TOWN OF ALTONA MOSQUITO CONTROL POLICY

The Town of Altona Public Works and Parks Departments recognize their important role in controlling the adult mosquito population within the limits of the Town of Altona and are committed to doing so by developing and implementing an environmentally sustainable approach to control that includes the responsible use of chemical pesticides. The following criteria have been considered in the development of this Mosquito Control Policy:

- Human health and safety
- Minimal impact on the natural controls for the particular pest
- Minimal negative impacts to non-target organisms
- Minimal environmental damage
- Maximize potential for long term control
- Be operationally effective and feasible
- Be cost effective in the short and long term

The long-term goal of the Mosquito Control Program is to ultimately reduce the necessity for controlling adult nuisance mosquitos through the use of Integrated Pest Management (IPM) strategies. Town staff members, as licensed pesticide applicators, are committed to utilizing IPM as a decision making process that uses a combination of techniques to suppress a particular pest. The Altona Mosquito Control Program will use an IPM strategy based on the following components:

1. Source Reduction
2. Larval Mosquito Surveillance and Control
3. Public Awareness
4. Adult Mosquito Surveillance and Control
5. Program Evaluation

1. Source Reduction

The Town of Altona is committed to reducing the prevalence of standing water in ditches, culverts, and catch basins which serve as breeding sites for mosquito larvae. The winter snow-melt, spring rains and summer rains often result in large amounts of standing water – setting the stage for adult mosquito infestations. Public Works and Park staff will identify poorly drained areas and take reasonable measures to reduce potential larval habitat. Where possible, long grass in parks, along roadways, and other

public spaces will be mowed to reduce or eliminate the resting places of adult mosquitos.

2. Larval Mosquito Surveillance and Control (Larvicide)

The Public Works staff will control mosquito larvae by monitoring and treating standing water within a perimeter of one km beyond town boundaries. All potential breeding sites within this zone have been identified, categorized, and mapped for the provision of mosquito control. Monitoring will take place beginning in early May and continuing until late August.

The frequency and timing of inspections will vary in each situation, depending on factors such as soil saturation levels, the existence of standing water, previously identified larvae counts, and estimated larvae development levels.

When conditions warrant, identified breeding sites will be visited weekly. Mosquito larvae are then collected in a dip sampler. Standing water will be treated with larvicide if more than 25 mosquito larvae are caught in 10 dips. Staff will document the control measures and monitor program results.

Larviciding is considered the primary means of mosquito control in our community. The Town of Altona will ensure that all employees involved in the larval control program have received training in the correct handling and proper use of larvicide.

The following controlled larvicide product(s) will be used:

- Bacillus thuringiensis israelensis ("Bti"-Trade Names- Vectobac 200 G or Aquabac 200G) are the primary control products used for controlling mosquito larvae in standing water bodies. Vectobac 200 G and Aquabac 200 G are environmentally friendly, acceptable control products, which have no detrimental effects on the environment or to non-target organisms.

3. Public Awareness

Public education tools, such as fact sheets, brochures, media bulletins, news releases will be made available to Town residents. Information and notices will also be posted on the Town's website. Surveillance statistics on

West Nile Virus (WNV) and WNV protection tips will be made available to the general public through Manitoba Health. The local media will be used to create public awareness regarding the Mosquito Control Program.

The key messages in the public education and communication strategy will include the following:

Source Reduction:
The public education and communication campaign will encourage citizens to keep their private property as free as possible of habitats for mosquitoes. Citizens will be advised on how to reduce standing water that may collect in backyards, including pools from over-irrigation, old tires, children's toys, pet bowls, wading pools, stagnant ponds, bird baths, or in flower pots.

Larval Control:
In residential situations where standing water cannot be eliminated, homeowners will be encouraged to use domestic larvicide available for purchase at local home and garden centers.

Personal Protection:
The public education and communication campaign will provide information about ways people can protect themselves. Information will be provided to the public on how to reduce their exposure to mosquitoes through the following activities:

- Using an appropriate mosquito repellent
- Reducing the amount of time spent outdoors between dusk and dawn; the peak mosquito hours are around dusk and dawn but Culex tarsalis mosquitoes will also bite during the night, or on cloudy, overcast days
- Wearing loose fitting, light colored, long sleeved tops and long pants when outdoors
- Making sure that door and window screens fit tightly and are free of holes

4. Adult Mosquito Surveillance and Control (Adulticide)

The Town of Altona will coordinate the Adult Mosquito Surveillance and Control Program with the main emphasis directed at maintaining nuisance mosquito populations at a tolerable level throughout the Town. The Town of

Altona has an Ultra Low Volume (ULV) fogger as a tool for the application of Malathion and, as such, recognizes the need for guidelines to initiate or stop an adulticide program. The current pesticides available for Adulticiding are not "target-specific" and predatory and non-threatening insects will be affected by its application. Fogging therefore will be considered the "last line of defense" in the Mosquito Control Program. As a result, the Town of Altona will consider analysis of several factors and conditions before undertaking an adulticide (fogging) program.

