). EPA notes that the authors show that when dust and debris was reported (by respondents via telephone interviews) to be “everywhere” following a renovation, the children’s blood lead levels were significantly higher than those of the children at homes that did not report remodeling work. On the other hand, when the respondent reported either “no visible dust and debris” or that “dust and debris was limited to the work area,” there was no statistically significant effect on blood lead levels relative to homes that did not report remodeling work. Although the study found only a weak and nonsignificant link between a report of any renovation activity and the likelihood that a resident child had an elevated blood-lead level, the link to the likelihood of an elevated blood-lead level was statistically significant for surface preparation by sanding and for renovation work that spreads dust and debris beyond the work area. The researchers noted the consistency of their results with EPA’s Wisconsin Childhood Blood-Lead Study (Ref. 28, at 509).

III. Renovations in Public and Commercial Buildings

In many respects, EPA's approach to determining whether and how to regulate exterior renovations on public and commercial buildings and whether and how to regulate interior renovations in public and commercial buildings will be similar to the approach taken towards renovation activities in and on target housing and child-occupied facilities. Although the statutory directive under TSCA section 402(c)(3) is the same for all of these buildings, each type of building may present a different level of exposure to occupants. In this ANPRM, EPA is taking comment on the many considerations it must take into account when revising the regulations issued under TSCA section 402(a) to apply to those renovations that create lead-based paint hazards in public and commercial buildings.

An important consideration in determining how to regulate renovations on the exteriors of public and commercial buildings is that these renovations can create lead-based paint hazards on and in target housing and child-occupied facilities. Lead dust can travel in the environment and has been shown to be readily tracked into homes and other buildings. In fact, as discussed in Unit III.B.1. a substantial proportion of interior dust is due to track-in activities.

A. Definitions of "Public Building" and "Commercial Building"

While the term "target housing" is defined in TSCA section 401, TSCA Title IV does not provide definitions for the terms "public building" and "commercial building." The issue of the buildings that could and should be covered by these terms was raised, but not conclusively resolved, in the rulemaking to establish the existing Lead-based Paint Activities Regulations.

As discussed previously, EPA promulgated the final Lead-based Paint Activities Regulations under TSCA section 402(a) in 1996 (Ref. 4). These regulations cover lead-based paint inspections, lead hazard screens, risk assessments, and abatements. The regulations include training and certification requirements for individuals and firms, accreditation requirements for

lead-based paint training providers, and work practice standards designed in accordance with the statutory directive to ensure that lead-based paint activities are conducted safely, reliably and effectively. As initially proposed in 1994, one set of requirements for the training and certification of contractors and the accreditation of training programs, as well as specific work practice standards would have applied to lead-based paint activities conducted in target housing and public buildings (Ref. 29). The 1994 proposal would have defined public buildings to include all buildings generally open to the public or occupied or visited by children, such as stores, museums, airports, offices, restaurants, hospitals, and government buildings, as well as schools and day-care centers. In the final rule, EPA decided to focus on buildings frequented by children and, thus, established a subset of the buildings EPA had intended to define as public. This subset is called “child-occupied facilities” and it is delineated terms of the frequency and duration of visits by particular children (Ref. 4).

EPA continues to believe that it is important to emphasize the deleterious effects of lead exposure on young children, a sub-population that has long been identified as being particularly susceptible to the adverse effects of lead. However, it is also important to address exposures for other sensitive sub-populations, such as women who are pregnant or who may become pregnant in the future. In addition, as discussed in Unit II.D. of this preamble, a growing body of scientific literature documents lead’s adverse effects on older children and adults at lower levels of exposure than previously documented. As a result, EPA does not believe that the options considered in this rulemaking should be limited to those buildings or situations where young children are likely to be exposed. EPA intends to evaluate all of the available information on hazards, exposures, and risk to determine which renovations TSCA requires EPA to regulate and how TSCA requires EPA to regulate them.

While TSCA Title IV does not define “public building” or “commercial building,” a

definition of “public and commercial building” was provided in TSCA Title II. TSCA Title II addresses the management of asbestos-containing building materials in school buildings and the training and accreditation (or certification) of persons who perform asbestos inspections or design or conduct asbestos abatement in public or commercial buildings. Because the primary focus of TSCA Title II is primary and secondary schools, and ensuring that asbestos-containing building materials in such schools are properly managed, primary and secondary schools are specifically excluded from the definition of the term “public and commercial building” in TSCA section 202. However, the rest of the definition signals Congress’s intention for EPA to interpret the term broadly, because a public and commercial building is defined as “any building” other than a school building or a “residential apartment building” of fewer than 10 units. EPA’s regulatory definition of “public and commercial building” at 40 CFR part 763, Subpart E, Appendix C, Asbestos Model Accreditation Plan, provides examples of the types of buildings covered, including industrial and office buildings, government-owned buildings, colleges, museums, airports, hospitals, churches, preschools, stores, warehouses and factories. Notwithstanding the differences in focus between TSCA Title II and Title IV, EPA believes that a similar broad approach to interpreting “public building” and “commercial building” is warranted in this rulemaking. Of course, EPA must still determine which renovations in which buildings create lead-based paint hazards.

One other factor must be considered in interpreting the terms “public building” and “commercial building.” In 1978, the CPSC banned the use of paint containing more than 0.06% lead by weight on toys, furniture, and interior and exterior surfaces in housing and other buildings and structures used by consumers (Ref. 30). However, this ban specifically exempted “[i]ndustrial (and commercial) building and equipment maintenance coatings, including traffic and safety marking coatings.” It is likely that Congress was thinking of this ban, and the

exemption, when it limited rulemaking authority in TSCA section 402(c)(3) to public buildings built before 1978, but applied no such limitation to commercial buildings.

