

Bed Bugs in Toronto

Developing an Effective Response

Prepared For:

Toronto Medical Officer of Health and Toronto Board of Health

Prepared By:

Toronto Bed Bug Project Steering Committee

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INTRODUCTION AND ACKNOWLEDGEMENTS

All current evidence indicates that bed bugs infestations are rapidly increasing within Toronto, and within other local municipalities in North America, as well as world-wide. As a result, immediate action, coordination, and resources are required to develop effective municipal, provincial and worldwide responses to the increasing number of infestations that are occurring.

This “**Bed Bugs In Toronto: Developing an Effective Response**” Community Report of the **Toronto Bed Bug Project**,

- brings together our current knowledge and experience in Toronto gained over the past 5 years tackling the rapidly growing challenge of bed bugs infestations;
- outlines some of the many community, housing, and City of Toronto efforts taken to respond to this issue;
- identifies a number of challenges that need to be overcome; and,
- recommends a series of broad based actions that need to be implemented which form a comprehensive response to bed bugs in Toronto, with the potential for far reaching results across Ontario, Canada, as well as internationally.

The **Toronto Bed Bug Project** is a **Toronto Public Health** initiative. Established over one year ago, the Toronto Bed Bug Project has representation from and the active involvement of many relevant stakeholder groups. The Toronto Bed Bug Project, and its working groups, has accomplished much over the past year. With the submission of this **Report** to the Medical Officer of Health and the Board of Health, the community representatives of the Toronto Bed Bug Project thank Toronto Public Health for this opportunity **to outline a plan**, which will ensure that **we in Toronto are pro-actively seeking and implementing innovative solutions to a rapidly increasing health and social issue.**

This **Community Bed Bug Report and Recommendations** are predominately based on:

- the **work of the Toronto Bed Bug Project and its working groups** - a bed bug action strategy, which was initiated and supported by Toronto Public Health, and includes a number of stakeholders and community partners.
- A **one day planning session** that was organized by the Toronto Bed Bug Project, in partnership with the City of Toronto and community agencies to develop a bed bug strategy for the City of Toronto.
- A research report “**Bed Bugs Are Back: Are We Ready?**” completed by Habitat Services and WoodGreen Community Services, in partnership with Public Interest, with funding from the City of Toronto and the Province of Ontario, which assembles much of the national and international information about bed bugs and compares it to our local Toronto experience.

We would like to acknowledge and thank all the members of the Toronto Bed Bug Project Steering Committee and Working Groups for all their work and dedication in addressing the issue of bed bugs in Toronto.

We would like to especially thank Reg Ayre, the Manager, and Alicia Lowe, and Cathy Loik, Health Inspectors, at Toronto Public Health who have provided ongoing leadership and assistance to both the Toronto Bed Bug Project and directly to those who are struggling with bed bugs in their homes and communities across Toronto.

Sincerely,

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EXECUTIVE SUMMARY

Bed bugs infestations are rapidly increasing within Toronto, and within other local municipalities in North America, as well as world-wide. As a result, immediate action, coordination, and resources are required to develop effective municipal, provincial and worldwide responses to the increasing number of infestations that are occurring.

- **Bed Bugs Are Different From Other Bugs:** *Bed bugs are extremely challenging to get rid off and require a grueling labour intensive preparation and treatment process before they can be eliminated from homes, apartments and other spaces.*
- **Stigma and Psychological Impacts:** *The stigma associated with bed bugs is enormous. People often struggle through the challenge of getting rid of bed bugs on their own. They do not report their infestations for fear of being blamed and/or evicted. Often people who suffer from bed bug infestations become completely overwhelmed and can experience very high levels of anxiety, stress, depression, sleep deprivation, insomnia, constant vigilance, and an incredible preoccupation with bed bugs, sometimes resulting in psychological trauma.*
- **Bed Bugs Do Not Go Away On Their Own:** *Bed bug infestations with the best treatment and preparation can take up to 6 months to eradicate. According to leading scientists large scale infestations if left untreated result in the inevitable spread of bed bugs*
- **There Is No Magic Bullet in Sight:** *Many attribute the recent growing bed bug infestations across the world to the fact that we no longer use DDT. However, by the 1950's it was widely recognized that bed bugs across the world had become resistant to DDT. Currently, the licensed pesticides being used on bed bugs only work if they come in direct contact with bed bugs during the application. Recent studies are indicating that bed bugs in various parts of the world are developing resistance to the pesticides licensed for use against bed bugs.*
- **Increasing Incidents of Bed Bugs:** *The incidents of bed bugs are increasing world wide. Cities across the world are tracking huge increases in the number of bed bugs reports over the past 10 years.*
- **Increasing Risk On Work Places and Public Spaces:** *Employers and staff in the non-profit sector, and private and public landlords, are dedicating increasing amounts of their time and resources to dealing with bed bugs.*
- **The High Cost of Doing Nothing:** *The longer left alone and untreated, the more the bed bugs will multiply and migrate. When colonies reach a certain size, some of the bed bugs begin to break away and migrate, moving further into adjacent units or traveling on belongings into new spaces, creating multiple infestations.*
- **Continuing To Take Action Now:** *In Toronto, over the past 5 years, various community agencies, non-profit housing providers, staff from City of Toronto divisions, tenants and tenant groups, pest control operators, private landlords, and others impacted by bed bugs have engaged in community organizing, resource development, advocacy, information dissemination, and education to address the bed bug issue in*

Toronto. We are uniquely positioned in Toronto to develop a comprehensive bed bug strategy that prevents wide scale bed bug infestations and reduces the high costs of eradicating untreated bed bug infestations.

The following recommendations outline a comprehensive multi-faceted response to addressing bed bugs within Toronto:

It is recommended that:

- 1. The City of Toronto, through Toronto Public Health, continue to lead and implement a Bed Bug Action Strategy in Toronto.**
- 2. The City of Toronto and each City Division (where applicable) take a lead role in distributing and sharing information about bed bugs across Ontario and North America.**
- 3. The City of Toronto develop and initiate a broad based public messaging campaign.**
- 4. The City of Toronto, include information articles about bugs city in “Our Toronto”.**
- 5. The City of Toronto seek the support of other funders, such as the Local Health Integration Networks across the province (including the Toronto Central, Central East, Central West, Central, and Mississauga Halton Local Health Integration Networks), Ministry of Health, foundations, and private donors to support community-based responses which address the financial, social, and emotional issues related to bed bug infestations.**
- 6. The City of Toronto develop and implement a bed bug education and outreach strategy.**
- 7. The City of Toronto research and develop legislative options to control and respond to bed bug infestations.**
- 8. The City of Toronto implement a number of tracking and monitoring mechanisms to monitor the prevalence of bed bugs.**
- 9. The City of Toronto develop best practices that support City services and City funded agencies to identify and manage infestations in public and work spaces, as well as address staff issues such as work refusal, labour/management, legal and liability issues.**
- 10. The City of Toronto continue to work with relevant stakeholders to develop and implement community strategies aimed at controlling bed bugs which are based on best practices.**
- 11. The City of Toronto work with academic institutions, community partners and other stakeholders to research the health impact of bed bugs.**

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BED BUGS GENERAL OVERVIEW

Quick Facts on Bed Bugs

Mature bed bugs are oval, flat reddish brown insects about the size of an apple seed. Newly hatched bed bugs are translucent in colour and as small as an uncooked grain of rice. Before feeding they are flat and after feeding they become engorged and turn a darker reddish colour. Bed bugs feed on the blood of mammals or birds, but they prefer humans. Bed bugs usually live for 6 to 9 months however **adult bed bugs can live for up to a year without feeding**. Female bed bugs can lay 200 to 500 eggs during her lifespan. Eggs hatch in about 10 days and the newly hatched bugs must feed within 2 days or they die. Most of the time, bed bugs are nighttime insects, although there have been growing reports that with larger infestations bed bugs begin to travel during the day on clothing, and personal belongings such as bags. Typically, they hide during the day and come out at night to feed. They move as quickly as an ant, and seek out body heat, and exhaled carbon dioxide. **Up to 70% of people do not react to bed bugs bites, so bites themselves are not a reliable indicator that a person has bed bugs in their home.**

Bed bugs can be found almost everywhere in the world in cities and homes where people reside. They thrive at temperatures and levels of humidity that humans find comfortable and gather and nest in bedding, clothing, and upholstered furniture where they are likely to come into frequent contact with people for their blood meals.

We have lived with high amounts of bed bug infestations since prehistoric times. In the 1880s 75% of homes in England had bed bugs. Through a government lead intervention strategy this number was reduced to 50% by the 1930's. **About one third of all homes in Europe still had bed bugs in the 30's and 40's, but eventually through pesticide use and government protocols, bed bugs diminished, for the most part, and have been unheard of in North America for the last 50 years.**

More recently, over the past 6 or 7 years we have been hearing about bed bug resurgence world-wide. Although extensive statistical information is just starting to be collected, anecdotal and qualitative information indicates that we are facing rapidly growing bed bug resurgence in Toronto, in North America, and world-wide.