In order to track the adult mosquito population, mosquito traps will be established at up to 6 designated sites around the community. Each "New Jersey Light Trap" will be monitored 5 days per week. Adult mosquitoes from each trap will be collected, counted, and females identified. The data from these traps will play a key role in informing the decision to undertake Adulticide control measures.

Bearing in mind the various elements of an IPM based strategy to control mosquitoes; the Town of Altona will utilize an Adulticide Factor Analysis (AFA) system similar to that of larger centers to determine the need to initiate fogging activities. (See Appendix A attached). Fogging activities throughout the Town of Altona will be initiated when the AFA rating is determined to be "High".

Buffer Zones: The Town of Altona will compile a list of residents who register their objections to the use of Malathion ULV. Fogging will not occur within 90m of the property boundaries (property line on all sides) of any resident that objects to residential fogging practices.

Special Events: The Town of Altona will fog within the boundaries of the Altona Centennial Park and within the boundaries of the Altona Millennium Exhibition Centre property prior to special events such as the Altona Sunflower Festival if the AFA rating is "Medium" or higher and weather conditions permit. Surrounding residents and campground guests will be notified 24 hours in advance of these localized fogging efforts.

West Nile Virus: Assistance will be given to Manitoba Health in their efforts to monitor and control the mosquito-borne illness known as West Nile Virus. The culex-tarsalis mosquito species has been identified as the vector for this virus which poses a health threat to humans. The Town of Altona and Manitoba Health are committed to coordinating resources to monitor and provide the required control in an effort to minimize the impact of the West Nile Virus on

the community. An extensive larviciding program is conducted throughout our community. Although our commitment is to maintain larviciding as the primary mechanism for mosquito control, as controls can be maintained using the environmental friendly pesticide (Bacillus thuringiensis), we are prepared to conduct an adulticide program if Manitoba Health declares an emergency situation due to elevated numbers of the mosquito vector infected with this virus.

5. Program Evaluation

Wherever possible, treatment efforts will be recorded and evaluated to determine the results. Larviciding and Adulticiding efforts will be compared with Town trap count data as well as Provincial trap count data to determine the overall efficacy of the Mosquito Control Program. In this way, population trends can be tracked and possibly shared with our Provincial counterparts.

APPENDIX A

AFA (Adulticide Factor Analysis)		SCORE
Soil and precipitation conditions:		
• Dry conditions and less than 2.5mm of rain over past 7 days:	1	
• Beginning of soil saturation and 2.5 to 7.5 mm of rain over past 7 days:	2	
• Soil saturation and more than 7.5mm of rain over past 7 days:	3	
Nuisance mosquito numbers in the New Jersey Light Traps for 3 consecutive days:		
• Numbers are stable and averaging 25 female adult mosquitos or less per trap for 3 consecutive days:	1	
• Numbers are increasing and averaging between 25 and 50 female adult mosquitos per trap for 3 consecutive days:	2	
• Numbers are high and are averaging more than 50 female adult mosquitos for 3 consecutive days:	3	
Temperature Factor:		
• Degree Day model (base 14.3 degrees Celsius) threshold is equal to or less than 110:	1	
• Degree Day model (base 14.3 degrees Celsius) threshold is between 110 and 200:	2	
• Degree Day model (base 14.3 degrees Celsius) threshold is greater than 200	3	
Monitoring of the larval development sites:		
• 25% of mosquitos at the 1st to 4th stage of larval development and no pupae are present in water bodies	1	
• 25-50% of mosquitos at the1st to 4th stage of larval development and pupae are present in water bodies	2	
• More than 50% of mosquitos at the 1st to 4th stage of larval development and many pupae are present in water bodies	3	
Probability of nuisance adult mosquito emergence in 7 days based on larvicide applicators data		
• Low	1	
• Medium	2	
• High	3	
* A combination of other factors, including but not limited to conditions from outside of the Town of Altona which have resulted in a substantial adult mosquito population within the urbanized area of the Town of Altona	2-3	
TOTAL SCORE:		

AFA Rating: Low (0-10), Medium (10-14), High (15-18)

**This factor will only be considered when there is a substantial adult mosquito population within the urbanized areas of the Town of Altona that is due to a combination of other factors, including but not limited to conditions outside of the urbanized area of the Town of Altona such as high winds, extensive rainfall or larval sampling that indicates large mosquito populations existing outside of the urbanized area of the Town.*