



BATTLING BED BUGS IN CHICAGO: Making the Case for a Comprehensive Plan



**SAFER PEST
CONTROL PROJECT**
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SAFER PEST CONTROL PROJECT AND BED BUGS IN CHICAGO

Safer Pest Control Project (SPCP) is an award winning nonprofit organization dedicated to reducing the health risks and environmental impacts of pesticides and promoting safer pest control alternatives in Illinois. Since 1994, SPCP has been a leader in reducing pesticide use and has focused much of its efforts on reducing the impacts of pests and pesticides in Chicago's low-income communities. In 2008, Safer Pest Control Project began receiving an unprecedented number of calls from distressed residents looking for answers on how to deal with bed bugs. As an organization with expertise in Integrated Pest Management, SPCP quickly recognized the magnitude of this emergent problem and the critical need for educational materials, training, and community outreach.

In addition to the tenant and management calls that SPCP was receiving, we also started to receive numerous reports from Aldermanic offices across the city and from pest management professionals, confirming the spread of bed bugs across Chicago. In January 2009, we wrote a letter to Mayor Daley, highlighting the resurgence of bed bugs, recommending that the City create a comprehensive program to address the bed bug problem and offering our assistance. Meetings were called and an intergovernmental group was assembled, headed by Evelyn Diaz, the former Mayor's deputy chief of staff. Through these meetings, held over the course of one year, SPCP helped the City recognize the magnitude of this escalating problem by providing a basic understanding of the bed bug issue and presenting the challenges the City would likely face in the near future. As a direct outcome of the meetings, SPCP provided training to the City's building inspectors. SPCP also helped coordinate, with funding from the Chicago Community Trust, the development of bed bug tracking maps, starting in January 2010. With assistance from the Chicago Department of Public Health, bed bug infestation reports received by 311 were collected and used to create GIS maps in order to better assess the spread of this pest. Safer Pest Control Project also became the City's delegate agency for bed bugs. Essentially, SPCP is now the on-the-ground "bed bug agency," providing resources and training services to many Chicago audiences. The City now has a bed bug webpage that has SPCP's fact sheets as the primary source of information. Many City agencies and departments have taken specific independent actions around bed bugs, but the City still lacks a comprehensive approach to dealing with this growing problem.



INTRODUCTION

Bed bugs are making a comeback across the United States and, unfortunately, Chicago has not been spared. Bed bugs are showing up in apartments, houses, shelters, and commercial spaces around the city, catching many residents and institutions off guard. While bed bugs were a regular but unwelcome part of life previous to the 1950's in the U.S., bed bug incidences and awareness dropped off for many decades. Today, bed bugs are back, and many residents are unaware or unknowledgeable about bed bugs. In a recent survey conducted by the National Pest Management Association, only 13 percent of respondents could correctly answer all three basic bed bug questions.^{1*} Many organizations and governmental agencies are also without adequate knowledge, resources, and policies to deal with this crisis. The City is now playing catch up with this growing problem and needs to bring this issue to the forefront of its agenda.

BED BUG BASICS

Once thought a thing of the past, bed bugs are making a resurgence across the nation as well as in Canada, Australia, parts of Europe, and parts of Africa.² They are not a new pest and scientists believe that bed bugs have been with us since people moved into caves.³ Fossilized bed bugs have been excavated from archeological sites over 3,500 years old.⁴ Yet, in the United States, we enjoyed a temporary reprieve from bed bugs from the 1950's until the start of the new millennium. In the 1940's and 50's, heavy pesticide use and other practices decimated most bed bug populations, although pesticide resistance was documented even in the 1950's.⁵ We enjoyed several decades without bed bugs, but today, the reprieve is over. Experts generally agree that the successful return of the bed bug can be attributed to: increased travel, pesticide resistance, changes in pest management practices, lack of public awareness, and the increase in living spaces and the stuff people own.⁶ Cities, towns, and even rural areas are dealing with the growing bed bug epidemic, without the knowledge of what bed bugs are or how to effectively prevent and treat infestations.