Bed Bugs Are Different From Other Bugs

Labour Intensive Preparation: Bed bugs are extremely challenging to get rid off. People must undertake the grueling process of preparing and treating their units, washing and placing all of their clothing in air tight containers, daily vacuuming, sealing baseboards and floors, and in some cases, throwing out much of the affected furniture in their home. In order to eradicate or even manage bed bugs requires adequate financial resources, energy, a lot of physical labour,

proactive and informed landlord involvement, social support, knowledge, expertise, information, time, and assistance from the pest control industry. Preparation and treatment is only effective if all of the detailed procedures are followed: the vacuum bags bagged and thrown in the garbage immediately after the vacuuming has been completed; items and clothing kept bagged for at least 2 weeks after each spray or until there has been confirmation that there is no active bed bug infestation; caulking and sealing baseboards, walls, and ceilings; bagging clothing as it is taken out of closets and drawers, sealing the bags, taking care when transferring clothing into the washer and dryer so that the bugs and eggs are not spread throughout the house, apartment, hallways, and laundry room.

Stigma: The stigma associated with bed bugs is enormous. People often struggle through the challenge of getting rid of bed bugs on their own. They do not report their infestations to their landlord as they fear being blamed for causing the infestations and/or being evicted. They become isolated in their units. They stop inviting their friends or families over as they dread spreading their infestations to others. Children in affected homes often do not disclose to anyone that they have bed bugs for fear of being ridiculed and made fun of. Some in home services have been known to refuse to go into homes where there are known infestations for fear that the bed bugs and/or bed bug eggs will hitch a ride on their clothing and belongings and they will bring bed bugs into their workplaces and into their homes.

Health and Psychological Impacts: Often people who suffer from bed bug infestation become completely overwhelmed. Research done on the emotional impacts of bed bug infestations indicate that people's experiences range from very high levels of anxiety, stress, to depression, sleep deprivation, insomnia, constant vigilance, and an incredible preoccupation with bed bugs, sometimes resulting in psychological trauma. Regardless of these impacts, there are no formal psychological supports for people with bed bug infestations.

High Risk of Spread: According to leading scientists large scale infestations if left untreated result in the inevitable spread of bed bugs. Bed bugs in severely infested locations across the world have been observed to be mobile during the day, traveling on people's bodies and personal belongings, and even crawling between buildings – raising the risk of infestation and bed bug transmission in public and common spaces.

Issues Contributing to the Increasing Rates of Bed Bug Infestations

Little Information Available: Bed bugs will not go away on their own. Even bed bug infestations with the best treatment and preparation can take up to 6 months to eradicate. Most people have little knowledge about how to identify bed bugs, let alone deal effectively with a bed bug infestation. Medical professionals often misdiagnose bed bug bites for other ailments. Individuals facing infestations sometimes call in pest control companies to spray their homes and apartments, but seldom do they apply all of the interventions required of an integrated pest management approach. Infestations routinely grow to levels that quickly become challenging to manage and spread to other new sites. The good news is the sooner you intervene the sooner you can successfully get rid of bed bugs in your home. Others, attempt to get rid of the problem on their own or work with their landlords, most often by having pest control companies come and do a number of sprays. **When the bed bug infestations do not go away after repeated**

sprays, individuals sometimes give up and end up living with bed bugs for months or years believing that repeated sprays is the most that can be done and that they will never be fully rid of the problem; some move to other housing and others stop reporting the problem to their landlords, which results in infestations being spread to other units and to other sites.

There is no Magic Bullet in Sight: Many attribute the recent growing bed bug infestations across the world to the fact that we no longer use DDT. However, ***by the 1950's it was widely recognized that bed bugs across the world had become resistant to DDT.*** Currently, the licensed pesticides being used on bed bugs only work if they come in direct contact with bed bugs during the application. ***Recent studies are indicating that bed bugs in various parts of the world are developing resistance to the pesticides licensed for use against bed bugs.*** Furthermore, the pesticides do not penetrate the eggs and newly hatched bed bugs can thrive in environments which have been recently sprayed. Incomplete treatments, which do not include an integrated pest management approach, can break up bed bug colonies, instead of eliminating them. Incomplete treatments are playing a significant role in the growing rates of bed bug infestations that we are seeing today.

Also, as people desperately seek out information about what they can do to get rid of bed bugs in their homes, they are often lead to ineffective and high risk strategies to address their infestations. Over the counter bug spray, rubbing alcohol, and kerosene are some of the home remedies being used by people. However, home remedies such as rubbing alcohol and kerosene are considered to be fire hazards, and are not a recommended strategy to get rid of bed bugs.

Characteristics of Higher Risk Housing/Accommodation: Scientists agree bed bugs can infest any home and that bed bug infestations are not related to cleanliness and income levels. Anyone can get bed bugs, however, lower income people appear to be more at risk, because of they tend to live in ***higher density, multi-unit dwellings, with a higher turnover.*** Other types of housing/accommodation such hotels, dormitories, and hostels which provide short term stays to large amounts of people and are also struggling with the challenge of bed bug infestations. Despite all the challenges that various types of housing creates, there has not been any standardized or regulated approach to addressing bed bugs at the provincial or national level.

INCREASING INCIDENCE OF BED BUGS

The incidents of bed bugs are increasing world wide. Cities across the world are tracking huge increases in the number of bed bugs reports over the past 10 years:

- *Toronto Public Health reported that they have received a 44 fold increase in requests for services related to bed bugs over a 5 year period.*
- *In 2008, Federation of Metro Tenants' Association began to see such a dramatic increase in the number of bed bug related calls that they started tracking bed bugs calls in a separate category. In 2008, 60% of all pest calls received by the Metro Toronto Tenants' Association were about bed bugs.*

- A large Canadian based pest control company treated 2002 building for bed bugs in 2006, 5079 buildings in 2007, and 6589 buildings in 2008.
- In a survey conducted in 2007, of 163 individuals from non-profit agencies, nearly 90% knew of community members or staff who had bed bugs and nearly 75% had either seen or heard that there were bed bugs in place they work.
- A Canadian pest control company reported a 700% increase in bed bugs in Winnipeg.
- Concerns about the increasing incidence of bed bugs in Ontario are being raised in Ottawa, Hamilton, Windsor, Kingston, London, Huntsville, North Bay, Wasaga Beach, and Owen Sound.
- The number of bed bug phone calls to New York City staff increased from 537 bed bug calls in 2004 to 6,889 calls in 2007 - an increase of 1183% in 3 years.
- A survey of pest control companies in Australia showed a rise from 158 calls in 2000 to 2,464 in 2005 – a 1459% increase in just 5 years.

The overwhelming majority of infestations across the world remain unreported, as the stigma continues to be a barrier and the overwhelming majority of local and national government authorities have not implemented any type of effective tracking and monitoring mechanism. Increasingly scientists and other experts agree that the problem is growing exponentially and will become considerably worse unless there is significant and swift intervention.

INCREASING RISK ON WORK PLACES AND PUBLIC SPACES

Employers and staff in the non-profit sector, and private and public landlords, are dedicating increasing amounts of their time and resources to dealing with bed bugs. Resources are being reallocated from existing budgets and sought for training, policy and procedure development, and protocol responses which prevent and respond to bed bug infestations. Employers and housing providers are eager to learn about and follow best practices; as well as, find low cost services and suppliers for items such as protective equipment, preparation prior to spraying, pest control operators that agree to follow the minimum standards set out by the Ontario Association of Pest Control Operators. **Non-profit employers of community based agencies and housing providers are having to allocate larger amounts of their budgets and staff time and resources towards prevention, identification, and eradication of bed bug infestations in public spaces where services are delivered, staff offices, and in clients' homes. Bed bugs are becoming an occupational health and safety issues for employers.** There have been reports of employees refusing to go into the homes of clients or tenants where bed bugs have been present, resigning from their jobs because of the high risk of associated with bringing bed bugs home to their families or friends, and being off on stress leave as a result of acquiring a bed bug infestation from their workplace.

Organizational Case Study 1:

Abi Possibilities Inc. is a community based organization providing supportive living supports and day programming to adults living with the effects of acquired brain injury. As an organization, we had certainly heard that bed bugs were a problem, but we believed as did many others that

the problem was centered in the downtown Toronto core. As we did not learn about bed bug behaviours, we were not prepared about how to respond until the need was immediate.

The Toronto Community Bed Bug Project stresses the need for broad based community education as a key idea to assist everyone in learning about the early signs and the early responses to the identification of bed bugs in the home. So what is the cost of not educating and supporting community support agencies and through them the often vulnerable citizens they service?