With this in mind, EPA requests comment, information and data from the public on the types of buildings that should be considered “public buildings” or “commercial buildings.”

Specifically, EPA asks commenters to consider the following questions:

1. What types of buildings should be considered to be public buildings? What types should be considered to be commercial buildings? Should outbuildings and structures on the property be included in either category as they are in respect to target housing? Why?

2. What types of building classifications should be considered? Should the criteria for classifying buildings include the presence of young children, pregnant women, or population density? Is it possible to categorize buildings based on the contractors and the workforce renovating them (*i.e.*, do different contractors perform renovations in different types of public and commercial buildings, or do such work differently)? Is it possible to classify public and commercial buildings using building codes, zoning, or other characteristics? Should various classifications of buildings be treated differently with regard to required work practices, cleaning methods, and reoccupancy criteria?

3. Some public or commercial buildings are mixed-use buildings, with residences, schools and/or child care facilities in the buildings. If portions of the buildings are residences that are target housing (*i.e.*, the building was constructed before 1978 and the residences are not otherwise exempt), how should such buildings, or particular portions of them, be addressed in this rulemaking?

4. Every four years, the Department of Energy (DOE) collects information on the stock of commercial buildings in the United States, their energy-related building characteristics, and their energy consumption and expenditures. For the purposes of this survey, the Commercial

Buildings Energy Consumption Survey (CBECS), commercial buildings include all buildings in which at least half of the floor space is used for a purpose that is not residential, industrial, or agricultural. This survey includes building types that might not traditionally be considered commercial, such as schools, correctional institutions, and buildings used for religious worship. More information on the CBECS can be found at <http://www.eia.doe.gov/emeu/cbecs/>. DOE also collects data every four years on buildings used for manufacturing activities. The Manufacturing Energy Consumption Survey (MECS) collects data on buildings used by the manufacturing sector, defined by NAICS codes 31 to 33. The MECS data does not include information on building vintage. More information on MECS can be found at <http://www.eia.doe.gov/emeu/mecs/contents.html>. What other information is available on the ages, types, sizes, and other characteristics of public and commercial buildings in the United States? In particular, what data are available on the age, types, sizes, and other characteristics of public or commercial buildings not included in the CBECS or MECS?

Based on the U.S. Census Bureau's 2003 American Housing Survey, there are 77,888,000 target housing units. "Target housing" is defined under section 401 of TSCA as any housing constructed before 1978, except housing for the elderly or persons with disabilities (unless any child under age 6 resides or is expected to reside in such housing) or any 0-bedroom dwelling. EPA estimates that there are 97,000 child-occupied facilities (COFs), as defined at 40 CFR 745.83. By comparison, according to DOE's CBECS data, there are 2,826,000 commercial buildings constructed prior to 1980. This includes building types such as schools and buildings used for religious worship, so there is some double-counting with the target housing and COFs figures described in this paragraph. According to DOE's MECS there are 368,000 manufacturing buildings, but this includes post-1978 buildings because MECS does not indicate the age of the buildings. EPA is not aware of data on the number of agricultural buildings.

The estimates from the CBECS and MECS data provide an indication of the relative magnitude of different building types, but at this time should not be considered reflective of the number of buildings that would be affected by a future EPA regulation. The number of buildings affected by an EPA regulation will depend on how EPA ultimately decides to define public and commercial buildings and the scope of the regulation within that definition. Aside from the number of structures, the characteristics of public and commercial buildings may differ from target housing and COFs, including the prevalence of lead-based paint; the frequency, type, and size of renovation work performed; and the baseline renovation work practices used. EPA is seeking information in this notice on all of these characteristics.

B. Lead-based Paint Hazards and Public and Commercial Building Renovations

1. Leaded dust and debris created by exterior renovations. The Dust Study, as described in Unit II.B., demonstrated that renovations on the exteriors of target housing and child-occupied facilities create an enormous amount of leaded dust that can contaminate soil in the vicinity. Including both bulk debris and dust created by these renovations, geometric mean lead levels in exterior samples from collection trays placed on top of the containment plastic covering the adjacent ground ranged from a low of 60,662 $\mu\text{g}/\text{ft}^2$ for door replacement to a high of 7,216,358 $\mu\text{g}/\text{ft}^2$ for removing paint with a high temperature heat gun (Ref. 16). EPA requests public comment on the extent to which this study should inform EPA's determination on lead-based paint hazards created by exterior renovations on public and commercial buildings, especially considering that some of the exterior renovations in the Dust Study were performed on a school building, which represents one type of public buildings.

Studies have demonstrated that exterior dust and soil that contains lead will contaminate interior building areas when dust and soil is tracked inside on the shoes and clothing of building occupants and visitors and through air exchange. In one study, a regression analysis was used to

investigate those factors that were most statistically significantly associated with lead loadings in dust samples taken from residential carpets (Ref. 29). The study found that soil-lead concentration, the practice of removing shoes before entering, and the use of walk-off mats at entrances were all statistically significant predictors of dust-lead loading in carpets. Dust and soil samples collected during the study were screened to include only particles smaller than 150 microns, because these particles were considered more likely to appear on a child's hand (Ref. 31).