Awareness of bed bugs (*Cimex lectularius*) has increased dramatically with media coverage and the growing spread of the problem across the country. Unfortunately fear, stigma, and lack of knowledge are still prevalent. Bed bugs feed on blood and prefer humans over any other host. They need blood to grow and can live from several months to a year on a single feeding, which usually occur at night while we are sleeping. Adult bed bugs are flat, small (less than ¼-inch long), oval-shaped, wingless, and reddish brown; adults are often compared to an apple seed. Immature bugs are smaller and amber colored, while eggs are tiny and translucent white. Bed bug bite reactions vary greatly. Many people do not react to bed bug bites, but some will show bites right away, some become sensitive to them over time, and some have severe allergic reactions. Bed bugs have not been found to transmit any diseases, but they can have health impacts through reactions to bites, loss of sleep, and resulting stress and paranoia. The U.S. Centers for Disease Control and Prevention (CDC) and the Environmental Protection Agency (EPA) have released a joint statement on bed bugs, categorizing bed bugs as a pest of significant public health importance.⁷

What is IPM?
Integrated Pest Management (IPM) is a comprehensive approach to pest problems that includes preventative measures, education, and treatment.

Lack of knowledge about bed bugs not only fuels the fear and stigma, but also exacerbates the problem by delaying reporting and treatment, increasing the misuse of pesticides by residents, and escalating the spread of bed bugs (from apartment to apartment or through hitchhiking on belongings). Anyone can get bed bugs, although certain behaviors

*In the survey, respondents were asked three basic questions about bed bug behavior and biology. They were asked whether bed bugs transmit disease to humans, if bed bugs are more common in low-income housing, and if bed bugs were attracted to dirty homes. All three are untrue. Only 13 percent of respondent answered all three questions correctly, while a staggering 39 percent of respondents answered all three questions incorrectly.



such as picking up used furniture, travelling, or living in multi-unit housing can greatly increase the likelihood of encountering and bringing home bed bugs. Moreover, some individuals and institutions (for example, low-income individuals, shelters, affordable housing, etc.) are at higher risk for bed bugs and for experiencing recurring problems due to lack of funds for prevention and treatment, types of housing situations, and increased prevalence of certain high-risk behaviors.

PEST CONTROL FOR BED BUGS: EFFECTIVE & INEFFECTIVE PRACTICES

Bed bugs are different than other pests we encounter in our everyday lives, especially when it comes to treatment. Early detection and intervention are key for dealing with bed bugs. A small problem can very quickly become a large problem that is difficult to control. Awareness is also important for prevention and reducing the risk of getting bed bugs. Treatment for bed bugs, when an infestation is confirmed, cannot be a simple spraying of pesticides. According to the U.S. EPA, “Bed bug control can only be maintained through a comprehensive treatment strategy that incorporates a variety of techniques and vigilant monitoring. Proper use of pesticides may be one component of the strategy but will not eliminate bed bugs alone.”⁸ Bed bugs have shown amazing adaptability, over time becoming resistant to many pesticide formulations and they continue to adapt. In addition, they are difficult to reach as they tend to hide in cracks and crevices. An Integrated Pest Management (IPM) approach is needed to effectively deal with bed bugs, which usually includes inspection, education, prevention, proper treatment (non-chemical and chemical in some cases), and follow-up. Education, both of residents and pest management professionals, is necessary in order to promote early detection, identification, and proper treatment.

The combination of the lack of knowledge, high cost of effective treatment, and the impact of bed bugs on one’s physical and psychological well-being create a truly aggravating problem that is leading individuals to take matters into their own hands. Stores across Chicago are selling pesticide products for bed bugs to the general public, which is a much less expensive alternative than hiring a pest management professional. Total Release Foggers (TRFs), also known as bug bombs, are one of these products that can pose real risks to people and their homes when used incorrectly.⁹ People are looking for an inexpensive and immediate fix to their bed bug problem. Instead, they may expose themselves and their children to dangerous pesticides and make their bed bug problem worse. TRFs do not control bed bugs; rather, they tend to have a repellent effect, encouraging the bugs to scatter, significantly increasing their migration.^{10,11} TRF use may result in the spread of bed bugs, unnecessary exposures to pesticides, and even explosions when used incorrectly. Education of tenants and landlords, especially in high-risk populations such as residents in low-income areas, is vitally important to prevent incorrect use of pesticides that can be harmful to their health and contribute to the spread of bed bugs.