We, at Possibilities were not prepared to deal with a bedbug infestation. Our lack of specific knowledge and supports meant that:

- ***Well trained, long standing employees quit their jobs citing a very rational and real fear of transporting the bed bugs to their homes.*** Most of these employees had young families and weren't able to assume this risk. We needed to replace these employees at significant cost not only through the recruitment process but also through the required training etc.
- ***A significant amount of staff time was directed away from our organizational work towards completing preparation for spraying by pest control operators in our office areas as well as our common spaces.*** This continues today although some physical space improvements have led to a decrease in the frequency we are still finding bed bugs in our office spaces.
- ***We faced for the first time a work stoppage order and waited while the Ministry of Labour completed their investigation.*** This again caused service disruption as we all waited for the decision. Some staff efforts were directed towards contingency planning for our clients in the event that working conditions were to be declared unsafe.
- *Staff who remained employed who shared the fear of transporting the bed bugs to their homes **threw away fabric office chairs that then needed to be quickly replaced.***
- *As we had not received any information from our landlord, we were unable to prepare or assist our clients and families. Clients and families both shared their anger and diminished hope regarding the impact of the bed bugs on their quality of life. Living life with a brain injury is difficult enough. Adding in the presence of bed bugs that disrupt sleep, diminish comfort, disrupt or destroy daily routines and place significant demands on already low financial resources is not conducive to living a life of quality.*
- ***Potential clients for our services refused to join us*** when we shared that the building has bed bugs and what would be required of them should their apartment become infested.
- *Potential **qualified employees also declined offers of employment.***
- *A training organization walked off our site mid training, citing that they could not work in a building known to have bed bugs.*

Early education on issues related to controlling bed bugs at a minimum would:

- *Prevent or decrease staff separations. We have found that increased training and precautionary measures have decreased anxiety among employees significantly.*
- *Allow organizations to educate and inform clients so as to coordinate early intervention.*
- *Allow organizations to connect with service providers who may be able to assist the client base with the very important preparation and laundry.*
- *Allow organizations to set out a policy for responding to clients and families as necessary and to employees, community partners and contractors.*
- *Increase the likelihood for early detection and treatment which minimizes the disruption for everyone.*
- *If necessary, negotiate responsibilities with landlords.*

Organization Case Study 2:

A multi-service east end organization, with about 500 employees, first started hearing about bed bugs about 5 years ago, when clients and members from the community began reporting that they had bed bugs in their homes, and needed assistance to get rid of them. Early on, the organization and its staff did not realize the implications of what this meant, until the number of incidents began increasing and greater numbers of staff began to take bed bugs home.

The first staff to take home bed bugs spoke openly about her situation with other staff and the organization. **She first realized she had bed bugs when she noticed her 3 year old daughter was getting bitten at night.** At first she was not sure what the bites were from, but then realized that these were bed bug bites. She knew that some of the people that she works with in the community had bed bugs in their homes, but she thought she had taken enough precautionary measures to prevent her from taking them home or back to the office. As far as she knew, she had only been in one home with bed bugs. She had spent only minutes in the home, had stood the entire time, and put her bag down for only a split second. After finding out that she now had bed bugs at home, things went from bad to worse. **It took about 6 months to get rid of the bed bugs. She had her house treated by a professional pest control company at least 3 times, cleaned and vacuumed constantly, washed her and her family's clothing repeatedly. She was continuously vigilant looking for signs of bed bugs, and had great difficulty sleeping due to the stress, worry, and anxiety.** She found very little helpful information about what she should be doing to get rid of bed bugs, or what she was missing and why it was taking so long to get rid of the bugs. Finally, an industry representative suggested that she have her car sprayed by a professional pest control company because there may be bed bugs in it. She did, and this seemed to make the difference. The bed bugs went away, for good.

Over the next the next 2 years, the reports of bed bug infestations began increasing from members of the community and clients, who also started coming to meet with staff at organizational sites, with bed bugs on their clothing and personal belongings. The organization began seeing what appeared to be a few arbitrary sightings of bed bugs in one of its service locations. **Within a one year period another three staff who worked in the same department found bed bugs in their homes. Staff morale plummeted. Staff began to worry and some began to panic; each of them began to think that they might be the next one to take bed bugs home.** Rumors started to circulate that in fact other staff had also brought bed bugs home, but because of the stigma and embarrassment, had not told any of their coworkers or supervisors. The organization initially responded by hiring a pest control company each time a staff reported that they had bed bugs at home, or a bed bug was sighted at an organizational location. Furniture had to be replaced - all the cloth and torn vinyl chairs were replaced with plastic ones; and the cloth privacy dividers between staff desks were removed.

Over the course of the next 2 years the organization began to develop a more pro-active and comprehensive response, consisting of:

- a **mandatory reporting policy around bed bugs**, which protects the staff person's privacy, but ensures that the necessary steps be taken to reduce the spread of bed bugs and infestations.
- a **comprehensive, organizational-wide bed bug policy**, with educational information about bed bugs and recommended precautionary measures for staff (e.g. changing, bagging, laundering their clothing as soon as they get home from work).
- community and client fact sheets about bed bugs.

- **a bed bug tracking mechanism** developed by the human resources department, which documents when staff report that they have brought bed bugs home from a work location.
- **a bed bug request for compensation questionnaire** given to staff who request for compensation based on their belief that they have incurred a bed bug infestation as a result of performing their duties at work, assessing work and non-work factors.
- **a letter of agreement attached to the organization's collective agreement**, describing the monetary reimbursement to cover the cost of professional pest control treatment and three days sick leave staff may receive if they are found to be eligible
- **routine bed bug inspections**, including hiring a bed bug sniffing dog, to determine if bed bugs are present in higher risk organizational locations.
- **advocacy and public awareness about bed bugs.**

Between June 2008 and February 2009, 7 staff members in the organization were reimbursed for their pest control treatment costs. These staff work in 5 different geographic locations and program areas within the organization. There is now a high degree of vigilance across the organization for bed bugs, and a greater awareness and knowledge about how to manage bed bugs. While many staff still are concerned about bed bugs, everyone is much more informed, and knowledgeable and many are now taking precautionary measures to reduce their risk.

THE COST OF DOING NOTHING

The cost of responding effectively to a bed bug infestation is expensive. It involves a series of complex and labour intensive interventions. It is much more complicated and time consuming than a simple one time spray by a pest control operator. The longer left alone and untreated, the more the bed bugs will multiply and migrate. When colonies reach a certain size, some of the bed bugs begin to break away and migrate, moving further into adjacent units or traveling on belongings into new spaces, creating multiple colonies. In cases of more severe unit or building infestations often multiple interventions are required before all of the bed bugs are eradicated. A building manager in Winnipeg spent \$260,000 over 4 years to get rid of bed bugs in 73 units of a 373 unit building. Four years later bed bugs continue to infest 40 of the units. A leading expert in Australia estimated that \$100 million has gone into bed bug treatment costs in that country over 5 years.

The cost of a comprehensive bed bug treatment varies greatly and has been documented to be between \$200 to \$2000 depending on the severity of the infestation, the number of treatments required, the extent to which belongings and furniture need to be replaced, the degree to which the work can be done by the household, and the amount of assistance a household can receive from family and friends.

EFFECTIVE BED BUG INTERVENTIONS, EDUCATION, AND COMPREHENSIVE STRATEGY

Before proper interventions can be implemented, people must have access to information to help them identify if they have bed bugs in their homes, early on before a large scale infestation has occurred. The sooner bed bug infestations are identified, the easier and less expense they are to eliminate.

We Need to Know How to Identify a Bed Bug Infestation Early: About 30% of the population reacts to a bed bug bite by developing an itchy red bump on their skin. This is often their first clue that they have an infestation. However, up to 70% of people do not react to bed bugs bites meaning that they are bitten but don't itch or have any sort of reaction on their skin. Because of this people are often unaware that they have bed bugs in their unit.

It is important for people know that, in addition to skin reactions, there are other early identification methods they can use in order to catch bed bug infestations at their initial stages:

- *Black dots (bed bug feces) on sheets, blankets, pillow cases mattresses*
- *Blood stains on sheets, blankets, pillow cases*
- *Dried remains of shed bed bug skin (exoskeletons) on bedding*
- *Dead bugs on beds, in bedding, in the bedroom*

In fact a simple inspection of the bed and bedding for early signs of bed bugs every time we remove our sheets and bedding for washing, or visit a hotel, is an excellent practice.

