

Insect Control

Includes:

- *Insect Control*

Service Overview

DESCRIPTION

- Provide insect abatement in order to protect persons and properties against the negative effects of insects while minimizing impact on the environment.

KEY GOALS

1. Effective and coordinated nuisance mosquito control and West Nile Virus response.
2. Implement the Insect Control Strategy utilizing a phased-in approach approved by Council in March 2005.
3. Protect the urban forest by reducing the damage caused by insects, including Elm Bark Beetles and cankerworms.
4. Enhance insect abatement initiatives while minimizing the impact on the environment.
5. Enhance public education and communication systems.

SERVICE LEVEL STATISTICS

Description	2003 Actual	2004 Actual	2005 Actual	2006 Actual	4 Year Average
No. of hectares larvicided with biorational insecticides.	4,009	8,341	14,652	4,200	7,801
No. of hectares larvicided with chemical insecticides.	30,059	35,745	30,159	9,190	26,288
No. of hectares larvicided by aircraft.	33,756	35,772	36,499	7,915	28,486
No. of hectares larvicided by ground-based operations.	3,533	8,376	8,312	5,475	6,424
No. of hours committed to larval mosquito surveillance.	13,061	14,561	18,812	9,265	13,925
No. of hectares fogged for adult nuisance mosquito control.	0	83,669	5,215	2,386	22,818
No. of trap nights for adult mosquito surveillance.	597	767	2,133	3,319	1,704
No. of boulevard and parkland trees treated for defoliator insects.	83,625	0	5,554	60,440	37,405
No. of parkland trees treated for the control of elm bark beetle.	75,558	3,547	52,848	51,640	45,898
No. of stumps treated for the control of elm bark beetle.	2,389	5,074	6,275	8,800	5,635
No. of Bugline inquiries (phone and in person).	1,936	2,518	3,323	2,477	2,564
No. of web-site visits.	173,412	206,723	383,060	418,693	295,472

In addition to Winnipeg, portions or all of the following municipalities are larvicided:

East St. Paul
Springfield
Macdonald

Headingley
St. Clements
St. Andrews

Richot
Tache

Rosser
West St. Paul

Strategic Direction

LINK TO *PLAN WINNIPEG*

- 5A-01 Promote Environmentally Responsible Decision-Making
- 5A-05 Address Water, Air, and Noise Pollution
- 5A-06 Provide Safe and Effective Pest and Weed Control

SYNOPSIS OF POLICY DIRECTION

The City of Winnipeg Charter provides the mandate and the authority for the Insect Control Branch operations. Further to this, City Council has approved:

The Mosquito Control By-law No. 101/2003A - to prevent mosquito larval development sites and control mosquitoes (updated March 23, 2005).

Insect Control Strategy 2005 - The City of Winnipeg is implementing a biological based larviciding program utilizing a phased-in approach over the next three years. The Strategy also includes an *Insect Control Urgent Expenditures Policy*. This policy would provide the CAO with the authority to implement a response plan when urgent conditions necessitate: 1) additional larviciding and the activation of the adult mosquito control policy; 2) the need to conduct a defoliator program; or 3) the need to carry out the municipal component of the Manitoba West Nile Virus response. In addition, under Section 289(1) of The City of Winnipeg Charter, an *Insect Control Urgent Expenditures Reserve Fund* will be established to cover the costs of implementing a response plan when urgent conditions necessitate.

C149 Mosquito Control Program – Adult Mosquito Control Policy - specifies the terms and conditions for pre-emptive barrier spraying or fogging in local areas or throughout the city (updated March 23, 2005). Consideration to initiate or stop adulticiding will be based on the Adulticiding Factor Analysis (AFA) Guidelines.

Termite Control By-law 4891/88 allows the City of Winnipeg to treat properties infested by termites. (updated December 2002)

Provincial and Federal Legislation:

Pesticide Use Permit issued by Manitoba Conservation is required by the City to conduct all Insect Control activities on private and public property. This includes the products used and the manner in which they are to be applied.