EPA possesses data on the transport of leaded dust and debris resulting from exterior renovations. In EPA's Dust Study, measured lead dust and debris were found up to 18 feet from the exterior work area, and the average distance traveled by lead dust and debris was 10.81 feet (Ref. 16). However, it is important to keep in mind that exterior vertical containment was used where necessary during the Dust Study to ensure that leaded dust and debris did not contaminate adjacent properties, and this limited the distance leaded dust and debris could travel. Nevertheless, the Dust Study demonstrates that individuals residing in and visiting nearby properties could be exposed to leaded dust and debris created by exterior renovations when vertical containment or other containment measures are not used. Renovation firms or building owners and managers may not specifically consider the potential for these exposures on nearby properties when designing and performing renovations on the exteriors of public and commercial buildings.

Numerous studies have found elevated soil lead levels in residential areas surrounding residential and public and commercial buildings that have been demolished. In one study of a major building demolition, lead dust was found to travel up to 20 kilometers from the demolition site (Ref. 32). While EPA recognizes that this situation involves whole building demolition, the Agency expects that partial demolition and similar renovation activities would be expected to

release similar types of lead-based paint dust particles with the ability to travel long distances and contaminate soil and other horizontal surfaces such as streets, playgrounds and other surfaces with which children could come into contact. Another study (Ref. 33) found increased levels of lead in alleys up to 100 meters from row house demolition. These lead levels were observed despite the fact that water wetting was used during demolition and debris removal to reduce the amount of dust released. In another study, abrasive blasting of a bridge was found to deposit 50% of the removed lead-based paint beyond 300 yards of the operation with a four mile per hour wind. This study indicates that current abrasive methods have the demonstrated potential to contaminate the surrounding environment and have the potential to create lead-based paint hazards (Ref. 34).

There are data on the maintenance of bridges and structures (such as water towers) that could be used to determine the extent of transport of lead dust resulting from exterior renovations. Paints on many of these steel structures contain up to 60-70% lead by weight (Ref. 35). Of particular interest are studies of the impacts of renovating these structures in urban areas or near schools. Evidence from steel structures suggests that exterior public and commercial building renovations can result in significant health impacts for children and others in close proximity to the renovation, repair and painting work.

Given these considerations, EPA requests public comment, information, and data, especially peer-reviewed studies, on the following topics:

- a. What information is available on dust-lead and soil-lead levels generated by exterior renovations on public and commercial buildings? To what extent is the data from the Dust Study relevant? EPA is aware of information on the content of lead in urban and rural soils, and other settings, such as near highways. Is there more information on the content of lead in soil or what concentrations of lead are currently found in soil that EPA could use to evaluate the risk of

human and environmental lead exposure from the renovation of public and commercial buildings?

b. To what extent will dust drift from exterior renovations, especially on public and commercial buildings, onto neighboring properties? Would this, for instance, resemble modeling plumes from smelters?

c. How far will lead-containing dust and debris travel from the exterior of properties undergoing renovation? What factors will influence the travel of lead dust? Such factors might include particular renovation practices, the time of year, wind conditions, ground cover (e.g., asphalt, concrete, dirt, vegetation), average precipitation, or the height and concentration of surrounding structures.

d. To what extent can the data on building demolition or steel structure maintenance be used to predict the extent to which dust and debris travel from exterior public and commercial building renovations?

e. To what extent will exterior dust from the exterior renovation of public and commercial buildings be tracked into the interior of buildings being renovated or other buildings? To what extent will lead-based paint dust enter these buildings through open windows, doorways and air exchange?

f. What actions can a contractor take to prevent transportation of lead dust from exterior renovations or to prevent the lead dust from entering the environment?

2. Leaded dust and debris generated by interior renovations in public and commercial buildings. In determining which renovations in target housing and child-occupied facilities create lead-based paint hazards for the 2008 RRP Rule, EPA relied heavily on two Agency studies that evaluated dust-lead levels generated by renovations. One of these studies, the Environmental Field Sampling Study (Ref. 12), Phase I of the study conducted under TSCA

section 402(c)(2), evaluated the amount of leaded dust generated by the following activities:

- Paint removal by abrasive sanding.
- Removal of large structures, including demolition of interior plaster walls.
- Window replacement.
- Carpet removal.
- HVAC repair or replacement, including duct work.
- Repairs resulting in isolated small surface disruptions, including drilling and sawing into wood and plaster.

The dust lead levels generated by abrasive sanding were evaluated through a literature survey.

The results of the literature survey included both residential buildings and public or commercial buildings. The rest of the evaluated activities were performed as part of the study in residential buildings.

EPA also relied heavily on the Dust Study (Ref. 16) to promulgate the final RRP Rule.

The Dust Study evaluated the dust-lead and soil-lead levels generated by the following activities in and on an unoccupied school building and/or unoccupied target housing:

- Making cut-outs in the walls.
- Replacing a window from the inside.
- Removing paint with high and low temperature heat guns.
- Removing paint by dry scraping.
- Removing paint with a power planer.
- Removing kitchen cabinets.

EPA requests public comment, information, and data, particularly peer-reviewed studies, on the dust-lead levels that are generated by renovations on the interiors of non-residential buildings. EPA also requests comment on the extent to which these two EPA studies should

inform EPA's determination on lead-based paint hazards created by renovations in the interiors of public and commercial buildings, especially considering that some of the renovations in the Dust Study were performed in a school building.