We Need to Talk Openly About Bed Bugs: *Fear and stigma not only prevent people, but also local agencies and government authorities world-wide to act quickly with public education campaigns, access to practical information and resources, and mandatory protocols and interventions.*

The good news is that the sooner people intervene and begin following comprehensive protocols, the sooner they will be successful in eradicating bed bugs from their homes. *A number of comprehensive protocols have been laid out by Cornell University, University of Kentucky, the State of New York, and the Institute of Clinical Pathology and Research in Australia. They document the essential components of a successful intervention, including:*

- *detailed thorough inspection,*
- *vacuuming all crevices and any objects close to the bed,*
- *emptying and vacuuming dressers and closets,*
- *vacuuming and steam cleaning mattresses,*
- *placing used vacuum bags in double plastic bags before discarding,*
- *washing all linens and clothes in hot water and placing them in a hot dryer for at least 20 minutes,*
- *placing all clean clothing and linen in garbage bags and labeling them,*
- *bagging and labeling any clothing that cannot be immediately washed or that requires dry cleaning,*
- *removing any clutter or unnecessary items so that spraying can be done more effectively,*
- *thoroughly wrapping in plastic and taping securely any beds or upholstered items to be removed (this prevents bed bugs from dropping off in other areas as they are being transported out of a building),*
- *labeling and sealing mattresses and furniture that are to be discarded with a sign indicating that they contain bed bugs,*
- *sealing cracks and crevices and any openings where pipes and wires come into the home,*
- *follow up inspection 2 weeks later to kill bed bugs that have emerged from the eggs.*

TORONTO IS TAKING A LEADERSHIP ROLE

In Toronto, over the past 5 years, various community agencies, non-profit housing providers, staff from City of Toronto divisions, tenants and tenant groups, pest control operators, private landlords, and others impacted by bed

bugs have engaged in community organizing, resource development, advocacy, information dissemination, and education to address the bed bug issue in Toronto. These efforts are described on the in more detailed in this section.

City of Toronto Public Health Bed Bug Project Steering Committee and Working Groups

The Toronto Public Health Bed Bug Project is a multi-stakeholder initiative, established in April 2008, to deal with a growing bed bug infestation in Toronto. **Its mandate is to undertake all of the necessary work with a view to developing a Toronto specific strategy to manage bed bug infestations in Toronto.** Project members include representatives from a variety of City Divisions, housing providers, community agencies, community based support services, community and tenant representatives, Innerscity Legal Services, and the pest control industry.

Over the past year the Toronto Bed Bug Project and its Working Groups:

- developed a comprehensive **collection of educational materials** to meet the diverse needs of sectors in Toronto
- finalize a mechanisms for **tracking and monitoring** bed bug infestations in Toronto
- started to identify vulnerable populations in the community that require community and/or government support to eradicate bed bugs from their homes
- identified and started to promote the development of support services required at both government and community levels
- conducted **research and literature reviews** with a plan to update the general knowledge base about bed bugs
- supported and began to **advocate for initiatives such as the licensing, more effective pest control approaches, and the establishment of social enterprise responses** to bed bugs
- identified and started to advocate for **additional funding** required to implement a comprehensive bed bug strategy in Toronto

The work of the Toronto Bug Project will culminate with the presentation of this Report to the Board of Health in November. Toronto Public Health, City staff, and community stakeholders will continue to work together to tackle the issue of bed bugs through continuing City led forums and working groups.

City of Toronto Public Health Response

The City of Toronto's Public Health Department has been extremely active, over the past year and a half, in putting information, resources, and services in place to respond to growing rates of bed bug infestations. **Toronto Health Connection (416-338-7600) is public health intake line (open 8:30 am to 4:30 pm) that can answer questions provide advice to callers about how to get rid of bed bugs – including landlord and tenant rights.** By calling the Toronto Health Connection a person can also seek assistance by consulting with a Public Health Inspector. In some extreme circumstances, if a landlord or property manager refuses to cooperate **a Public Health Inspector can issue a Health Protection Order (Section 13) to a landlord, tenant, or both to ensure clean up and treatment is completed.**

The following **Fact Sheets have been developed and are available on the City of Toronto Public Health website www.toronto.ca/health/bedbugs.htm.**

- *Bed Bugs*
- *Myths and Facts About Bed Bugs*
- *Top 10 Tips for Landlords to Keep Bed Bugs Away*
- *Bed Bug Information for Tenants*
- *Bed Bug Treatment Protocols for Landlords*
- *Integrated Pest Management to Control Bed Bugs*
- *Submitting an Insect Sample for Identification*
- *Avoiding Bed Bug “Hitch Hikers”*
- *Bed Bug Treatment Preparation*
- *Bed Bug Information for Landlords and Property Managers*
- *Bed Bug Infestations – Rights and Responsibilities*
- *What to do....If You Live In a Building With Bed Bugs*
- *Bed Bug Information for Home Visitors*
- *How to Manage Bed Bug Infested Furniture*
- *Bed Bug Management for Paramedics*
- *Traveling and Bed Bugs: Prevention Tips*
- *Bed Bug Fact Sheets for the Medical Profession*

These fact sheets have been translated into 14 different languages.

Bed Bug Townhalls

On November 14, 2007 the first Bed Bug Town Hall was organized by the advisory sub-committee of the Sherbourne Health Bus with support and financial assistance from 7 non-profit organizations from across Toronto, at WoodGreen Community Services. The purpose of the Town hall was to:

- acknowledge the public health impacts of the bed bug crisis
- gather and exchange bed bug information developed across the non-profit community sector
- identify policy gaps
- identify the resources needed to address the issue across the city
- develop long terms solutions which address the increased rates of bed bug infestations across the city

The Bed Bug Town Hall was attended by over 300 people from the community -, many of those who had been affected by bed bugs and who needed information and support about what to do. This initial Bed Bug Town Hall raised the profile of the bed bug issue amongst members of our communities, the media, the general public and the City.

Since that initial Bed Bug Town Hall was held, **a number of successful Town Halls have followed across the city, in communities such as South Etobicoke, St. James Town, and West Toronto.** These Town Halls have continued to raise the profile of bed bugs and provide people with much need information on how to tackle the challenges associated with eradicating bed bugs in their homes and local neighbourhoods.

Bed Bug Resource Manual

Following the initial Bed Bug Town Hall, WoodGreen Community Services received funding from Toronto Public Health to produce a Bed Bug Resource Manual. **The Bed Bug Resource manual summarizes all of the information that was presented and available at the Bed Bug Town Hall.** It provides information about how to identify bed bugs, what control measure can be put in place, the impact that bed bugs are having on communities and staff of non-profit agencies in Toronto, and how to work with landlords and pest control companies to eradicate bed bugs. **The Resource Manual also outlines some policy recommendations and offers practical and useful tools**, such as tenant notices, vacuuming protocols, fact sheets, flyers, checklists, and organizational policies, which can be used by any community agency, neighbourhood, landlord or tenant group interested in developing effective responses to bed bug infestations. The Resource Manual can be accessed on the following website: www.woodgreen.org.

Community Bed Bug Committee

The Community Bed Bug Committee has been regularly meeting for almost 2 years. The Committee evolved out of the Sherbourne Health Centre's advisory sub-committee following the initial Bed Bug Town Hall in November 2007. **With representation from over 25 community agencies, community groups, tenants, non-profit housing providers, and bed bug related services** the Committee's focus has been to:

- **Share information** about bed bug resources, services, best practices, protocols, and new tools.
- **Receive updates and provide input into community initiatives**, such as the Bed Bug Fund, "Bed Bugs Are Back: Are We Ready" research report, neighbourhood town halls, etc.
- **Receive updates and provide input into the work of the Toronto Bed Bug Project.**
- **Participate in the development of a comprehensive bed bug strategy for Toronto.**
- **Be a resource to those who are impacted by bed bugs** and are looking for information and support.

Many of those who are part of the Community Bed Bug Committee actively participate in the Toronto Bed Bug Project.

Bug and Scrub Social Enterprise

Bug and Scrub is a Social Purpose Enterprise that was created by the Seaton House Men's Shelter within the City of Toronto's Shelter, Support and Housing Administration. Bug and Scrub is funded from the Division's operating budget and the United Way of Greater Toronto and provides responsible, reliable, and cost effective assistance in the preparation of tenant households for bed bug treatment. The enterprise creates real employment opportunities for homeless individuals and assists them in overcoming the barriers that restrict their ability to again employment and reintegrate successfully back into their community.

Bug and Scrub is currently the only bed bug treatment business of its kind in Toronto. It provides much needed support to those who are unable to prepare their units before effective pest control measures can take place. The support is above and beyond that provided by traditional pest management companies. Bug and Scrub has been an integral part of successful case management approaches for vulnerable people with bed bug infestations and it is important that initiatives like this be supported and expanded to address the resurgence of bed bugs in Toronto.

Habitat Services and WoodGreen Community Services Bed Bug Project

In June 2008, the City of Toronto and the Ministry of Health funded the Habitat Services/WoodGreen Bed Bug Tenant Education, Inspection, and Response Project. The goal of the project was to prevent and reduce the spread of bed bugs in boarding homes funded by Habitat Services in Toronto through tenant education, screening, risk assessment, intervention, and follow-up monitoring. **Over 1500 bed bug inspections were completed and training held for 300 tenants and staff.**

As part of the Project **Habitat and WoodGreen worked with Public Interest** to develop two **comprehensive bed bug resources:**

- **“Bed Bug Are Back: Are We Ready?”** a research report that brings together our local Toronto experience and current world wide knowledge and understanding of bed bugs.
- **“All About Bed Bugs”** an information guide for tenants, landlords, community groups, and anyone looking for simple and straightforward information about bed bugs.

These resources are available on the following websites: www.woodgreen.org and www.publicinterest.ca.