ECONOMIC AND FINANCIAL IMPACT OF BED BUGS

Bed bugs pose a threat not only to the mental and physical well-being of Chicago’s residents; they pose an economic burden on society that extends far beyond the cost of pest control. There are many potential economic impacts on businesses and individuals, including lost wages, health care costs, lost revenue, loss of personal property due to an infestation, and reduced productivity (see inset box).¹² Bed bugs are a real concern for the hotel and tourism industry, both for individual hotels that may be marked as establishments to avoid due to bed bugs or as an entire city to avoid due to bed bugs. In 2009, visitor spending in Chicago amounted to nearly \$10.17 billion, with \$586 million generated in tax revenue for the state and local governments.¹³ While it is unlikely that visitors will stop visiting Chicago, bed bugs could have a significant impact on people’s perception of Chicago and their travel choices. Public fear is growing, but education is not keeping up. Proper education will help individuals understand how to protect themselves and what hotels and others are doing about this problem. No hotel can guarantee to be bed bug free, but they can have protocols in place that include education of staff, monitoring, and a good pest management professional



to proactively deal with bed bug problems. For hotels and other establishments, bed bug litigation and settlements are also becoming a looming reality, with significant economic impacts.

Bed bugs are not only showing up in homes and hotels, they are also showing up in schools, hospitals, theaters, offices, retail stores, libraries, day care centers, fire and police stations, ambulances, moving vans, and funeral homes.¹⁴ As a result, homeowners, tenants, landlords, companies, and other institutions are being put under financial strain by the cost of pest control for bed bugs and from health care costs, lost wages due to missed work, and reduced productivity due to the effects of a bed bug infestation. Lost revenue is also an issue for landlords faced with vacant units due to bed bug infestations or bad reputations as a result of infestations. The cost of pest control for bed bugs can be significant and recurring if the problem is not adequately addressed or if bed bugs are reintroduced. Nonprofits and government agencies that provide or subsidize housing are becoming very concerned by this issue. Affordable housing will not stay affordable, or even livable in some instances, if the bed bug problem continues to grow and continues to demand costly pest control on a regular basis. The cost of proper pest control can also lead some residents to taking a DIY approach. Some control methods, such as cleaning, vacuuming, and laundering, are required for proper preparation and treatment and can be done safely and effectively by residents. Unfortunately, as discussed above, many residents will misuse and overuse pesticides in their efforts to rid their homes of bed bugs due to a lack of knowledge about both bed bugs and the actual efficacy of pesticides. The misuse of pesticides can have serious consequences, especially on the health of those most vulnerable (children, pregnant women, elderly, and those with health problems). As a result, SPCP is recommending that bed bugs should be addressed on a city-wide basis through a comprehensive plan, including elements of both policy development and public outreach and education.

POLICY LANDSCAPE

Cities and states across the country are recognizing the need for action and, as a result, are developing bed bug specific policies and plans to address this problem. In Illinois, the Legislature requested that the Structural Pest Control Advisory Council (SPCAC) convene the Illinois Subcommittee on Bed Bugs, with the task of developing a report to the General Assembly with recommendations on the prevention, management, and control of bed bug infestations by the end of 2011. Rachel Rosenberg, Executive Director of SPCP, sits on both the SPCAC and the Subcommittee on Bed Bugs. Legislative bodies in Alabama, Arizona, Connecticut, Maine, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, and South Carolina considered bed bug legislation in 2010-11, with Maine and New York adopting bed bug related laws last year. Many municipalities are also addressing or looking at this issue, including Jersey City, San Francisco, New York City, Boston, Cincinnati, Detroit, Yonkers (NY), Ocean City (MD), and Bellevue (KY). Each locale is taking a different approach, but many common components include right to know (disclosure of land-