3. Other evidence of lead-based paint hazards. While EPA primarily relied on the two studies described in section III.B.2. to determine that renovations in and on target housing and child-occupied facilities create lead-based paint hazards, EPA also looked at the available evidence for a relationship between renovations and blood lead levels. In particular, EPA considered the results of the other three phases of the study conducted under TSCA section 402(c)(2). Phase II, the Worker Characterization and Blood Lead Study (Ref. 13), involved collecting data on blood lead and renovation and remodeling activities from workers. Notably, half of the renovations studied occurred in commercial buildings and half occurred in residential housing. Thus, this study provides evidence of a relationship between commercial building renovation activities and worker blood lead levels. Phase IV, the Worker Characterization and Blood-Lead Study of R&R (Renovation and Remodeling) Workers Who Specialize in Renovations of Old or Historic Homes (Ref. 15), was similar to Phase II, but focused on individuals who worked primarily in old historic buildings.

EPA also relied on the evidence presented by Phase III of the TSCA section 402(c)(2) study, the Wisconsin Childhood Blood-Lead Study (Ref. 14), which documented a relationship between renovation and remodeling activities and the blood-lead levels of resident children. This evidence of a relationship is corroborated by New York studies also discussed in II.D.4.

EPA also considered several studies conducted by the National Institute of Occupational Safety and Health (NIOSH) that assessed worker exposure and transport of lead dust from renovation activities (Refs. 36 and 37). For example, one study done at the University of California, Berkeley, assessed lead-based paint exposures of workers during exterior renovation

work on campus buildings (Ref. 37). Estimated average exposures during dry manual sanding, dry manual scraping, power finish sanding, and power finish sanding with bag would exceed the permissible exposure limit (PEL) within an 8-hr period. Estimated average exposures for power sanding with HEPA exhaust, flame burning, wet manual sanding, and wet scraping would be below the PEL. Although it resulted in relatively low worker exposures, flame burning was among the tasks associated with the higher lead levels in air and settled dust levels in nearby areas (Ref. 37).

Lead-based paint is defined by TSCA as paint with lead levels equal to or exceeding 1.0 milligrams per square centimeter (mg/cm²) or 0.5% by weight (TSCA section 401(9) (15 U.S.C. 2681(9))). However, OSHA states in 29 CFR 1926.62 that if lead is present in the workplace in any quantity the employer is required to make an initial determination of whether any employee's exposure to lead exceeds the action level (30 ug/m³) averaged over an 8 hour day. This position is supported by the following interpretations:

"OSHA's role is to protect workers from health and safety hazards, including exposure to harmful levels of lead, whatever the source. Accordingly, for all tasks governed by OSHA's Lead in Construction standard (29 CFR 1926.62) involving paints having any level of lead, employers must comply with the assessment measures and any applicable protections of that standard."

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=27319.

"The lead-in-construction standard was intended to apply to any detectable concentration of lead in paint, as even small concentrations of lead can result in unacceptable employee exposures depending upon on the method of removal and other workplace conditions.

Since these conditions can vary greatly, the lead-in-construction standard was written to

require exposure monitoring or the use of historical or objective data to ensure that employee exposures do not exceed the action level. Historical data may be applied to all construction tasks involving lead. Objective data was intended to apply to all tasks other than those listed under paragraph 1926.62(d)(2) of the standard."

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=22701.

EPA requests public comment, as well as additional information and data, particularly peer-reviewed studies, on the relationship between renovations in and on public and commercial buildings and blood lead levels in workers, building occupants, and visitors. EPA also requests public comment on the extent to which these blood-lead studies can inform EPA's determination on lead-based paint hazards created by public and commercial building renovations.

C. Prevalence of Leaded Paint and Lead Levels in Leaded Paint in and on Public and Commercial Buildings

An important consideration in determining which renovations create lead-based paint hazards and how best to address those hazards is likely to be the prevalence of leaded paint disturbed and the level of lead in that paint. In issuing the 2008 RRP Rule covering renovations in target housing and child-occupied facilities, EPA relied heavily on two surveys sponsored by HUD. The first, the National Survey of Lead and Allergens in Housing, was a representative sampling of housing units where children could reside for lead-based paint, lead-based paint hazards, and allergens (Ref. 38). This survey provided valuable information on the prevalence of and levels of lead in lead-based paint in target housing. A similar survey, the First National Environmental Health Survey of Childcare Centers, was conducted in licensed child-care centers and included sampling for lead in paint, lead-based paint hazards, allergens, and pesticides (Ref. 39).

EPA requests public input on these issues related to the presence of leaded paint in and on public and commercial buildings:

1. What information and data are available on the prevalence of leaded paint? What information and data are available on the levels of lead (concentration or percentage of total) in such paint? Does the prevalence or lead level differ by building age, component or type (*e.g.*, interior or exterior; doors and windows, trim or walls; wood substrate or metal substrate)?

2. What information and data are available on the trends in prevalence and lead levels over time?

3. What available data would help EPA estimate the likelihood that a public or commercial building contains lead-based paint? Are there factors that should be considered other than the year in which it was constructed?

4. What voluntary consensus standards or other guidelines or specifications affect the prevalence of leaded paint and the levels of lead in such paint?

5. What federal, state, and local laws, regulations, or ordinances affect the prevalence of leaded paint and the lead levels in such paint?

6. What information is available on the current manufacture and import of lead-based paint for commercial building use?

D. Typical Renovation Activities and Building Management Practices for Public and Commercial Buildings

In making the determination which renovation activities in and on public and commercial buildings create lead-based paint hazards, EPA must evaluate information on the typical renovations performed and the typical practices used in performing these renovations. EPA is also interested on types of lead-paint containing building components that may be reused during a renovation of a public or commercial building. EPA encourages the public to submit

comments, information, and data relating to these considerations.