Bed Bug Fund - United Way of Greater Toronto and the Sprott Foundation

In 2009, WoodGreen Community Services received a small grant to financially assist people in Toronto who have limited financial resources, to get rid of bed bugs in their homes. **The total amount of the fund was \$8,000.** The fund was successfully **accessed by 9 low income individuals with severe infestations and used to treat 13 units in the community.** The funding was granted on a first come, first serve basis to eligible applicants, and covered a comprehensive integrated pest management approach including steaming, vacuuming, laundry, sealing of units, and pest control spray. **The funding came from the United Way of Greater Toronto and the Sprott Foundation.** To be eligible for the Fund individuals had to be either receiving social assistance and not be eligible for additional Community Start Up Funding; or, considered low income, based on the low income cut off levels used by the Rent Bank Service in Toronto. Those who met the income eligibility also had to be working with a case manager/worker from a non-profit organization who could help them with the application process and offer support throughout the treatment process.

Over the 3 months during which the Fund was accessed, WoodGreen staff spoke with over 75 individuals. Most of them had been living with bed bugs for months, and in some cases even years, and had made a variety of unsuccessful attempts to get rid of them. Some had informed their landlords of the infestations, but many had not. Overwhelmingly, the individuals who called were looking for emotional support, information, and resources related to their infestations. They wanted to know what they could do to successfully get rid of bed bugs. Many did not know that their landlords had a responsibility under the Residential Tenancies Act to keep their properties “pest free” and were obligated to respond by hiring a pest control treatment company. Those receiving social assistance were not aware that they could be eligible for Community Start Up Funds to pay help with preparation and furniture replacement. **Over this same time period, WoodGreen staff also spoke with over 45 community agencies calling on behalf of their clients who were struggling with ongoing bed bug infestations.**

Toronto Bed Bug Fund

In April 2009, City Council approved a one time request \$75,000 to assist people with bed bugs. Only people who qualify can access this fund through Toronto Public Health. The fund is available to assist vulnerable and low income adults, who do not qualify for Toronto Employment and Social Services or the Ontario Disability Support Program to purchase services to prepare their residences for bed bug pesticide treatment.

Bed Bug Health Survey

In December of 2008, the Health Issues Working Group (of the Toronto Bed Bug Project) completed the ethical review process to conduct a health survey of individuals who access the Sherbourne Health Bus. Over a two week period individuals were invited to participate in the bed bug survey. Two diverse bus stop locations in the downtown core were selected as recruitment sites for this study. The number of participants was determined from reviewing literature asserting that interviews with 30 participants is typically sufficient to achieve theoretical saturation. All interviews were completed by February 2009. The interviews were then transcribed and the responses are currently being coded to determine the themes and trends for qualitative analysis.

Toronto Community Housing Pest Management Strategy

Toronto Community Housing is currently in the roll out stages of its Pest Management Strategy and Program. Implementation of the Program has further reinforced for staff that approaches to bed bug management must be customized to reflect the unique qualities of each building community. Staff have been working closely with tenants, Public Health and other supportive agencies to prepare comprehensive pest reduction plans, tailored to individual tenant needs and abilities.

In these preliminary stages of program implementation, Toronto Community Housing has found, that where bed bug management plans and protocols were followed, there have been corresponding rates of success in reducing pest infestations. Sealing of unit cracks and crevices has been found to be a very successful method of reducing the spread of bed bugs to neighbouring units. Where units have been correctly sealed, staff have noticed an up to 60% decrease in infestation rates.

Toronto Community Housing's focus is at present, to build front-line staff capacity to correctly apply pest management program and protocol to buildings. Each building superintendent plays a key role in, first, identifying and addressing bed bug infestations as appropriate to the nuances of the building and tenant population. Secondly, superintendents are a first point of contact for tenants, and have the capacity to provide significant outreach and educational support to tenants in their unit preparations and treatment. Superintendents are currently being trained in bed bug management protocols, as well as methods for identifying and addressing bed bug infestations. Staff are also being provided with firm knowledge of the means by which they may assist tenants and link them, where appropriate, to community resources.

The challenges Toronto Community Housing has observed to successfully managing bed bug infestations are not dissimilar from those experienced by other organizations. There is a marked need for more supportive services for vulnerable tenants and seniors. There are also no straightforward means for continuously monitoring individuals in need of ongoing attention and support. Like many agencies, Toronto Community Housing would also benefit from

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additional resources to support intensive case management of vulnerable tenants, as well as tenant economic development opportunities associated with bed bug management and unit preparation.

BED BUG RESOURCES – WHERE TO GO FOR HELP

Bed bug companies and organizations that assist people to effectively get rid of bed bugs have slowly started to develop. These companies and organizations, both for profit and not for profit, offer a variety of services to help people with bed bug infestations, including picking up and laundering washable belongings, inspecting, de-cluttering, cleaning, preparation, steaming, sealing and caulking, etc. The cost and array of services provided vary from one organization to the next. While we cannot recommend which companies and organizations to hire, we have listed some examples.

Some Suggested Decluttering, Cleaning, and Preparation Services		
Name of Service	Contact Information	Details
<i>Fresh Start</i>	416-504-4262	<i>Cleaning and bed bug preparation services provided west of Yonge Street</i>
<i>Visiting Homemakers Association</i>	416-489-2500	<i>Cleaning and bed bug preparation services provided east of Yonge Street</i>
<i>Extreme Clean</i>	416-504-4262	<i>Cleaning and bed bug preparation services provided east of Yonge Street</i>
<i>Bug and Scrub</i>	416-392-5572	<i>Comprehensive social enterprise bed bug intervention services, including caulking and sealing of units, cleaning, laundry, and steaming</i>
<i>Earth Safe Canada</i>	905-953-2784 or 866-723-3313	<i>Bed Bug Cleaning Service: vacuuming, steam cleaning, laundry, and more</i>
<i>Greenleaf</i>	416-998-9473	<i>Inspections, bed bug preparation & laundry service, heat and steam treatment, educational seminars, and bed bug protocol development</i>
<i>Premium Bed Bug Prep</i>	416-916-2229	<i>Compassionately helping clients with all their bed bug needs</i>

Some Suggested Laundry Services – pick up laundry services for bed bugs

Company Name	Contact Information	Details
Royal Forest Specialty Laundry Services Toronto Bugs 'R' Gone service	Dan Morgan, President – owner 1-866-698-FOLD (3653) 3416 Bathurst Street Toronto, Ontario M6A 2C2	Pick up and delivery Clothes/linens - bagged and tagged Cost – government agency rates
The Salvation Army's Gateway Linens	Jay Hockaday 199 Church Toronto, ON (416) 362-0003	\$2.50 per pound – pick-up and return the next day (average 100- 150 pounds per person) will do any linen – stuffed animals, pillows, coats, etc. will rebag all items in clear plastic bags 24 hour turn around referrals only from agencies or landlords (at present)

Limited financial resources are available to people to help with the cost of bed bug eradication services. If someone is receiving financial assistance from Ontario Works or the Ontario Disability Support Program they may qualify for Community Start Up Benefits. Some services take into consideration the income levels of those who hire them, when determining how much to charge; and others are free for people who are 55 years of age or older.

Over the past five years, many community support services, consisting of case management organizations, mental health agencies, community health centres, and non profit housing providers in Toronto have stepped up to fill a resource and service gap, providing information to clients and members of the community about bed bugs and what to do if you have them, helping them to prepare their units prior to pest control treatment; coordinating preparation, cleaning, de-cluttering, laundry and pest control treatment services; supporting clients and community members through the treatment process; and providing the necessary and extremely vital emotional support to help them get through it. As well, community support services have worked with members of their communities to organize education sessions, town halls, and produce resource materials.

ANECDOTAL STORIES FROM THOSE WHO HAD BED BUGS

Reports from tenants and non-profit organizations highlight the stress that individuals and families experience - not only from the bed bugs themselves, but also from the exhaustive and elaborate preparation and treatment protocols necessary to eradicate infestations. In many instances, it is not only the financial burden that affects individuals/families with bed bugs – but also the physical disruption, anxiety, stress, and fear in peoples' lives. Tenants are forced to live with their belongings in bags for at least 4 weeks and sometimes longer – if additional treatments are required. Many of the tenants – particularly seniors, who live in very small units are unable to adapt and/or cope with the disruption and chaos in their homes. They have been reported to unpack their items prematurely, mop their floors too early (wiping away the pesticide) and refuse subsequent treatments. Concerns have also been noted by staff that due to the complicated and disruptive nature of the preparation protocol, even if help is provided, people may be discouraged from reporting bed bugs.

Below are stories from two people who have had bed bugs interviewed for the “**Bed Bugs Are Back: Are We Ready?**” research report. They describe first hand the challenges that those with bed bugs struggle through.

