contains all points of view. Copies of the report can be obtained by calling the Public Health Department at (617) 665-3800.

Mr. Sam Lipson, a toxicologist with the Public Health Department, stated that the victory of the planning process is around prevention. He spoke on planning and implementation for the habitat control. He outlined the steps that will be taken. Storm drains have been treated to prevent the larvae from becoming adults. Summer crews and Summer Puddle Patrol will be established to survey the storm drains for larvae. The general public will be educated on the potential harm caused from standing water on public ways and private property. The Public Works and Inspectional Services Department personnel will look for standing water. The Geographical Information System (G.I.S.) will be used to locate every storm drain in the city to apply herbicide. An agreement must be reached with the Eastern Middlesex Mosquito Control Project (EMMCP). A study will be conducted by the Center for Disease Control (CDC) on the different types of habitat for mosquitoes.

The second part of the prevention is the protection of other habitat and species. Storm drains in these areas such as the Little River and Alewife will be treated differently, he said.

The third step will be to test the Charles River to see what impact has been made by the use of the chemical larvicide methaprene.

If spraying occurs, the fourth step will be that open surface waters will not be sprayed because the chemicals are toxic to fish.

The fifth step will be to do surveillance of birds. The reporting system will be improved. The Animal Control will be the primary reporting control and will coordinate with the Public Works Department. Bird collection will occur. However, there will be a limited number of birds that will be tested by the State Department of Public Health Labs. The surveillance, he said, becomes the location of the birds with West Nile Virus. The City staff will dispose of birds containing the West Nile Virus. Mosquito traps will be placed around the city. Mosquitoes, he said, infect humans, birds are secondary. He further stated that in addition to the CDC work, there is a commitment from manufacturers for a mosquito magnet. Councillor Davis asked what is a mosquito magnet. Mr. Lipson responded that it is a mechanism that attracts mosquitoes that emits carbon dioxide (human exhale). The mosquitoes dive in and they cannot get out.

Mr. Lipson outlined the factors used to make the decision to spray as outlined in the Cambridge West Nile Surveillance and Response Matrix **(ATTACHMENT B)** The surveillance information that will be used is as follows:

- Density and increased density of birds is important to keep a record;
- Any infected mosquito pools; and
- Presence of virus in pool of human biting mosquitoes;

- Confirmation by lab of West Nile Virus.

The factors that will be considered are seasonal rainfall and risk level occurrence early versus late in the summer.

Councillor Davis opened the meeting to the public to ask questions of Mr. Lipson.

Karen Carmean asked why is there spraying when we know two people were harmed from the spraying and no harm was reported from the virus. If the West Nile Virus comes, she said, one person may be hurt, why hurt the majority through spraying.

James Williamson stated that he did not know about this meeting until yesterday and he did not know an Advisory Committee was established. He asked how was the Advisory Committee chosen. Mr. Cox responded that a hearing was held on January 31, 2001 to engage in the community process and volunteers were requested. Other members with more expertise were also asked to join the Advisory Committee, he said.

In response to Mr. Williamson's question of what is the actual risk and does it warrant the action to spray, Ms. Ricki Lacy, Director of Public Health Nursing, stated that 150 people will get sick from the West Nile Virus and 1-2 people will die because of it.

Allen West, Ph.D., Professor of Chemistry and Advisory Committee member, stated that if bitten by a mosquito with West Nile Virus, 1 out of 30,000 will get sick (this figure represents 3 or 4 people) and if bitten by a mosquito with West Nile Virus 1 out of 200,000 will die.

Mr. Lipson stated that the decision to spray would be based on the following:

1. If there is biological evidence of true risk; and
2. Guidance followed by the State Health Department and CDC.

The work lies in the habitat control, he said. Mr. Cox stated that it is an issue of notification, community involvement and education.

Ms. Lacy informed the committee that if spraying is needed, there will be urgent notification done. She stated that there would be:

1. A West Nile Virus site and a state West Nile Virus site on the City of Cambridge's Web Page;
2. A hot line will be established between 8:00 a.m. and 8:00 p.m.;
3. Public information will be set up in the Senior Centers;
4. Special notification will be done for the population at risk, especially the elderly and the homeless;
5. Faxes, mail and e-mail will be used;

6. Reverse 911 system will be used. Recorded message will be left regarding spraying;
7. Recorded messages about spraying will be made the Public Works Department;
8. Public Works posters;
9. Spray trucks will have police escorts to help spot pedestrians; and
10. Announcements will be made on WEEI.