1. What types of renovations are typically performed in and on public and commercial buildings, and how often is each type performed? What is the span or range, both typical and extreme, in size and duration of each type of renovation job?

2. Do renovation firms or the building owners or managers typically assess whether the paint the renovation firms will disturb during a renovation job in or on a public or commercial building contains lead? To what extent are there patterns in their making such assessments? Before hiring a renovation firm to perform a renovation, or performing a renovation using building maintenance staff, do public and commercial building owners or managers assess whether leaded paint is present? What methods and procedures are currently employed by contractors or building owners/managers to assess whether paint contains lead?

3. Do building owners or managers typically provide notice of the lead content of building paint to renovation firms, building occupants or the public? What triggers these notifications? Do renovation firms or building owners/managers typically provide advance notice of renovation activities to building occupants or the public? To what extent are there patterns in their making such notifications?

4. Do renovation firms typically separate renovation work areas from other areas of the building or grounds to limit access and minimize the spread of dust, chips, and debris? How often are the following practices used to accomplish this separation, and to what extent are there patterns in their using such practices? To what extent have renovation firms or the public building owners or managers assessed the efficacy of these separation practices on the projects where they are used, and what are the results of such assessments?

- Restricting access of other building occupants or the public into or around the building during renovation through warning signs and/or barriers.

- Closing the windows of the building during exterior renovations and the windows of other buildings adjacent to the work area.
- Placing plastic on the ground to capture the falling chips and paint dust during exterior renovations.
- Avoiding exterior renovation work during windy conditions.
- Shutting off the ventilation system and sealing the supply and return grills during interior renovation.
- Sealing off the work area (establishing a work area containment system) for interior renovations.
- Maintaining negative pressure in the work area with respect to the adjacent areas during interior renovations.
- Follow OSHA housekeeping provisions specified in the OSHA lead standards at 29 CFR 1926.62 or 29 CFR 1910.1025, or practice good housekeeping in the work area.

5. What clean-up practices do renovation firms typically follow during and after renovation activities in and on public and commercial buildings? How often are brooms used? How often is wet cleaning or mopping performed? How often is vacuuming performed, and, in particular, how often are shop vacuums used, and how often are high-efficiency particulate air (HEPA) vacuums used?

6. How often is dust wipe testing for leaded dust performed after renovations in public and commercial buildings? How often is soil tested for lead after renovations on public and commercial buildings, especially after exterior renovations? Do renovation firms or building owners/managers use any other methods to assess lead levels in dust or soil remaining after renovations? Are the results of these tests or assessments used to determine whether the work area may be re-occupied by other building occupants or visited by the public?

7. What routine cleaning procedures do the owners and managers of public and commercial buildings follow, apart from renovation projects? How often are these procedures followed? Are there differences in cleaning procedures and or frequencies between older (e.g., pre-1978) buildings and newer (e.g., post-1977) buildings?

8. To what extent are building components that contain lead-based paint reused? To what extent are reused components tested for lead-based paint before reuse?

9. To what extent are measures taken to avoid the release of lead dust during the installation and use of reused lead-contaminated building materials (such as paint removal techniques)?

10. What information is available on the scale and types of new renovation and repair projects on public and commercial buildings?

E. Renovation Waste

Waste from building renovations can create lead-contaminated waste. Lead-contaminated waste from the renovation of residences, regardless of who generates the waste, is excluded from the Subtitle C Hazardous Waste Regulations under the Resource Conservation and Recovery Act (RCRA) (Ref. 40). This includes waste from the renovation of single family homes, apartment buildings, public housing, and military barracks. This waste may be disposed of in a municipal solid waste landfill or in a construction and demolition (C&D) landfill. However this exclusion does not apply to lead-contaminated waste generated from public and commercial building renovations. That waste must be managed in accordance with the RCRA Hazardous Waste Regulations. Given this regulatory status, EPA requests public comment, information, and data responsive to the following questions:

1. What information is available on current practices for the cleanup, handling, and disposal of lead-contaminated wastes after public and commercial building renovations?

2. Can you provide information and data on the amount of waste from renovation activities in public and commercial buildings that a contractor might currently manage as RCRA Hazardous Waste? What materials are typically included in this waste?

3. To what extent (i.e. quantities) is lead-contaminated waste from public and commercial building renovations recycled? What information is available on the methods and practices currently in use for recycling such wastes?

4. To what extent (i.e. quantities) are lead-containing building components and other waste removed from public and commercial buildings during renovations reused? What information is available on the methods and practices currently employed for reusing such components?

5. Other than RCRA, what federal, state or local statutes, regulations, ordinances, or protocols govern the cleanup, handling, disposal, and reuse of lead-contaminated waste from public and commercial building renovations?

6. What measures are typically taken to avoid the release of leaded dust during the removal and disposal of lead-contaminated wastes from public and commercial building renovations?

F. The Renovation Workforce in Public and Commercial Buildings

In determining which public and commercial building renovations create lead-based paint hazards and in designing safe, reliable, and effective work practice standards to address those lead-based paint hazards, EPA must take into account the typical renovation workforce for public and commercial buildings. Accordingly, EPA seeks public comment and data to help inform the Agency's understanding of this workforce.

1. What kinds of contractors perform renovations in and on public and commercial buildings? How often is building maintenance staff used to perform renovations in and on public

and commercial buildings? What differences are there in the size or type of projects typically conducted by contractors vs. building maintenance staff?