Bed Bug Sufferer Profiles

Profile 1: Female, middle-income household

“It took me a awhile before I found out that I had bed bugs. The reason for this is that my bites **kept on getting misdiagnosed for months by doctors**. I just kept on getting these welts on me like swollen hives, and went to my doctor who told me it was hives, then fleas. I could not understand how she could have thought that it was fleas we don’t even have pets. Then I went to a dermatologist and asked them what it was. They told me that they were not sure but they knew that it was an insect bite and prescribed some cortisone cream. This went on for a while until someone at work gave me a number to call. I called the number and the man came over to my house and told me that I had bed bugs. I was devastated. I mean me, I had bed bugs. **People think that you are dirty or poor and I was not either of those**. I was shocked and went into a downward spiral of fear, loss, and anger. Fear because I was afraid of having them and knew they were so hard to get rid of, loss because it is difficult to have to throw things away, and anger because I wish that I had found out sooner so that the infestation did not have to get as bad as it did. **I felt scared and ashamed. I mean who do you tell?** How were people going to react? I remember taking my clothes to clean at the laundromat and seeing a friend of mine and she was asking me what I was doing there, **so I told her that I had bed bugs and she flinched away from me in disgust, like “eww.”** I mean this was a friend who was treating me like a leper. Bed bugs make you become social lepers. **I told my family not to come over to my house; we did not have anyone come over**. After the laundromat incident I was very selective about who I told; I did not need another negative reaction like that – I could not handle it. I honestly think that I become mentally unhealthy. **I lost focus in work, I could not think straight, and I become so emotional thinking and wondering why and how this could happen to me. For me this was very devastating; I could not sleep. I was afraid to sleep in my own bed. I felt vulnerable and alone and angry that I managed to bring them home. I did not know how to communicate with my husband about this, I was embarrassed. It totally disrupted my life. Just thinking back to this is starting to make me itch....I can’t talk about this anymore.”**

Profile 2: Male, middle-income household

“I know that I got bed bugs from my former workplace. Despite their continuous efforts to prevent bed bugs, it was like they were playing a losing battle with the little critters. **I took what I thought were all the precautionary methods not to come in contact with them. Other people from work had brought them home and I was determined that I would not be another victim**. Needless to say, one morning I woke up and found a bite that was itchy on my face. I immediately knew what it was – after all, I have heard all the horror stories. I checked my mattress and sheets and found blood spots and some bed bugs.

Even though I did have a familiarity with bed bugs from work, I must admit that I still became overwhelmed with the prospect of actually having them. I mean, I had think about what having bed bugs meant to my life and what I would have to do to get rid of them. For me, this was very overwhelming and I became extremely distraught. Bed bugs really do change your life, how you live, and how others see you. **Think about this, I had to spend over \$4,000,**

throw out my furniture and other personal effects ... in many ways you start to lose yourself when you get bed bugs. This is something that is very hard for people to understand.

Bed bugs for me also became very time consuming and totally interrupted my life. I had to take over three days off from work in order to prep my apartment just for the spraying. I had to do extra laundry, extra cleaning. **Most importantly, I became so isolated.** To be honest, until you go through it, you have not idea just how horrifying it really is. It is just natural for you to become paranoid; **you lose sleep, you end up dreaming and thinking about bed bugs – they just consume every fiber of your being. I had to isolate myself from my family and friends; I did not want anyone coming over. I was too afraid that they would bring bed bugs home.** This was very difficult for me because you need someone to talk to because it is awful ... very awful. There were many days that I did not see an end in sight. I became stressed. I lost focused, and I was constantly afraid that I was not being diligent enough about the bed bugs and that they were going to be in my life forever. To have this constantly preoccupying your thoughts can be very depressing. In the end, I just could no longer take it. **After multiple spraying and not real tangible results, I just decided to move. I could not longer live like a prisoner in my own home; it was just too hard for me.** People need to understand that, yes, there is the financial toll that bed bugs have your life – you know, the money you spend and the time you lose from work. But it goes way beyond that; bed bugs also have a psychological and emotional toil. That, as well, you can always buy a new couch but you can't always buy peace of mind when you have bed bugs."

Forward Thinking: Challenges in Developing a Systemic Response to Bed Bugs

Broad Based Education

Current research and experience clearly demonstrates the value of broad based education, with a focus on early identification, when it comes to bed bugs. Early identification and intervention minimizes the impact on and affected individual's health, as well as the increased demand for physical, financial and social resources. Additionally, landlords and property managers require education on what a proper bedbug treatment and preparation looks like. With proper education and access to information, landlords and property managers can ensure that they receive the services they asked for and pay for, which is critical in terms of ensuring that long term control of bedbugs.

Education also needs to address the issue of the ineffectiveness of partial pest control treatments. Partial treatments are a waste of resources and in the end additional financial, physical, and human resources will be required to eradication infestations which are not treated property the first time around.

Broad based education about the complexity of bedbugs is required generally to facilitate early identification. Consistent and proper identification of the presence of bed bug infestations is the first step in creating response mechanisms that are systemic.

Resource Development

Bedbugs present a significant and often overwhelming situation for vulnerable individuals and families. The complex preparation needs for effective treatment over many months is beyond the scope of many. Without appropriate resources that assist with proper and effective preparation for treatment and retreatment, bed bug populations continue to grow and impact the health and well being of those affected. We need to expand our current systems of providing access to funds to and resources to purchase household replacement items. Often existing funds cannot be directed towards the shipping costs of furniture including mattresses, so many may resort to sleeping on the floor or choosing to sleep in the affected bed and have their sleep constantly disrupted.

Additional support for individuals dealing with the health impacts that bed bugs have is also needed. Given the stigma that often accompanies the presence of a bed bug infestation, individuals and families are often reluctant to share that they have bed bugs with others and may withdraw from the very supports that can be of assistance to them. It is important that community agencies that support vulnerable adults and families continue to play a role in removing stigma and connecting vulnerable persons with resources that are needed.

Central Access

As the extent of this problem is beginning to be understood in the city of Toronto, services and resources are being developed at many levels. Resource development at this time is not being supported and kept centrally – as a result, comprehensive bed bug resources and information for the average Torontonians, are difficult to access. Coordinating and centralizing information about resources, as these are developed would ensure access to up to date, accurate services and methods, and minimize duplication. Central access would also facilitate the development of a network to ensure that best practices are shared and replicated as they are developed.

Currently, when people find bedbugs in their home, many do not know who to call to begin preparation activities to support an effective chemical pest control treatment. As the spectrum of services required vary (from laundry, preparation, steaming, sealing and caulking), the development of a central access point would better ensure comprehensive and effective responses to infestations.

Tracking and Monitoring

The tracking and monitoring of bed bugs is essential to provide evidence, inform research, and develop best practices and effective responses. It is vital that city-wide tracking and monitoring mechanisms that capture bed bug infestations, their patterns of movement, and the degree to which bed bugs may be developing a resistance to current chemical treatment, be implemented. Effective tracking and monitoring mechanisms that inform our bed bug educational strategies within our local communities and build the capacities of the resource required, are necessary to reduce the impact of bed bugs on our local neighbourhoods.

Legislative Changes

Changes within our existing pest control and property management strategies and standards are need to include best practices in regards to block treatments, sealing and caulking of spaces, and vacuuming/steaming techniques. Research is showing that bed bug populations will scatter when threatened. This very real ability to migrate quickly promotes the sustainability and growth of bed bug populations. Requirements to complete dusting during renovations of housing units would assist in creating a chemical barrier towards the migration of bedbug populations.

Best practices related to waste removal are also required to gain more control over the spread of bedbugs. The development of standards and routines involving affected waste from clothing and linens, to mattresses and couches, and renovation waste of drywall, plaster and wood are required in all stages of waste removal – from within a residence, waiting areas for collection, collection services and recycling and waste areas.

Appendix 1

DETAILED RECOMMENDATIONS:

We are uniquely positioned in Toronto to develop a comprehensive bed bug strategy that prevents wide scale bed bug infestations and reduces the high costs of eradicating untreated bed bug infestations. We are also well positioned to continue initiating innovative, ground breaking, and comprehensive responses to bed bugs at a municipal and community level; and sharing information and coordinating our learnings with other municipalities in Ontario and across North America. The following recommendations outline a comprehensive multi-faceted response to addressing bed bugs within Toronto.

These recommendations outline a strategy for addressing the issue and managing bed bugs in the City of Toronto through:

- *Education and Outreach*
- *Community Based Responses*
- *Public Messaging*
- *Legislative Review*
- *Tracking and Monitoring*
- *Control Responses*
- *Health Responses*
- *Organizational Responses*
- *Research/Best Practices*
- *Stakeholder/Partnership Involvement*

It is recommended that:

1. The City of Toronto, through Toronto Public Health, continue to lead and implement a Bed Bug action Strategy in Toronto.

Given that bed bugs are complex, requiring multi-faceted interventions, resources from a variety of sources, input from a variety of stakeholders and partners, the City of Toronto, through Toronto Public Health, continue to provide leadership and support to a Bed Bug Action Strategy that is cross-sectoral and includes a variety of stakeholders, with representation from a variety of City divisions, community agencies, pest control industry operators, landlord and tenant groups, links to provincial associations and Ministries.

2. The City of Toronto and each City Division (where applicable) take a lead role in distributing and sharing information about bed bugs across Ontario and North America through the development of a bed bug website and through existing relationships with provincial, national, international bodies, and associations.