- Fogging in response to a West Nile Virus or Western Equine Encephalitis threat is covered under the provincial **Environment Act (C.C.S.M. c.E125)**, where the Minister of

Health declares that a health emergency exists or that one appears imminent.

Provincial and Federal Legislation requires that designated employees within the Insect Control Branch require a current Provincial Pesticide Applicators License.

Pesticide Management Regulatory Agency - the City utilizes only products that have been registered for use in Canada by Health Canada's Pest Management Regulatory Agency (PMRA) and in accordance with PMRA regulations. The City also requires permission from Manitoba Conservation to use these products as part of the integrated pest management program.

The Provincial Workplace Health and Safety Legislation (W210), has been updated to reflect more stringent safety requirements for employers. In addition, employers can be charged under the Criminal Code (Bill C-45) for failure to comply with this new legislation.

Canada Labour Code, Part II, the Aviation Occupational Safety and Health Regulations - Helicopter operators conducting larviciding operations are certified by this regulation.

Transport Canada certification process - the Heliport has recently been certified for 2007-2008.

Workplace Hazardous Materials Information System (WHMIS) is legislation that covers hazardous material used in Canadian workplaces. The transportation and storage of pesticides is regulated by this legislation.

Personal Health Information Act and the Freedom of Information and Protection of Privacy Act - the City shall not release information that identifies individuals who register against any of the insect control spray program activities.

KEY FACTORS INFLUENCING SERVICE DELIVERY

Capital Region

Since 2002, the Province of Manitoba and surrounding Capital Region municipalities have contributed approximately \$1.1 million dollars annually, enabling the City to consistently larvicide 6-10 km beyond the City limits.

Technology

Integration of technological advances (computer systems with Global Position Systems (GPS) to Geographical Information Systems (GIS)) has resulted in sophisticated planning and monitoring systems for mosquito control interventions. These advances have created a demand for

Insect Control staff to continually learn new technical skills.

Environment

There is increasing pressure on the City from its citizens and special interest groups to use more environmentally friendly products in insect control activities. Residential fogging, in particular, raises conflicting public concerns. In response, the City of Winnipeg adopted the Insect Control Strategy in 2005, which includes a phased-in approach to a fully biological-based larviciding program and the integration of a number of other more environmentally friendly control measures that are intended to reduce the need for fogging.

The Federal Pest Management Regulatory Agency (PMRA) currently licenses Malathion as the product for use for adult mosquito control within Canada and is considering the deregistration of Dursban (chemical) for use in mosquito larviciding. Further direction is expected from the PMRA with regard to the use of Dursban following the 2008 insect control season. As new adult control products become registered in Canada, the Insect Control Branch will evaluate them to determine their use as part of an integrated pest management program.

Regulation

The 'Pesticide Use Permit' issued by Manitoba Conservation, defines regulatory requirements for the various insect control programs.

Public Health

Since the arrival of West Nile Virus in Manitoba in 2002, the service demands on the branch continue to increase annually. This has required the restructuring of the Insect Control Branch which has included the addition of administrative, communications, research and financial positions.

New scientific research on insects and vector borne diseases continually influence the way Insect Control delivers its services.

SUMMARY OF GOALS AND STRATEGIES

1. Effective and coordinated nuisance mosquito control and West Nile Virus response.

- Ongoing intergovernmental collaboration in response to West Nile Virus.
- Consistent, coordinated and timely public education and communication for nuisance mosquito and West Nile Virus response.
- Enhance, improve and integrate the vehicle guidance and registration systems for those residents not wanting treatment for nuisance mosquito control.

- Continue commitment to alternative approaches to reduce mosquito larval development sites.