2. When hiring a contractor to perform a renovation, how often do building owners/managers check to see whether the personnel who will be performing the renovation have been trained in lead-safe work practices, *i.e.*, work practices designed to minimize the creation of leaded dust and debris, control the spread of such dust and debris, and properly clean up this dust and debris after the renovation has been completed? How often do building owners and managers train (either personally or through consultants) building maintenance staff in lead-safe work practices? What kind of lead-safe work practices training do contractor employees or building maintenance staff typically receive?

3. How often do building owners/managers or renovation contractors hire consultants trained to evaluate lead-based paint and lead-based paint hazards, architects, engineers, or others, to assess the renovation work area before work begins? How often do building owners/managers or renovation contractors hire consultants trained in lead-safe work practices, lead-based paint inspection, lead risk assessment, and/or lead project design to assist them in designing and conducting renovation projects? What are the patterns for the use of such consultants in these various situations?

4. Who typically provides health, safety, and environmental oversight during renovation projects in public and commercial buildings—the building owner, the building manager, the construction contractor, or another party? Are other specially qualified individuals involved in the oversight of renovation projects? Are interior and exterior renovations handled differently in this respect?

5. Typically, do contractors who perform renovations in public and commercial buildings also perform renovations in residential buildings? Are the same work practices followed in both

settings? To what extent are the contractor employees the same from job to job? How likely is it that an employee used to perform a public or commercial building renovation will have received the training required by the 2008 RRP Rule for renovation work in target housing and child-occupied facilities? Do renovation contractors in public and commercial buildings typically establish and enforce standard renovation work practice procedures for their employees?

G. Exposure Considerations

In determining which public and commercial building renovations create lead-based paint hazards and in fashioning reliable, safe, and effective work practices for those renovations, EPA must consider the exposures of building occupants and visitors. To help inform EPA's decision-making, EPA requests public comment, information, and data, particularly relevant peer-reviewed studies, related to exposures.

1. What are the pathways for exposure in each type of public or commercial building?
2. While the Agency has developed research-based daily activity patterns for general use in its analyses for children and adults, none of the patterns distinguish activities based on the character or ownership of the buildings where activities occur (Ref. 41). What data or studies are available that would assist EPA in estimating the amount of time that any particular individual will spend in public and commercial buildings and what portion of that time will be in a building containing leaded paint or lead-based paint hazards? What data or studies exist that characterize the range or distribution of time spent by typical individuals? How much variation in exposure exists in exposure by typical people?
3. What information and data are available on occupancy rates (*e.g.*, number of people, days per year of occupancy), exposed population (*e.g.*, demographic characteristics, reason for being in the building (working, visiting, etc.)), and time-activity patterns of occupants of each type of public or commercial building?

4. How often are public and commercial buildings assessed to determine the presence, distribution and extent of lead-based paint?

5. To what extent will people other than renovation workers, such as other building occupants, visitors, passers-by, and occupants of nearby buildings, be exposed to leaded dust and debris created by public and commercial building renovations? For instance, when scaffolding is installed, how likely are dust and debris to waft down to passersby or to fill the ambient air? To what extent do scaffolding enclosures affect the dispersion of the dust and debris?

6. What information is available on the number of potentially-exposed occupants of buildings undergoing renovations or buildings recently renovated, the duration of the occupants' exposure per work day, and the number of days or hours exposed per year during and after exterior and interior renovations? To what extent are these exposure rates affected by the scheduling of the renovations, *e.g.*, to what extent are renovations conducted during shifts or days when few regular occupants of the buildings are present (typically nights and weekends)?

7. What information and data are available on the proximity of residential properties to public or commercial buildings? What is the distribution of distances of residences, schools and childcare facilities from public or commercial buildings? In particular, to what extent are public or commercial buildings mixed-use buildings, with residences, schools and/or child care facilities in the buildings? What information and data are available on the correlation between the distribution of distances of residences, schools and day care facilities from public or commercial buildings and average incomes of communities or neighborhoods? For example, many low income communities are in mixed-use neighborhoods.

8. What information and data are available on the demographics of mixed-use neighborhoods?

9. For low income communities in mixed-use neighborhoods, particularly those in which

the housing stock is primarily pre-1978, how should EPA consider multiple exposures from both residential buildings and public and commercial buildings?

10. Do communities in mixed-use neighborhoods have higher burdens of lead exposure? What factors should EPA consider in assessing the extent to which renovations in and on public and commercial buildings contribute to disproportionate impacts?

11. What studies and other sources of information are available on the frequency of use or effectiveness of work practices designed to prevent other building occupants and visitors and persons in nearby buildings from being exposed to leaded dust and debris created by renovations in and on public and commercial buildings?

12. To what extent have recent building renovations or constructions installed reused building materials that are coated with lead-based paint? To what extent have installers abated or used techniques to eliminate worker or occupant exposure to lead from these materials?

13. To what extent do green building certification systems encourage the reuse of lead-contaminated building materials? To what extent do these systems encourage lead abatement of reused materials?

IV. References

As indicated under **ADDRESSES**, a docket has been established for this rulemaking under docket ID number EPA-HQ-OPPT-2010-0173. The following is a listing of the documents that are specifically referenced in this document. The docket includes these documents and other information considered by EPA, including documents that are referenced within the documents that are included in the docket, even if the referenced document is not physically located in the docket. For assistance in locating these other documents, please consult the technical contact listed under **FOR FURTHER INFORMATION CONTACT**.