The City of Toronto through its various divisions must take a lead role in the dialogue and information sharing process with provincial bodies and associations by posting and distributing recently developed materials about bed bugs (Toronto Public Health Bed Bug fact sheets, WoodGreen's Bed Bug Resource Manual, "Bed Bugs are Back: Are We Ready?" Research Report, All About Bed Bugs: An Information Guide). Associations should include:

2.1 Ontario Municipal Social Services Association

- 2.2 *Boards of Health in Ontario, the Association of Health Centres of Ontario, Toronto Central Health Integrated Network, Central Local Health Integrated Network*
- 2.3 *Toronto District School Board and Toronto Separate School Board.*
- 2.4 *City run and City funded child care centres*
- 2.5 *Private landlords and social housing providers across the Province*
- 2.6 *Toronto Public Libraries*
- 2.7 *Greater Toronto Hotel Association and Tourism Toronto*
- 2.8 *City Councillors and Toronto Members of Provincial and Federal Parliament*
- 2.9 *Association of Municipalities of Ontario*

3. The City of Toronto develop and initiate a broad based public messaging campaign.

Given that the early identification of bed bugs, results in reduced financial costs and emotional stress, the City of Toronto lead in the development and implementation of a broad based public messaging campaign. This would include the distribution of information to the public that reduces the social stigma associated with bed bugs and lets people know that bed bugs are back, what they look like, how to identify them, and what to do if you find them in your home. It is further recommended that the City of Toronto, partner with others at the provincial and federal level to help ensure the information is circulated across the provinces and country.

4. The City of Toronto include information articles about bugs city in “Our Toronto”.

5. The City of Toronto seek the support of other funders, such as the Local Health Integration Networks across the province including the Toronto Central, Central East, Central West, Central, Mississauga Halton Local Health Integration Networks), Ministry of Health, foundations, and private donors to support community-based responses which address the financial, social, and emotional issues related to bed bug infestations:

- 5.1 *Coordination and information dissemination about bed bug services, resources, and initiatives in Toronto, across the province and world-wide.*
- 5.2 *Support to ensure the capacity building of various geographic, linguistic, and vulnerable communities to respond to existing and/or spreading bed bug infestations in Toronto.*
- 5.3 *Increased resources, and ongoing training for not for profit bed bug preparation services and extreme clean services to help that low income and/or vulnerable individuals.*
- 5.4 *Allocation of resources for landlord and tenant education*
- 5.5 *Creation of a Bed Bug Toll Free Hotline which provides emotional support, tracking, and advocacy services*
- 5.6 *Establishment of a recurring Bed Bug Fund for low income vulnerable.*
- 5.7 *Fund Social Enterprise responses for bed bugs services (e.g. laundry, education, building audits, prep services, etc.)*
- 5.8 *Fund multi-disciplinary teams (made up of public health inspectors, public health nurses, mental health services, social workers, prep services) to support vulnerable adults.*

6. The City of Toronto develop and implement a bed bug education and outreach strategy.

7. The City of Toronto research and develop legislative options to control and respond to bed bug infestations related to issues such as disposal of infested furniture, clothing donation re-use, sealing and caulking of units, and pest control industry standards.

8. The City of Toronto develop and implement tracking and monitoring mechanisms to monitor the prevalence of bed bugs:

- 8.1 *Implement a central tracking system to determine the annual prevalence of bed bugs in Toronto.*
- 8.2 *Monitor the frequency that Community Start Up Benefits are accessed from Toronto Employment and Social Services and Ontario Disability Support Program to support bed bug eradication.*
- 8.3 *Partner with the Ontario Association of Pest Control Operators to develop regular tracking mechanisms.*
- 8.4 *Work with the Social Housing Services Corporation and private landlords to track the prevalence of bed bugs.*
- 8.5 *Work with City funded services to develop tracking mechanism to determine the prevalence of bed bugs reported by members of the community and agency staff.*

9. The City of Toronto develop best practices that support City services and City funded agencies to identifying and manage infestations in public and work spaces, as well as address staff issues such as work refusal, labour/management, legal and liability issues.

10. The City of Toronto continue to work with relevant stakeholders to develop and implement community strategies aimed at controlling bed bugs which are based on best practices, which include:

- 10.1 *A code of ethics developed in partnership with the Ontario Association of Pest Control Operators.*
- 10.2 *Integrated Pest Management Standards that include mattress enclosures, sealing and caulking of spaces, vacuuming and steaming techniques.*
- 10.3 *Training tools for all private and not for profit landlords and their staff.*
- 10.4 *Amendments to the building code to incorporate Integrated Pest Management Practices, such as the sealing of units.*

11. The City of Toronto work with academic institutions, community partners and other stakeholders to research the health impact of bed bugs.

STRUCTURAL PEST MANAGEMENT ASSOCIATION OF ONTARIO

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The following document was prepared by the Structural Pest Management Association of Ontario and is a collaboration of industry professionals for the purpose of setting industry standards for the treatment of bed bugs in multi unit buildings. The document contains “Best Practices” and is a minimum standard guideline.

Project Goals: *To allow the Structural Pest Management industry the opportunity to establish a set of guidelines for the treatment of bed bugs in multi-unit dwellings and to establish minimum standards of treatment for the industry to follow. To have the City of Toronto adopt these guidelines and be used when the city procures pest management.*

*** Pest Management Professional further to be referred to as PMP**

PROTOCOLS

Inspection: *Before any pesticide is discharged for the control of bed bugs an inspection must be done to determine whether there are in fact bed bugs. The inspection stops when bed bugs are confirmed. If the PMP is required to utilize any of his/her equipment during the inspection then it becomes a treatment and should be charged accordingly. It is recommended that all units surrounding the infested one be inspected and treated if necessary.*

Treatment: *The customer must be held accountable for the preparation of the unit. In order to perform a proper treatment the unit must be properly prepared as per the instructions of the pest management company. It must be understood that potentially, an improperly treated unit can be as detrimental as no treatment at all.*

Mechanical Devices:

Vacuum cleaners should be incorporated in all treatments to remove openly evident live bugs, exoskeletons and any fecal matter. Vacuuming can also capture unseen instars and eggs.

Residual Insecticides:

Dusts: Dusting is to be done behind switch plates, duplex receptacle plates, cable wire plates etc. Dusting also to be done in gaps in the base boards and other accessible voids. It is not the responsibility of the technician to remove any plugs in the receptacle and due to liability issues with computers etc. the PMP will not attempt to remove and dust behind any receptacle that appliances are plugged into. This is part of the tenant's preparation. In cases where the unit is heavily infested with bed bugs, small ¼" holes will be drilled through the walls close to the baseboards and the wall voids will be dusted. It is recommended that a minimum of 3 holes be drilled per wall. The decision of which dust formulation and active ingredient to use will be at the discretion of the applicator and in accordance to the product label.

Spray Solutions: Residual insecticides will be used to spray all baseboards, door frames, bed frames, the underside of the box spring, shelving, furniture (where possible) and other areas within the unit. The decision of which residual insecticide to use will be at the discretion of the applicator and in accordance to the product label.

Aerosols:

The use of Pyrethroid aerosols should be used if there are visible signs of bed bugs. Since this is a contact insecticide it serves no purpose if not sprayed directly on the bug. The use of Pyrethroid aerosols as a flushing agent can be used to find activity in areas where activity is thought to be but no live evidence is found. It is not recommended that this be used in wall voids as the pyrethrum can flush the bed bug further into the walls and perhaps into adjoining units.

Follow-Up Service:

It is recommended that at least 1 follow-up service be done 2 – 3 weeks after initial service. The follow-up service will consist of an inspection, spot treatment and if necessary a full retreat. The follow-up service will also consist of a baseboard perimeter treatment throughout the unit. Tenant is to prepare as if full treatment will be done.

Length of Time to Treat:

The length of time it takes to treat a unit for bed bugs varies from unit to unit. Treating a 1 bedroom unit with 3 beds and 3 sofas may take longer than a vacant 3 bedroom unit. You cannot put a time interval on the treatment. If the technician is following this protocol, it will take as long as it takes.

Reporting:

The PMP should fill out a report on all units treated stating the unit number, condition of the unit, bed bug activity found and recommendations.

Pricing:

The industry agrees that the price to treat 1 unit, based on the above protocols should be a minimum of \$75.00 for the PCO's "Preferred Customers" which is based on volume.