Potential Economic Impacts from Bed Bug Infestations

- Cost of professional pest control
- Lost income for hotel rooms taken out of inventory and apartment units that cannot be rented
- Room refunds to guests, rent reductions to renters
- Cleaning costs and replacement of bed linens and other heavily infested materials
- Replacement of infested furniture (furniture rental and rent-to-own)
- Replacement of infested mattresses and box springs
- Cost of encasements
- Repairs and refurbishment of badly infested premises
- Loss of long-term income from a damaged company reputation (particularly hotels, motels, resorts)
- Lost productivity from stress and lack of sleep
- Medical bills for treatment of bites and other bed bug related conditions
- Government fines
- Litigation and settlements

Source: Bed Bug Handbook, 2007.



lord's or seller's knowledge of bed bugs in unit), tenant requirement for providing access and notification, financial responsibility for treatment (who pays), unit preparation requirements, sanitation/disposal protocols, and outreach and education. These kinds of policies can reduce the spread of bed bugs, the cost of treatment, the confusion over tenant and landlord responsibilities, and litigation as well as increase the effectiveness of treatment and speed of notification.

While bed bugs are on the State of Illinois' radar, the City of Chicago should not wait until state laws are passed to act in a coordinated and effective way. The City made an initial start a few years ago with the creation of a Bed Bug Task Force but has not followed through with the task force as an active and effective tool. In the meantime, the problem continues to grow. This year Chicago was ranked #2 and #4 in the nation for most bed bug infested cities on two pest control industry lists.¹⁵ The City of Chicago is at greater risk due to the high percentage of multi-unit and joined housing, which provides easy routes for bed bug infestations to grow. Only 26.3% of Chicago's housing units are detached one-unit structures, meaning over 73% of Chicago's housing units are at higher risk for bed bug infestations.¹⁶ Chicago's stock of affordable housing, with the Chicago Housing Authority providing homes to more than 50,000 families and individuals and overseeing an additional 37,000 through the Housing Choice voucher program, is especially at risk. Bed bugs are a tenacious pest—even when landlords are notified, it can be a costly problem to resolve. Bed bugs are already, and will continue, putting affordable housing at risk as well as the rest of Chicago's housing stock, unless decisive action is taken.

The City of Chicago building code does not specifically address bed bugs and neither does any city ordinance (including the Residential Landlord and Tenant Ordinance). At this time, most are interpreting the law to read that bed bugs would be included as an insect or pest under Chicago municipal code (13-196-620 Residential buildings – Responsibilities of occupants and 13-196-630 Residential buildings – Responsibilities of owner or operator). Yet, SPCP and most experts believe that this is not adequate due to the nature of bed bugs and its treatment challenges. Municipal code reads that the owner or operator must exterminate insects or pests if the infestation is in two or more family units or in a shared part of the building. The owner or operator, if one unit is infested, only has to act if the infestation is caused by the failure of the owner or operator to maintain the dwelling in a reasonable insect-proof condition. In the case of bed bugs, units cannot be insect-proofed, and waiting for two units to become infested is waiting too long. The more time that passes, the worse the problem becomes and the more expensive it will be to resolve it. As sanitation in a living space has no bearing on the likelihood of infestation, it's difficult and counterproductive to blame a tenant for a bed bug problem. Instead, tenant education about bed bugs, ways to minimize the risk of bringing them in, and their role in preparation for treatment should be the focus. We can slow the spread of bed bugs in Chicago by clearly laying out the responsibilities of tenants and landlords, which will minimize confusion and promote timely and effective action.

RECOMMENDATIONS FOR THE CITY OF CHICAGO

The City of Chicago has the opportunity to significantly slow the spread of bed bugs and help protect the City's affordable housing, tourism industry, and residents. A comprehensive bed bug plan has the potential to greatly improve the current state of affairs and help the City avoid the bed bug worst case scenarios that New York City and other U.S. cities are experiencing. We recommend that the City takes the following actions, as part of a comprehensive plan to address the bed bug crisis plaguing Chicago.