1. President's Task Force on Environmental Health Risks and Safety Risks to Children.

Eliminating Childhood Lead Poisoning: A Federal Strategy Targeting Lead Paint Hazards (February 2000).

2. U.S. Department of Health and Human Services (HHS), Public Health Service (PHS), Centers for Disease Control and Prevention (CDC). Preventing Lead Poisoning in Young Children; A Statement by the Centers for Disease Control and Prevention August 2005).

3. USEPA. Lead; Renovation, Repair, and Painting Program; Proposed Rule. **Federal Register** (71 FR 1588, January 10, 2006).

4. USEPA. Lead; Requirements for Lead-Based Paint Activities in Target Housing and Child-Occupied Facilities: Final Rule. **Federal Register** (61 FR 45778, August 29, 1996).

5. USEPA. Lead; Fees for Accreditation of Training Programs and Certification of Lead-based Paint Activities Contractors; Final Rule. **Federal Register** (64 FR 31091, June 9, 1999).

6. USEPA. Lead; Notification Requirements for Lead-based Paint Abatement Activities Training; Final Rule. **Federal Register** (69 FR 18489, April 8, 2004).

7. USEPA, Consumer Product Safety Commission (CPSC), U.S. Department of Housing and Urban Development (HUD). Protect Your Family From Lead in Your Home (EPA 747-K-99-001, June 2003).

8. Department of Housing and Urban Development (HUD), USEPA. Lead; Requirements for Disclosure of Known Lead-Based Paint and/or Lead-Based Paint Hazards in Housing; Final Rule. **Federal Register** (61 FR 9064, March 6, 1996).

9. USEPA. Lead; Requirements for Hazard Education Before Renovation of Target Housing; Final Rule. **Federal Register** (63 FR 29907, June 1, 1998).

10. USEPA. Lead; Identification of Dangerous Levels of Lead; Final Rule. **Federal Register** (66 FR 1206, January 5, 2001).

11. USEPA. Reducing Lead Hazards When Remodeling Your Home (EPA747-K-97-001, September 1997).
12. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase I, Environmental Field Sampling Study (EPA 747-R-96-007, May 1997).
13. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase II, Worker Characterization and Blood-Lead Study (EPA747-R-96-006, May 1997).
14. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase III, Wisconsin Childhood Blood-Lead Study (EPA 747-R-99-002, March 1999).
15. USEPA. Lead Exposure Associated With Renovation and Remodeling Activities: Phase IV, Worker Characterization and Blood-Lead Study of R&R Workers Who Specialize in Renovation of Old or Historic Homes (EPA747-R-99-001, March 1999).
16. USEPA. Characterization of Dust Lead Levels After Renovation, Repair, and Painting Activities. (November 13, 2007).
17. USEPA. Lead; Renovation, Repair, and Painting Program; Final Rule. **Federal Register** (73 FR 21692, April 22, 2008).
18. USEPA, Sierra Club, etc. Settlement. (August, 2009).
19. USEPA. Lead; Amendment to the Opt-out and Recordkeeping Provisions in the Renovation, Repair, and Painting Program; Proposed Rule. **Federal Register** (74 FR 55506, October 28, 2009).
20. Sierra Club, etc. Petition to Lower Dust Lead Hazard Standard. (2009)
21. USEPA. Response to Petition on Dust Lead Hazard Standard (October, 2009).
22. USEPA. Air Quality Criteria for Lead (September 29, 2006).
23. USEPA. Framework for Cumulative Risk Assessment. Risk Assessment Forum, Washington, DC, EPA/630/P-02/001F (May 2003).

24. USEPA. Review of the National Ambient Air Quality Standards for Particulate Matter: Policy Assessment of Scientific and Technical Information, OAQPS Staff Paper. EPA-452/R-05-005a. Office of Air Quality Planning and Standards, Research Triangle Park (2005).

25. Jones, Robert L., David M. Homa, Pamela A. Meyer, Debra J. Brody, Kathleen L. Caldwell, James L. Pirkle, and Mary Jean Brown. "Trends in Blood Lead Levels and Blood Lead Testing Among U.S. Children Aged 1 to 5 Years, 1988-2004." *Pediatrics* 2009, Vol. 123, No. 3, pp. e376-385, March 2009.

26. HHS, PHS, CDC. "Children with Elevated Blood Lead Levels Attributed to Home Renovation and Remodeling Activities--New York, 1993-1994." *Morbidity and Mortality Weekly Report* (45(51); 1120-1123, January 3, 1997).

27. HHS, PHS, CDC. Children with Elevated Blood Lead Levels Related to Home Renovation, Repair, and Painting Activities – New York State, 2006-2007. *Morbidity and Mortality Weekly Report* (58(03); 55-58, January 30, 2009).

28. Reissman, Dori B., Thomas D. Matte, Karen L. Gurnite, Rachel B. Kaufmann, and Jessica Leighton. "Is Home Renovation or Repair a Risk Factor for Exposure to Lead Among Children Residing in New York City?" *Journal of Urban Health: Bulletin of the New York Academy of Medicine*. Vol. 79, No. 4, 502-511, December 2005.

29. USEPA. Lead; Requirements for Lead-Based Paint Activities: Proposed Rule. **Federal Register** (59 FR 45872, September 2, 1994).

30. CPSC. **Federal Register** (42 FR 44199, September 1, 1977, as amended at 43 FR 8515, March 2, 1978).

31. Roberts, J.W., D.E. Camann, and T.M. Spittler. "Reducing Lead Exposure from Remodeling and Soil Track-In in Older Homes." In: *Proceedings, Annual Meeting - Air and Waste Management Association*. Publication No. 91-134.2. (1991a).