Exceeding the Standard:

Steam Treatment: *If budget permits we recommend that steam treatment be incorporated into the bed bug treatment. The mattress and box spring should be steamed and sofa etc. as the PMP sees fit. This is a time consuming process but steam kills all stages of bed bugs.*

Mattress Encasements: *Mattress and box spring covers specifically designed to exclude bed bugs should be used to salvage the mattress and box spring and protect them from future infestations.*

Recommendations: *Educating the tenant is the key to controlling bed bug infestation. It is important that the tenant know how serious this problem is and what to do and what not to do when they discover bed bugs. Things like destroying a mattress before discarding it so it won't be brought back in by another tenant is information the tenant needs. To help mitigate further infestation in the building it is recommended that the landlord supply the tenant with mattress bags for disposal.*

Considerations: *It must be determined what the client's priorities are, full service or budget. If the unit is not 100% prepared does the client want us to walk away until properly prepared or does the client want us to treat what we can. The client must take ownership of this and decide how the PMP is to proceed. Please note that it the industry's recommendation that the unit not be partially treated because of lack of preparation. It is in the tenant's best interest to prepare properly. If a partial treatment is done, the second follow-up service will be compromised.*

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Appendix 3

Bed Bug Treatment Preparation

The Toronto Bed Bug Project in conjunction with the Structural Pest management Association of Ontario and its members has developed a set of guidelines for the treatment of bed bugs in multiunit dwellings for Pest Management Professionals (PMP).

Before the treatment begins, all occupants, including pets, must leave the unit and not enter for a minimum of 3 - 4 hours after the technician arrives. Aquariums may remain in place as long as the filtrations and aeration systems are turned off and the tank is adequately covered. Filtration and aeration equipment should be turned back on 6 hours after treatment. Anyone who is pregnant or has allergies or asthma should take the necessary precautions.

Before treatment:

- All clutter should be removed from the unit.
- If possible, steam clean, wet vacuum or shampoo any carpeting and furnishings.
- Vacuum the mattress thoroughly including the crevices, handles and buttons.
- Vacuum bed frame, baseboards and objects/flooring close to bed.
- Discard the vacuum bag (placed in tightly sealed garbage bag before disposal).
- Remove all clothing from dressers and place in clean plastic bags or plastic totes.
- Bookshelves, nightstands or other furniture in the immediate area must be emptied so that the technician can spray the undersides of the furniture.
- Place all items in tightly sealed garbage bags and leave them in the room to be treated.

Laundering

All clothing items should be placed in garbage bags, sealed and emptied directly into the washing machine. When the laundering cycles are complete, the clean laundry should be placed in new clear garbage bags and sealed during the treatment process. The garbage bags used for transporting clothing articles to the laundry room should be discarded outside the premise as they may contain bed bugs. For severe infestations, water soluble bags should be used if possible to collect sheets and clothing and put directly into the wash. It is important to **launder items** using **hot water** as cold water will not kill bed bugs or their eggs. All clean clothes should be put in the dryer on high for a minimum of 20 minutes. Some clothing may require dry cleaning.

Beds

All bedding must be removed before the technician arrives. Soiled bedding should be washed in hot water (separate from all other laundry) or dry cleaned before or soon after the treatment to avoid resurgence of bed bugs. Pillows should also be placed in the dryer on high heat for a minimum of 20 minutes. After treatment, bed skirts should be avoided; bedding tucked in tightly; and bed kept a few inches away from the wall.

Baby cribs

All linen should be laundered. All toys should be washed in soapy hot water and stuffed toys should be placed in dryer on high heat for 20 minutes.

Dressers and night tables

All contents of dressers are to be placed in garbage bags and placed in the dryer cycle on hot for a minimum of 20 minutes. All articles on top of dresser are to be removed and placed in plastic bags or plastic totes. Bookshelves, nightstands or other furniture in the immediate area must be emptied so that the technician can spray the undersides of the furniture. Furniture and items should be moved at least 30 cm (12 inches) away from the walls to facilitate spraying of the baseboards. Shelving and drawers should be clean.

Closets

All closets including linen closets are to be emptied. Clean articles should be placed in the dryer on high heat for a minimum of 20 minutes. All soiled articles need to be washed in hot water and then dried in high heat. Laundromat dryers may have lower heat settings and may not heat up to 60o C so the full cycle should be used.

Sofas and chairs

All chair covers, throws and pillows must be laundered prior to treatment.

Disposal of furniture

Discarding beds, bedding, and furniture is NOT a sound approach to bed bug control as they can be easily re-infested. Furniture that is infested with bed bugs that cannot be salvaged needs to be disposed of in a manner that will prevent the further spread of bed bugs. In the process of removing a piece of furniture, bed bugs can escape into hallways and make their way into new apartments spreading the problem to new areas.

If you decide to throw out bed bug infested furniture:

- *Take apart, deface or damage the piece of furniture to ensure it cannot be reused.*
- *Mattresses should be slashed or otherwise damaged to make it unusable and wrapped.*
- *Wrap the furniture in plastic so bed bugs cannot escape—this should be done in the unit before the mattress is removed.*
- *Put in trash shortly before pick-up, so it doesn't sit for a long time.*

Sample Preparation Check List for Tenants and Property Management

Preparation Item	Before Technician Arrives			Completed		
	Yes	No	N/A	Yes	No	N/A
Bed						
Wash and dry linen including bed skirts (hot cycles)						
Wash and dry pillow cases (hot cycles)						
Pillows – place in dryer then bag and seal						
Comforter - wash and place in sealed bag						
Comforter - wash and place in sealed bag						
Preparation Item	Before Technician Arrives			Completed		
Furniture	Yes	No	N/A	Yes	No	N/A
Nightstands – place contents in sealed bag						
Dressers- launder & place contents in sealed bag						
Shelves – place contents in sealed bag						
Preparation Item	Before Technician Arrives			Completed		
Other Areas	Yes	No	N/A	Yes	No	N/A
Closet – launder & lace contents in sealed bag or container						
Reduce Clutter – place items in sealed container						
Furniture moved 12 inches away from walls to facilitate baseboard treatment.						

*** Keep items not in use in bags until the unit has been deemed pest free.**

Please write down where you have seen evidence of bed bugs:

Bed Bug Treatment Protocols for Landlords

The Toronto Bed Bug Project in conjunction with the Structural Pest Management Association and its members has developed a set of “Best Practices” and is a minimum standard guideline for the treatment of bed bugs in multi-unit dwellings for Pest Management Professionals (PMP).

Inspection

Before any treatment plan has been initiated, a pre-inspection must be done to determine whether there are bed bugs. The inspection stops when bed bugs are confirmed. If the Pest Management Professional is required to utilize any equipment during the inspection then it becomes part of the treatment and should be charged accordingly. It is recommended that all units surrounding the infested one be inspected as well to determine if an infestation exists. All infested units should be treated together.

Preparation of unit

The customer is accountable for the preparation of the unit. In order to perform a proper treatment, the unit must be prepared according to the instructions of the pest management company. The client should be informed that treatment may fail if the unit is not prepared properly and the PMP should not discharge any chemicals. See Bed Bug Preparation Form.

Treatment

Vacuum cleaners should be used in all treatments to remove all bed bugs (both dead and alive) and any fecal matter and eggs.

Residual insecticides

Dusting should be done behind switch plates, duplex receptacle plates, cable wire plates etc. Dusting should also be done in gaps in the base boards and other accessible voids. Due to liability issues, it is not the responsibility of the technician to remove any plugs in the receptacle or any receptacle plates. In cases where the unit is heavily infested with bed bugs, where applicable, small ¼ inch holes will be drilled through the walls close to the baseboards and the wall voids will be dusted. It is recommended that a minimum of 3 holes be drilled per wall. PMP will immediately caulk these holes following treatment. Residual insecticides will be used to spray all baseboards, door frames, bed frames, the underside of the box spring, shelving, furniture (where possible) and other areas within the unit. The choice of products used is at the discretion of the applicator/PMP and in accordance to the product label.

Aerosols

The use of Pyrethroid aerosols should not be used unless there are visible signs of bed bugs. Since this is a contact insecticide it serves no purpose if not sprayed directly on the bug. The use of Pyrethroid aerosols can be used as a flushing agent to find suspected areas of activity where no live evidence is found. It is

not recommended that this be used in wall voids as the pyrethrum can flush the bed bug further into the walls and perhaps into adjoining units.

Follow-up service

It is recommended that at least one follow-up service be done 2 – 3 weeks after initial service. The follow-up service will consist of an inspection, spot treatment and if necessary a full treatment. The follow-up service will also consist of a baseboard perimeter treatment throughout the unit. The client will need to prepare the unit again if a re-treatment is required.

Length of time for treatment

The length of time it takes to treat a unit for bed bugs varies on size of unit, amount of furnishings to be treated and severity of infestation. Approximate treatment times vary from 30 - 45 minutes for a bachelor apartment or a student resident room to more than 3-4 hours or more.

Reporting

The PMP should fill out a report on all units treated stating the unit number, condition of the unit, bed bug activity found and follow-up on recommendations for additional treatment/s if necessary.

Steam treatment

If budget permits, steam treatment is recommended for treatment of bed bugs. The mattress and box spring and sofa should also be steamed. This is a time consuming process, but steam kills all stages of bed bugs.

Mattress encasements

Mattress and box spring covers specifically designed to exclude bed bugs should be used to salvage the mattress and box spring and protect them from future infestations. To help mitigate further infestation in the building, landlords should supply the tenant with mattress bags or moving wrap for disposal.