

BARRY GRAY,
THE HAMILTON SPECTATOR

Malathion is the
weapon of last
resort against
mosquitoes.

Making war on a tiny killer

WE'RE ALL BEING CONSCRIPTED IN THE BATTLE AGAINST WEST NILE: *The public health department is leading the charge against the mosquito, attacking thousands of stagnant water sites where the little critters breed. But we're all being asked to do our bit, too, and make sure there isn't so much as a saucer full of water in our yard.*

By PAUL MORSE
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The Hamilton Spectator

Hamilton's fight against the West Nile virus will be like the Iraq War — strike fast from several directions against different targets, then follow through with overwhelming force on pockets of stubborn resistance.

Along the way, the city's viral warriors will enact new laws, while at the same time appealing to the hearts and minds of residents to help bring about a new order to protect Hamilton from the mosquito-borne enemy.

Central command is the public health department, led by medical officers of health Dr. Elizabeth Richardson and Dr. Monir Taha and health protection manager Susan Harding-Cruz.

They have mapped out a strategy that includes reconnaissance of enemy territory, chemical attacks, a search for hidden viral sites, appeals to the public and last-resort malathion spraying.

It's a multipronged approach that cuts across city departments and creates special units from departments as diverse as public works and the city's geographers, who will deploy state-of-the-art mapping technology.

Planning began last fall after it was established the virus had reached Hamilton.

But the public health office insists that an important point has to be kept in mind — they still need to know a whole lot more about the problem.

"It is a challenge to gather information and that is what we are doing this year," Harding-Cruz said this week.

"Last year's picture was a bit unexpected for everyone because of how quickly West Nile did take hold ... We expected it to be here but we now know it is going to be here again this year."

The first part of the plan is getting basic information about the disease to the people. This is available through the city's Web site, newspaper ads and

public-health contact phone lines.

It tells people how to avoid being bitten and it recommends people look after their property by looking after standing water, the ground zero for the disease.

"If you have something you can turn over or rinse out on a regular basis, then that should be done so the mosquitoes can't go through their whole life cycle.

The attack on the virus begins with next month's larviciding of more than 20,000 of the city's storm-water catchbasins.

Workers will sprinkle pellets of the pesticide, methoprene, which disrupts a mosquito larva's ability to transform into an adult. Wipe out the adult before it can breed, and you wipe out at least the four sets of new eggs it can lay in a season.

Other cities grappling with the virus have identified the catchbasins — sediment traps in the road storm sewer system — as prime breeding spots for the Culex species of mosquitoes, which prefer still, stagnant and shallow water and travel only about three kilometres from where they hatch.

Where there is a curbside grate in the road, there's a catchbasin underneath and these prime breeding sites are close to where humans live.

The city can also get access to all catchbasins because they are on public land, but there is a snag.

Because of amalgamation, the city does not have a combined database of exactly where all the catchbasins are, so it has been building a maintenance management program which integrates the whole city's roadway and sewer network.

Hamilton catchbasins were inventoried before amalgamation, but weren't mapped in the suburbs, Harding-Cruz said. "Catchbasins were not mapped in a similar way to how the former city of Hamilton was, so there are gaps and different departments are talking to each other to find out what information they have on file that can be shared."

It means physically feeding informa-



tion from former municipalities' databases.

A worker will also be sent out with a backpack containing geographical location gear to visit and map any missing catchbasins.

Once all are identified, they will be larvicided in June, and then again in July to catch any mosquitoes missed in the first round.

Inspectors can use the Public Health Act to force citizens to clean up standing water on private land.

The other big target will be standing water, whether a birdbath, old tire, scummy swimming pool or storm water retention pond (city ponds to catch excess rainwater).

"For storm water retention ponds and other surface waters, we need to still take an inventory of all our standing water sites on public land and we're working on that this summer," Harding-Cruz said.

Health officials need to first of all find out if those sites are breeding areas for the right type of virus-bearing mosquitoes.

"We're saying it is not a set plan to do the surface waters," Harding-Cruz said. "It will be a great undertaking to organize ourselves to respond."

Right now, health inspectors are checking public and private surface water based on information from city experts and complaints from the public, which have tripled this year.

On private lands, public health inspectors will assess the problem.

"If they are unable to comply or are choosing not to, they will be issued orders to comply," said Harding-Cruz.

Inspectors can use the Public Health Act to force citizens to clean up standing water on private land.

People have been calling about pools, storm water retention ponds — any area that may be collecting water, she said.

"We already have 200 sites where we will be going out," she said.

"Because of the season, it makes sense to go out soon to look at these sites because any earlier, the breeding may not have taken off yet."

It's an overwhelming load for the health department's three inspectors, but six more from other departments will soon be added.

A new bylaw governing standing water on private property is rapidly being drafted, to go to council within weeks. It will give the city a way to enforce standing water regulations.

"But for now it will be public health inspectors going out to assess areas and our enforcement tool will be the health protection and enforcement act," Harding-Cruz said. "Who will enforce the standing bylaw is still under discussion."

How does the city figure out where standing water might harbour the dangerous virus-bearing mosquitoes?

That's where the Geographical Information System (GIS) comes in.

GIS experts, under manager Al Little, are compiling a new type of map database that gives staff powerful tools to scan for hot spots.

"It has been really wonderful working with the GIS services," Harding-Cruz said.

"They have been extremely helpful in setting up the databases for all our information — human surveillance, birds, mosquitoes and all info can overlap and help us get a picture of what is happening over the summer."

The main GIS tool is based on orthophotography, a digitized aerial photograph of the city that has been corrected and connected to real-world GPS co-ordinates.

The orthophoto is a seamless digital photo of the whole city, but can be zoomed down to half-kilometre area fine detail.

Mapmakers then layer information such as elevation contour lines on top of that to find potential standing water sites.

But the ortho-image does not tell them if standing water is actually present. What they see as a depression on the map may be dried up, or the standing water is hidden by vegetation. The only way to be sure is to send someone to check it.

"But it will help prioritize areas of investigation for inspectors," Little said.

The complex mapping provides other data sets, he said, including soil types, dead bird locations, concentrations of mosquito-bearing virus and human surveillance from which they can create maps that show viral dispersion and assess hot spot risk.

The final part of the battle plan involves spraying pesticide mist into the air to kill adult mosquitoes on contact.

Health officials don't really want to unleash that weapon, but expect it will become necessary this summer.

The so-called adulticiding or fogging of the chemical malathion will be done by a pesticide contractor who will cruise high-risk areas at night in pickup trucks when mosquitoes are most active and most people are indoors.

Environmentalists have denounced the practice, which has been used extensively in other cities such as Winnipeg and New York.

"This is a new disease and some of the information required to make decisions was not gathered in the past because there was not a need to have that information all in one spot," Harding-Cruz said.

"It's a challenging year." More information is available at www.city.hamilton.on.ca/phcs/West-Nile-Virus/ or the public health line at 905-546-3575.

pmorse@thespec.com or 905-526-3434.

LIFE CYCLE OF THE MOSQUITO

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