32. Stefani D, D. Wardman, T. Lambert. The Implosion of the Calgary General Hospital: Ambient Air Quality Issues. *J Air Waste Manag Assoc.* 2005 Jan; 55(1):52-9.

33. Farfel M.R., A.O. Orlova, P.S. Lees, C. Rohde, P.J. Ashley, J. Chisolm. "A Study of Urban Housing Demolition as a Source of Lead in Ambient Dust on Sidewalks, Streets, and Alleys." *Environ Res.* 2005 Oct; 99(2):204-13. Epub 2004 Dec 15.

34. Snyder, M.K. and D. Bendersky. "Removal of Lead Based Bridge Paints." Midwest Research Institute. National Cooperative Highway Research Program Report #265 for the Transportation Research Board, National Research Council, December 1983.

35. State of Rhode Island and Providence Plantations; Department of the Attorney General. Rhode Island Lead Nuisance Abatement Plan (September 14, 2007).

36. National Institute for Occupational Safety and Health (NIOSH). Health Hazard Evaluation; Vermont Housing & Conservation Board. HETA #98-0285-2989 Montpelier, Vermont (December 2005).

37. NIOSH. Health Hazard Evaluation; University of California, Berkley. HETA #99-0113-2853 Berkeley, California (July 2001).

38. HUD. National Survey of Lead and Allergens in Housing, Volume I: Analysis of Lead Hazards, Final Report, Revision 7.1. (October 31, 2002).

39. HUD. First National Environmental Health Survey of Child Care Centers, Volume I: Analysis of Lead Hazards, Final Report. (July 15, 2003).

40. USEPA, Office of Solid Waste (OSW). Memorandum from Elizabeth A. Cotsworth, Director, "Regulatory Status of Waste Generated by Contractors and Residents from Lead-Based Paint Activities Conducted in Households" (July 31, 2000).

41. USEPA. Exposure Factors Handbook (Final Report) EPA/600/P-95/002F a-c (1997).

V. Statutory and Executive Order Reviews

Under Executive Order 12866, entitled “Regulatory Planning and Review” (58 FR 51735, October 4, 1993), this action was submitted to the Office of Management and Budget (OMB) for review. Any changes to the document that were made in response to comments received by EPA during that review have been documented in the docket as required by the Executive Order.

Since this document does not impose or propose any requirements, and instead seeks comments and suggestions for the Agency to consider in possibly developing a subsequent proposed rule, the various other review requirements that apply when an agency imposes requirements do not apply to this action. Nevertheless, as part of your comments on this document, you may include any comments or information that you have regarding the various other review requirements.

In particular, EPA is interested in any information that would help the Agency to assess the potential impact of a rule on small entities pursuant to the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*); to consider voluntary consensus standards pursuant to section 12(d) of the National Technology Transfer and Advancement Act of 1995 (NTTAA), Public Law 104–113, section 12(d) (15 U.S.C. 272 note); to consider environmental health or safety effects on children pursuant to Executive Order 13045, entitled “Protection of Children from Environmental Health Risks and Safety Risks” (62 FR 19885, April 23, 1997); or to consider human health or environmental effects on minority or low-income populations pursuant to Executive Order 12898, entitled “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations” (59 FR 7629, February 16, 1994).

EPA specifically requests information and data to facilitate its analyses in the following two areas:

a. Small Entities. EPA is particularly interested in receiving comments and information

about the various characteristics of potentially impacted small entities that would facilitate the Agency's evaluation of the number of firms that might experience an impact from a rulemaking in this area, as well as an assessment of the potential size of that impact on small entities. In commenting or providing information about small entities that might be impacted by a rulemaking in this area, please note that the phrase "small entities" encompasses small businesses, small governmental jurisdictions, and small organizations. In the analysis the Agency expects to perform under the RFA, these entities are specifically defined in sections 601(3) - (5) of the RFA. The definitions for "small business" are codified in the Small Business Administration's (SBA) regulations at 13 CFR 121.201. SBA defines small business by category of business using the NAICS-Codes. (<http://www.sba.gov/regulations/121/201.htm>) Small business default definitions can be found on SBA's internet site at <http://www.sba.gov/size/indextableofsize.html>. A "small governmental jurisdiction" is "a government of a city, county, town, school district or special district with a population of less than 50,000." A "small organization" is any "not-for-profit enterprise which is independently owned and operated and is not dominant in its field."

b. Environmental Justice. EPA is particularly interested in receiving comment and information about potential impacts – both benefits and costs – on the human health or environmental conditions in minority or low-income populations. Such information would facilitate the Agency's consideration of environmental justice during the development of the proposed rule.

This information will be used in the identification and evaluation of options for the proposed rule, and will inform the analyses that the Agency intends to prepare for the proposed rule. Any comments on this topic should be submitted to the Agency in the manner specified

under ADDRESSES. The Agency will consider such comments during the development of any subsequent proposed rule as it takes appropriate steps to address any applicable requirements.

List of Subjects in 40 CFR Part 745

Environmental protection, Hazardous substance, Lead poisoning, Reporting and recordkeeping requirements.

Dated: APR 22 2010



Administrator.

[FR Doc. 10-????? Filed ??-??-10; 8:45 am]

Administrator Signature on page 55 of 55 for the Advance Notice of Proposed Rulemaking entitled "Lead: Renovation, Repair, and Painting Program for Public and Commercial Buildings" (RIN 2070-AJ56)