2. Implement the Insect Control Strategy approved utilizing a phased-in approach by Council in March 2005.

- Continue to move toward a fully biologically based larviciding program.
- Continue to utilize the Council approved Adult Mosquito Control Policy AFA guidelines.
- Continue to utilize pre-emptive environmentally sensitive barrier treatments before ULV adulticiding (fogging) for adult mosquito control.
- If adulticiding (fogging) is required, it will be implemented for the entire city, prioritizing first for areas with highest nuisance mosquito populations.
- Continue to extend the larviciding season until the end of September to minimize the next year's nuisance mosquito population.
- Continue to implement a biological or biorational control strategy by the introduction of natural predators (minnows and dragonfly nymphs) to permanent water bodies within the city.
- Work collaboratively with other Civic Departments to implement source reduction strategies as a long-term program for the reduction of mosquitoes in Winnipeg.
- Continue to pursue new public education strategies for source reduction on private property.
- Continue to participate in mosquito-based research to ensure that the Pest Management Regulatory Agency continually considers licensing of new products for use within Canada.

3. Protect the urban forest by reducing the damage caused by insects, including Elm Bark Beetles and cankerworms.

- Continue to work with the Forestry Branch in controlling the Elm Bark Beetle on American Elms.
- Enhance control strategy of treating elm trees along the river bank corridor where elm bark beetles are most prevalent.
- Continue surveillance of Elm Bark Beetle and cankerworm populations.
- Provide surveillance for invasive species to prevent significant risk to the urban forest.
- Continue to provide information to the public through the media, Bugline, Web-site, and list servers.

4. Enhance insect abatement initiatives while minimizing the impact on the environment.

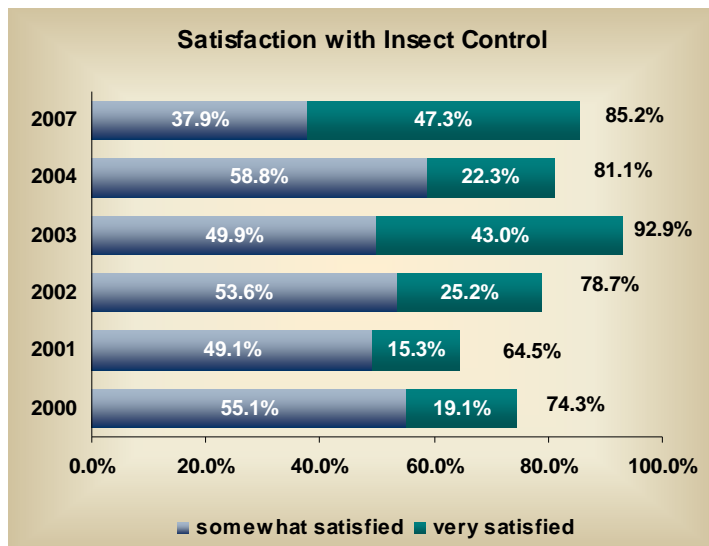
- Increase focus on biological approaches to insect control.
- Work collaboratively with other agencies on research initiatives that may benefit insect control operations.
- Improve practices within the Insect Control Branch that ensure a safe work environment based on current legislation.
- Ensure that the safe storage and handling of chemicals meets current workplace safety legislation
- Continue to collaborate with other jurisdictions and the Federal Pest Management Regulatory Agency in the pursuit of more environmentally friendly products to be licensed for use in Canada.

5. Enhance public education and communication systems.

- Continue to enhance the Bugline, a telephone information line and the Insect Control web-site.
- Continue to provide public education through community group presentations, print materials and media briefings regarding the City's Insect Control Strategy and current control activities.
- Strengthen co-ordination between the City and the Province on the development and delivery of all West Nile Virus public messages.
- Increase direct contact with Winnipeg citizens on reducing standing water on private property and West Nile Virus prevention activities through community based initiatives such as Targeted Environmental Action Against Mosquitoes (TEAAM).
- Continue to provide an automated telephone, email notification and list server system for individuals who require personal notification when fogging is taking place.