Mr. Cox stated, in summary, the response was crafted for the community. He stated that the city is not interested in spraying. The city is looking at controls to prevent mosquitoes from becoming adults. The city staff is involved in the first phase which is larvae siting.

At 8:11 p.m. Councillor Davis opened the meeting to public comment.

Allen West stated that he signed the addendum. **(ATTACHMENT C)** What is not agreed to is in the addendum, he said. He stated that the Advisory Committee members have a vast list of qualifications. Spraying should not be done. The notion to spray, he said, is an oxymoron because it does no good.

Sarah James, Advisory Committee member, Richdale Avenue, stated that she appreciated the opposing view attached to the report. She stated that in 1999-2000 people died from the flu and no deaths occurred from the West Nile Virus. Does the West Nile Virus warrant a response as drastic as spraying. There is no such thing as a safe pesticide, she said. There is no evidence that spraying eliminates the disease. There are 80,000 chemicals in our society as listed by the EPA. She urged the Public Health Department and the City of Cambridge to revisit this issue.

Michael Nakagawa, Madison Avenue, stated that he was concerned because of the way that things were done. Pesticide use takes a long time to see its effects. Cambridge is dense, he said. He called on the public to be more responsible. Standing water in yards should be emptied, he said. The mosquitoes must be kept from breeding. He submitted a letter from Craig Kelley to be entered into the report. **(ATTACHMENT D)**

Gerald Bergman asked if there is a fail-safe factor before spraying will occur. Mr. Lipson responded that the matrix is to clarify the stages of risk. Mr. Bergman stated that he did not see in the plan education of the public about health risks of spraying and pesticides. Mr. Lipson stated that the report lists the concerns of pesticides.

Mr. Cox stated that there would be two additional forums held. Mr. Bergman asked how is outreach addressed to non-English speaking residents. Ms. Lacy stated that all information is listed in four languages, Portuguese, Haitian Creole, Spanish and English.

David O'Connor, Director, Emergency Management, stated that when spraying was done, a handout was given to the neighborhood.

Karen Carmean stated physician first do no harm; spraying does harm. She stated other health issues such as violence and HIV need to be worked on first.

James Williamson asked about costs involved such as research, spraying and resource. He stated that West Nile Virus has occurred where there has been spraying. He suggested that a summary of the addendum be provided to the public. Mr. Cox stated that the report is on the web site and copies can be obtained by calling (617) 665-3800. He further stated that the cost issue is difficult to estimate. All views need to be heard on this issue.

Sarah Satterthwaite, 198 Hamilton Street, stated that she was hysterical last year when her house was sprayed. She was pleased with the path taken this year. She liked the emphasis on habitat control. She stated that she would buy a mosquito magnet if there were a guarantee not to spray.

John Pitkin, 15 Fayette Street, stated that the Department of Public Health needs to hear from consumers who live with the decisions made. He would rather use alternative measures than spraying.

Councillor Braude stated that he did not agree with the criticism that the Public Health Department is doing too much. He complimented Mr. Cox on his hard work to get the information to the community. He asked if the Advisory Committee would continue in place. Mr. Cox stated that the Advisory Committee would be brought back in September to evaluate the program. The city is now in the implementation stage. Councillor Braude asked Mr. Cox how do you market the public health message when the media is broadcasting a message of fear. Mr. Cox stated that the Public Health Department would meet with the Globe Editorial Board to look at the best way to get the information to the public. The state is attempting to take a regional approach to make sure that all entities are giving the same information. Councillor Braude suggested citing the sources in the report. He asked what is the timeline for spraying when a person is affected. Mr. Lipson stated that the city has a high threshold to notify the public.

Councillor Born asked if the preventive system was under control. She asked if a West Nile Virus coordinator had been hired. Mr. Cox responded in the negative. Councillor Born asked when will the mailing go out. Ms. Lacy responded as soon as possible. Councillor Born stated that the mail must be designed so that the public will read the information. Ms. Lacy stated that the mailing has a light message with a mosquito and message that says "Bite Back". Councillor Born inquired if the Summer Puddle Patrol is in place. Mr. Lipson responded that summer personnel would be hired.

Councillor Born asked who is responsible for the standing water. Mr. Lipson responded the Public Works Department.

Councillor Born asked about the Little River. Mr. Lipson stated that there is a plan for Fresh Pond and Alewife. Dave Henley, Eastern Middlesex Mosquito

Control Project, stated that the wetlands are identified and are visited in April for BTI (Bacillus Thuringiensis Israelensis). There are five species that are not identified. They are less likely to be at Little River and less likely to transmit the West Nile Virus.