City Policy: Ordinances and Municipal Code

In order to slow the spread of bed bugs, we recommend that City code and ordinances be updated to reflect the reality of bed bugs. We recommend that current code and ordinances are rewritten or new ordinances are enacted to directly address bed bugs as a separate and unique pest control problem. Elements should include: right



to know (disclosure of landlord's or seller's knowledge of bed bugs in unit), tenant requirement for providing access and notification, financial responsibility for treatment (who pays), unit preparation requirements, sanitation/disposal protocols, education and outreach to community, and dedicated funding. These are becoming the most common components of bed bug legislation in the United States, for their significant impact on reducing problems and costs associated with bed bug infestations. While these elements will all contribute to improving the bed bug situation in Chicago, the most important four are:

- 1. Right to know:** Disclosure by landlord or seller of any knowledge of prior or current bed bug activity within the unit. Property owners must not rent units known to be infested with bed bugs. For example, New York City enacted law in 2010, which mandates that new residential tenants in New York City be given a one-year bed bug infestation history.¹⁷
- 2. Explanation of tenant and landlord responsibilities:** Property owners are responsible for controlling bed bugs in all units and common areas of the rented dwellings they own. Tenants must notify landlords if bed bugs are suspected or evidence of bed bugs is found. Tenants must grant access to their units for purposes of pest inspection and treatment as well as make any necessary preparations prior to treatment, per the pest management professional's recommendations. Tenants and landlords both have responsibilities in dealing with bed bugs, which need to be made explicit through municipal code and ordinances. The protocol for enforcement and fines for both landlords and tenants also need to be clear.
- 3. Sanitation/disposal protocols:** Specific requirements are needed for the disposal of bed bug infested items including mattresses, box springs, bed frames, couches, sofas, reclining chairs and other furniture in which persons may sleep. Any item that cannot be made free of bed bugs should be promptly and properly disposed of after being damaged so as to render it unusable, wrapped, sealed (e.g., in plastic sheeting), and then marked in such a manner as cannot be overlooked with the words "BED BUG INFESTED" or similar language. Items should be sealed as they are moved from the building to prevent the dropping of bed bugs on the way out. In addition, we recommend that the infested items be picked up promptly to reduce the risk of causing new infestations.
- 4. Education and outreach to community:** A public awareness campaign around bed bugs should be undertaken which includes, but is not limited to, requirement for landlords to provide a bed bug informational pamphlet with a lease (similar to how lead information is distributed), expansion and publicizing of City's bed bug webpage, media and ad campaign about the basics of bed bugs in Chicago, publicizing of the bed bug reporting system, and explanation and advertising of relevant code and ordinances (including enforcement and fines). Seniors, consumers of low-income housing, shelters, and other high-risk populations should receive special attention as part of the outreach work. These populations are being greatly affected and often lack the knowledge and/or resources to identify and control the problem, and therefore can often be the source of new infestations.

Public Education

Lack of knowledge and awareness is one of the main drivers in the spread of bed bugs. While the public's awareness of bed bugs is growing, a number of myths and other misinformation about bed bugs and their control are still prevalent. Chicago residents need to be aware of the fact that bed bugs are a growing problem and they need basic information and tools to be available. A citywide public awareness campaign could have a significant impact, especially if coupled with an expanded City bed bug webpage. Tasteful and relevant media outreach should be developed for city-wide distribution in public spaces like libraries, other public buildings, parks, and on public transportation. As a delegate agency of the City of Chicago, we are happy to provide information and educational materials, such as ours that are currently posted on the City's bed bug webpage.