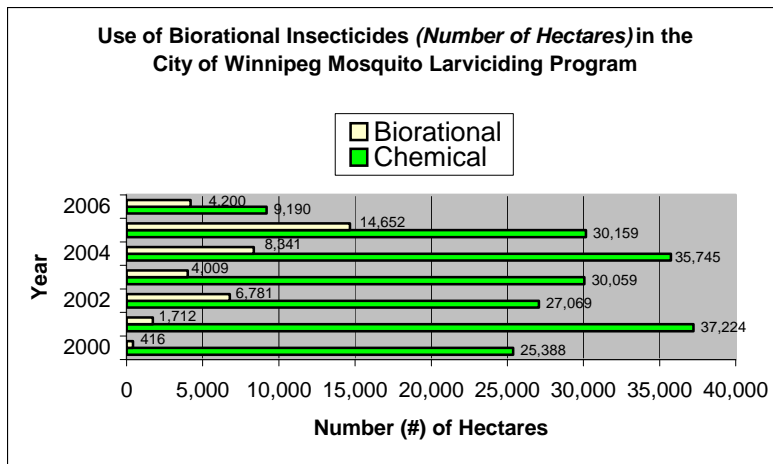
Performance Information

CITIZEN SATISFACTION



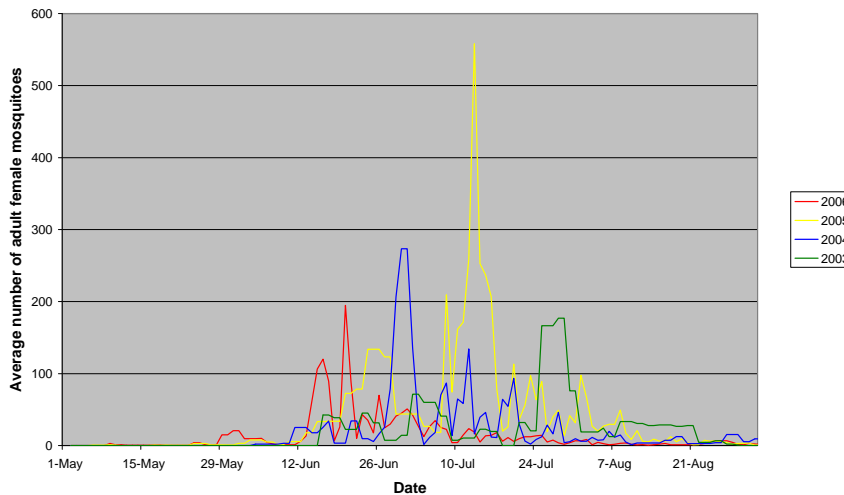
Citizen satisfaction remains high with approximately 85% of the respondents satisfied with Insect Control Services.

EFFECTIVENESS DATA



The City of Winnipeg was the first municipality to use Biorational Insecticide for mosquito control. These programs began in 1984. Since 2000, Insect Control has increased as a percentage the number of hectares treated with Biorational products from 2% to nearly 33% in 2006.

Daily average number of adult female mosquitoes collected within Winnipeg from the adult nuisance surveillance program.



The average number of adult mosquitoes collected is largely affected by rainfall patterns. In 2006, above-normal precipitation in late June and early July resulted in a significant increase in the daily average number of adult mosquitoes collected within Winnipeg. A residential adult nuisance mosquito fogging program was implemented to reduce the numbers to a more tolerable level for the citizens of Winnipeg.

EFFICIENCY DATA

Description	2004	2005	2006
Cost/ha for aerial application of biorational larvicide.	\$67.64	\$69.59	\$129.56
Cost/ha for aerial application of chemical larvicide.	\$43.39	\$37.12	\$85.62*
Cost/ha for ground application of biorational insecticide.	\$197.29	\$192.31	\$328.14*
Cost/ha for ground application of chemical insecticide.	\$204.68	\$202.73	\$328.21*
Cost per parkland tree for control of elm bark beetle.	\$2.10	\$2.22	\$2.15
Cost per kilometer of residential nuisance fogging.	\$33.56	\$34.68	\$70.12
Cost per hectare for Larval Mosquito Control	\$93.48	\$105.15	\$187.75*

Insect Control's costs over the years have been relatively stable. The cost per hectare is directly related to weather conditions and includes fixed and variable costs. In 2006, only 25% of the normal hectares were treated because of the drier than normal conditions. Therefore the cost per hectare in 2006 increased significantly over previous years because fixed costs are high.