Councillor Davis stated that the city cannot pick up tires which is a potential for standing water to breed mosquitoes. She hoped that coordination would be done with the Public Works Department to pick up tires. Mr. Nakagawa stated that hazardous waste would pick up two tires.

Mr. Cobham stated that people may not know of the danger of the West Nile Virus. We need to make our neighbors aware of the West Nile Virus Prevention Plan.

Councillor Davis stated that she hopes that preventative measures will be robust. She is glad to see that spraying is put off and that it is only targeted spraying. She asked why is spraying still important. Mr. Lipson stated that the Public Health Department did not want to leave out any option. Adult spraying is effective at certain times of the year. It is still considered a tool by CDC and the Massachusetts Health Department.

Councillor Davis stated that the debilitation caused by the West Nile Virus is horrible. She wanted standing water pools eliminated. She thanked the Advisory Committee and the Health Department for their hard work and thoughtful approach. The city is better prepared than last year, she said.

Councillor Davis asked if a person could put up a "No Pesticide" sign. Mr. Lipson stated that there is a state law which requires that written notice be received by March 1st. Mr. Cox stated that the Public Health Department has asked for legal advice on this issue.

Councillor Davis stated that Harvard University opted out from spraying on their campus.

The meeting adjourned at 9:40 p.m.

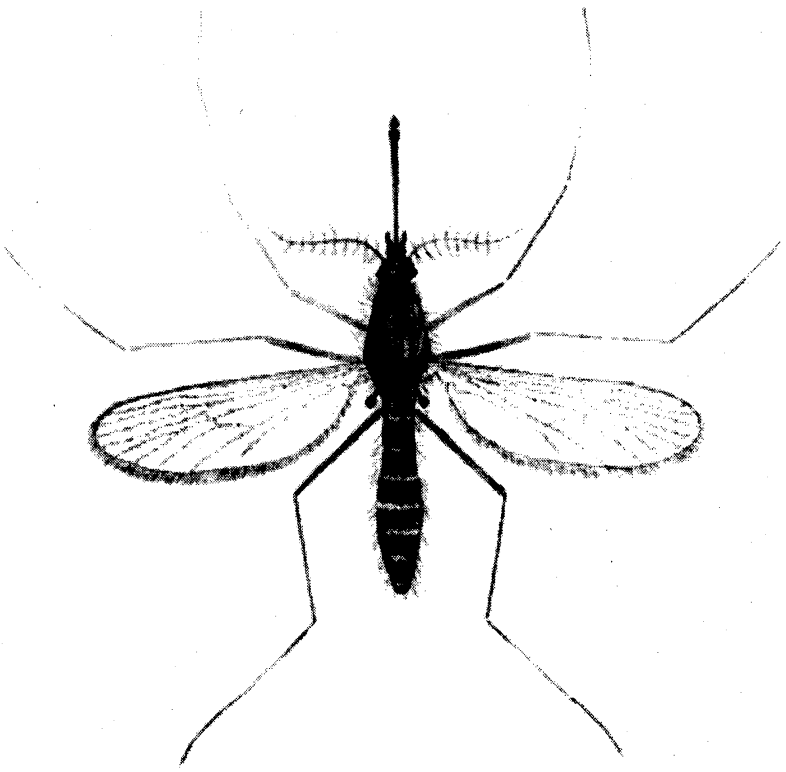
For the Committee,

Councillor Henrietta Davis
Chair

010509.WestNileVirusCommReport

ATTACHMENT A

Cambridge West Nile virus Response Plan (2001)



Cambridge West Nile virus Response Plan (2001)

In 2000 Cambridge and other local municipalities throughout the northeastern United States responded to the public health concerns posed by the recently imported West Nile virus, an arthropod-borne Flavivirus (also known as an arbovirus) commonly carried by the *Culex pipiens* mosquito. This virus was a poorly understood and emerging threat to public health that had been known to cause seven deaths and at least 62 recorded cases of severe encephalitis or aseptic meningitis in New York City in 1999 and many more deaths during outbreaks in Europe, the Middle East and Africa. Though West Nile virus has been found in Europe and in the Middle East sporadically throughout the 20th Century, it had never previously been identified in North America. Furthermore, the great quickness with which it spread in 2000 from New York City across upstate New York and New England took many by surprise. Fortunately there were no human cases of West Nile-related encephalitis reported in New England in 2000 and fewer cases in the New York City area. There remains, however, real uncertainty in the public health and scientific communities about our ability to project the spread of this disease to humans and other mammals in the first few years after its introduction to North America.