Tracking/Monitoring System

In 2010 the City began to benchmark the bed bug trend in Chicago through mapping of reported bed bug infestations using 311 data, in order to better serve Chicago residents and track the spread of bed bugs. This system has provided valuable information, yet it has become apparent that it is not sufficient. Recent reporting numbers show a significant drop in reported cases, while other sources (local pest management professionals, calls to Safer Pest Control Project, etc.) are not showing any slowing of this problem in Chicago. Chicago Department of Public Health (CDPH) and the Department of Buildings are currently investigating, but an effective and integrated monitoring system, as part of a comprehensive plan, will be vital to track the spread of this menace. It may also provide insight into where additional assistance, outreach, or other targeted programs is needed. The system, as currently designed, is a passive one that is not advertised to the citizenry. The data collected runs the risk of significant inaccuracies leaving the City vulnerable and unable to respond in a meaningful way. In addition, the City does not currently include reported infestation numbers from Chicago Housing Authority (CHA) buildings. These should be included in the overall tally to provide a more accurate picture of the current situation. It is recommended that a request go out to the CHA to provide their numbers on a quarterly basis to the CDPH. Possibly, all housing related organizations accepting public funds that provide services in Chicago should be providing their numbers as well.

As the current monitoring activities are proving inadequate, other options should be considered in order to gather more accurate data. A good example of a proactive monitoring system is that of New York City. New York City uses its Community Health Survey to provide additional insight into the spread of bed bugs as well as other pest and pesticide issues.¹⁸ Another option is to create a dedicated hotline or stand alone program with 311 for bed bugs. Calls to the hotline or 311 would provide access to bed bug information and resources in Chicago and encourage non-complaint/non-emergency reports of bed bug infestations. This type of service would encourage residents to call with problems without initiating an inspection. Currently, this is the only response available within the current system. Any monitoring tool the City employs must be publicized via public awareness campaigns, the Aldermanic offices, and other venues. Unless the general public is aware of the service and uses it, the picture will be incomplete on the true status of this problem.

Comprehensive Approach/Agency Cooperation

Multiple city departments and agencies are being impacted by bed bugs and are already taking action. These include, but are not limited to, the Chicago Housing Authority, Department of Buildings, Department of Family and Support Services, 311 City Services, and Department of Public Health. As part of a comprehensive plan, these departments and agencies should be included in the planning process and efforts should be made to have resources and materials that can be used by all. Duplication of work could be avoided by having a united approach, potentially reducing costs and improving services.

City Bed Bug Task Force

The City needs to reconvene its Bed Bug Task Force, which is now inactive despite the continued growth of the bed bug problem in Chicago. A task force is needed to oversee the creation and implementation of a comprehensive bed bug plan, addressing these main areas: City Policy, Public Education, Monitoring System, and Comprehensive Approach/Agency Cooperation. We recommend that the City include representatives from at-risk populations being impacted by bed bugs (such as senior and group housing) as well as representatives for tenants, landlords, community organizations, and the pest control industry who can provide valuable information about the Chicago situation. Multiple City agencies and departments should also be involved, including Chicago Department of Public Health, Department of Family and Support services, Department of Buildings, Chicago Housing Authority, Department



of Housing and Economic Development, Streets and Sanitation, and Chicago Public Schools. These departments and agencies are, or will be, involved with the bed bug problems in Chicago. An effective task force can provide a united plan and voice for the City's actions against bed bugs.

CONCLUSION

Bed Bugs are here to stay, so now is the time for the City of Chicago to take decisive action. Increased awareness and strong policies will help stem the spread of this pest, saving the City and its residents time, money, and trouble. Without action, the bed bug problem will continue to grow and endanger Chicago's affordable housing, tourism industry, and the general well-being of its residents. We highly recommend that the City of Chicago seize this opportunity and develop resources and build capacity to address this problem head on.

For more information, inquiries, or additional copies, please contact Maren Webb, Program Associate, at 773-878-7378 x203 or mwebb@spcpweb.org.