In late July 2000 a dead bird infected with West Nile virus was found in Brookline, prior to its detection in Connecticut and elsewhere Massachusetts. Local public health agencies were pressed to make decisions about how to reduce the transmission of this virus to people without the benefit of detailed information linking surveillance data to the threat of human infection. While the Centers for Disease Control (CDC) did offer some guidance on ground spraying in the vicinity of infected dead birds, no comprehensive strategic plan was available to local decision-makers.

Some efforts were made to limit the mosquito population using preventative measures. These included the application of larvicide in the majority of storm drains in the city to prevent the progression of mosquito larvae to adulthood. Unfortunately the timing of this prevention campaign and the optimal weather conditions for mosquito growth may have made this strategy far less effective than it could be. Furthermore, the natural population peak of the *Culex pipiens* was occurring in the first two weeks of August, just as biological evidence (infected birds and mosquitoes) of the rapid proliferation of the virus in the immediate area was becoming apparent. Though Cambridge waited for two weeks after Brookline and Boston initiated spraying, a decision to ground-spray was made in mid-August to limit the immediate risk of mosquito transmission of West Nile virus to the public.

This decision to use an ultra-low volume mixture of Resmethrin/piperonyl butoxide on two occasions in 2000 to limit the adult mosquito population was based on the CDC and state health department guidance to local health agencies. Uncertainties confounding this control strategy included the degree of risk to people posed by this virus in our community, the lack of comprehensive data on the immediate and long-term health effects on animals of the chemical agents sprayed to control adult mosquitoes, and the limited information on the efficacy of ground spraying to control mosquitoes and reduce virus transmission in an urban environment.

Some of the uncertainties from last summer have been reduced. The severity and prevalence of the illnesses caused by the virus are somewhat better understood by the public health community (e.g. infection rates, ongoing consequences after major infection), the major importance of local habitat control (e.g. standing water in yards) and personal protection in limiting individual risk of

being bitten is clearer, the great concern of many residents over truck-based spraying of any pesticides has been articulated and discussed, the role of weather as a factor in mediating the mosquito population dynamics has been highlighted, and the strengths and weaknesses of truck-based spraying as a method of effectively controlling adult mosquitoes have been scrutinized.

Many other legitimate questions remain unanswered concerning the relative importance of various habitats to the mosquitoes that transmit the virus to humans and the overall effectiveness of any of the prevention and control measures under consideration in halting or limiting the transmission of the virus to humans. Furthermore, real concerns have been expressed by members of the advisory group regarding the immediate and long-term consequences of pesticide exposure on the public and the environment. Responsible decisions must be made even before all questions are fully addressed and reasonable judgments must be made with the best available information. Public candor about the nature of the threat and the limited amount of undisputed information available must be maintained. As decisions must be made throughout the season public health officials, by statutory authority, are given responsibility to formulate responses on the basis of their professional and scientific experience and knowledge.

Several steps taken since last summer to increase involvement of local residents in the planning process for this year going forward. A public forum was held on January 31, 2001 and a resident advisory group was established immediately afterwards. The advisory process reflects an effort to hear and to consider the concerns of those who have gone to great effort to communicate with the Public Health Department since last summer. While this West Nile Response Plan has not been forged out of consensus, the quality of discussion and the willingness to listen and respectfully submit opposing viewpoints has been exemplary. An opportunity to submit alternate statements on issues that remain unresolved will be given and this text will be included in the final draft without the editorial control of this department.

Beginning in 2001 the City of Cambridge will carry out a comprehensive plan to limit the risk of West Nile virus transmission by emphasizing prevention measures such as habitat control, larvicide applications in storm drains, public education, and personal protection from bites. The ultimate goals of the West Nile virus Response Plan are to prevent any serious human illness related to this virus and to make consideration of unpopular and riskier control measures (e.g. citywide ground-spraying of pesticides) unnecessary.

This plan will be presented in two parts:

I. An outline of actions and responses that will be carried out by various City of Cambridge agencies with some guidance included within each section. Specific public information on reduction of risk via personal protection and local breeding sources will be a major part of the local response.

II. A risk matrix indicating the public communication, public education, and control measures to be taken at each identified level of public health risk.