SOURCES

- ¹ BedBug Central. 12 July 2011. "Bedbug Season is Here, but Survey Shows the Public Struggles to Learn Bedbug Basics." <http://www.prweb.com/releases/2011/7/prweb8632967.htm>
- ² Pinto, L.J., R. Cooper, and S.K. Kraft. *Bed Bug Handbook: The Complete Guide to Bed Bugs and Their Control*. Mechanicsville, Maryland: Pinto & Associates, Inc, 2007.
- ³ Potter, Michael F. "The History of Bed Bug Management—With Lessons from the Past." *American Entomologist* 57, Vol. 1 (2011): 14-25.
- ⁴ Ibid.
- ⁵ Pinto, L.J., R. Cooper, and S.K. Kraft. *Bed Bug Handbook: The Complete Guide to Bed Bugs and Their Control*. Mechanicsville, Maryland: Pinto & Associates, Inc, 2007.
- ⁶ Ibid.
- ⁷ U.S. CDC and EPA. "Joint Statement on Bed Bug Control in the United States from the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Environmental Protection Agency (EPA)." http://www.cdc.gov/nceh/ehs/Docs/Joint_Statement_on_Bed_Bug_Control_in_the_US.pdf
- ⁸ U.S. EPA. 2011. "Bed Bug Information." <http://www.epa.gov/bedbugs/>
- ⁹ U.S. EPA. 24 March 2010. "Safety Precautions for Total Release Foggers." <http://www.epa.gov/pesticides/factsheets/fogger.htm>
- ¹⁰ Potter, Michael F. 1999. "Limitations of Home Insect Foggers ('Bug Bombs')." <http://www.ca.uky.edu/entomology/entfacts/ef643.asp>
- ¹¹ National Center for Healthy Housing (NCHH). 2010. "What's Working for Bed Bug Control in Multifamily Housing: Reconciling best practices with research and the realities of implementation." http://www.nchh.org/Portals/0/Contents/bedbug_report.pdf
- ¹² U.S. CDC and EPA. "Joint Statement on Bed Bug Control in the United States from the U.S. Centers for Disease Control and Prevention (CDC) and the U.S. Environmental Protection Agency (EPA)." http://www.cdc.gov/nceh/ehs/Docs/Joint_Statement_on_Bed_Bug_Control_in_the_US.pdf
- ¹³ Chicago Office of Tourism. "2009 Statistical Information." http://explorechicago.org/etc/medialib/explore_chicago/tourism/pdfs_press_releases/chicago_office_of.Par.83640.File.dat/Statistics_2009.pdf
- ¹⁴ Potter, M.F., B. Rosenberg, and M. Henriksen. 2010. "Bugs without Borders—Executive Summary: Defining the Global Bed Bug Resurgence." *Pestworld*, Sept/Oct: 8-20.
- ¹⁵ Terminix. 25 May 2011. "New Terminix Top 15 Ranking Shines Light on Critters That Hide in the Dark." <http://www.prnewswire.com/news-releases/annual-list-identifies-where-bedbugs-bite-most-across-us-122598653.html>;
Orkin. 26 May 2011. "Orkin's Top 50 Bed Bug Cities." <http://www.orkin.com/press-room/top-bed-bug-cities>
- ¹⁶ U.S. Census Bureau. "Chicago city, Illinois; Selected Housing Characteristics: 2005-2009," from 2005-2009 American Community Survey 5-Year Estimates. http://factfinder.census.gov/servlet/ADPTable?_bm=y&-geo_id=16000US1714000&-qr_name=ACS_2009_5YR_G00_DP5YR4&-ds_name=ACS_2009_5YR_G00_-&-lang=en&-sse=on
- ¹⁷ New York State Division of Housing & Economic Renewal. 25 October 2010. "Housing Management Bureau Memorandum # 2010-B-07." http://www.dhcr.state.ny.us/AboutUs/Offices/HousingOperations/2010_B07.pdf
- ¹⁸ New York City Department of Health and Mental Hygiene. 2009. "Environmental Public Health and Sustainability Tracking Portal." <https://gis.nyc.gov/doh/track/>

Safer Pest Control Project is dedicated to reducing the health risks and environmental impacts of pesticides and promoting safer alternatives in Illinois.

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