Overview of Roles and Responsibilities

Planning and Management of West Nile activities **Public Health Department**	Timeline
Hire West Nile Coordinator	April 2001
Coordination with other public health agencies	
• Mass DPH Planning process	Oct 2000-Apr 2001
• Cambridge/Boston/Brookline/Newton public health department coordination meetings	Oct 2000-June 2001
• Receive/review response plans from MIT, Harvard	May-June 2001
Public Input into Response Plan	
• Public Forums	1/31 & 5/9/2001
• West Nile Advisory Group process	2/28-5/2/2001
• Presentation to City Manager and Council	5/2/2001
Coordination with City departments	
• WNV meeting with City Manager and staff	4/3 & 4/27/2001
• Storm Drain Strategy Meeting with DPW, GIS/MIS, Harvard, EM Mosquito Control	4/13/2001
• Communications Strategy Meeting with Emergency Management & Emergency Communication Departments	March 2001
Habitat Control: Planning and Implementation **Public Health Department, DPW, Inspectional Services**	
• Order and manage larvicide stock and staff training	Apr-May 2001
• Develop Neighborhood Ticketing plan for standing water on private property	Apr- May 2001
• Generate Summer Puddle Patrol plan and identify community group(s) to implement	Apr-May 2001
• Review reporting system for standing water via phone and internet	Apr-May 2001
• Manage clean-up and repair of storm drains and standing water in the public way	Apr-Sept 2001
• Manage assessment and removal of other standing water	Apr-Sept 2001
• Begin cataloging storm drains for repair and treatment status; map drains as CSO vs. storm	May 2001
• Map drains receiving waters (Alewife, Charles)	May 2001
• Larval census of storm drains (with Harvard EHS)	May 2001
• Identify drains to receive *bacillus shpaericus*	May-June 2001
• Identify major construction sites for regular	May 2001

standing water inspection

- Coordinate MDC drain treatment with EMMCP (Memorial Dr, Fresh Pond Pkwy, Alewife Brook Pkwy) — May 2001
- Establish Tire Collection program (tire cutter?) — May 2001
- Coordinate with CDC habitat & efficacy study — June-July 2001

Protection of Sensitive Habitat and Species

Efforts to consider small, low-flow bodies of water that may be negatively impacted by the use of chemical larvicides (methoprene) will be made. In Cambridge there are fewer such habitats than in more rural areas, but the Alewife and Little Rivers are two such bodies. The use of methoprene will be avoided in catch basins that are not treated (i.e. combined sewer oeverflow – CSO) and that empty directly into this small river system. Bacteriological (non-chemical) larvicides may be available in future years and will be considered as an alternative. The Public Health Department will confer with the Mystic River Watershed Association, the Charles River Watershed Association, and the Cambridge Conservation Commission for further identification of sensitive habitat.

Conservation Commission, Mass Pesticide Bureau (MDFA), EMMCP

- Assess sensitive habitat for special protection from heavy chemical (methoprene) loading — May-June 2001
- Plan and implement spot testing of receiving waters for methoprene — May-June 2001
- If ground spraying does occur, all ponds and rivers will be avoided to prevent toxicity to fish from Resmethrin and piperonyl butixide

Surveillance and Bird Collection

Animal Commission, Public Health Department, Harvard EHS

- Establish after-hours and daytime dead bird reporting systems — May 2001
- Collection of dead birds in the public way for testing (until 5 WNV-positive found/month – subject to state plan) — May-Sept 2001
- Establish standardized location tagging system for submission of data to the state - subject state plan — May 2001
- Collection of dead bird location data from residents on private property for reporting to Mass DPH — May-Sept 2001
- Disposal of dead birds in public way (after 5 WNV-positive birds found – subject to state plan — May-Sept 2001
- Delivery of birds to the State Laboratory for testing — May-Sept 2001
- Implementation of local mosquito surveillance project with Harvard EHS; Mosquito Magnet implementation — May-Aug 2001
- CDC efficacy (spraying) and habitat (larvae) study — June-Sept 2001

Public Education and Information

The Public Health Department shares responsibility for public education with the Massachusetts Department of Public Health and every effort is being made to compliment the functions performed by each agency.

The goals of this communication plan focus on determining multiple venues to provide:

1. General information about West Nile Virus to the Cambridge community and where to find additional information about local and state issues relating to West Nile Virus
2. Education regarding prevention and transmission, personal protection, elimination of breeding sites on both personal and community properties
3. Ongoing and timely dissemination of information about surveillance efforts and disease presence in animals and humans
4. Urgent comprehensive notification, if necessary, regarding spraying

Whenever possible, information that is developed at the state level will be used to provide consistency of information. It is hoped that having several different formats for all the information will allow people to see, hear and read the information several times.

Public Health Department

• Contact utilities (NStar, Water) to arrange info insert	April 2001
• Develop West Nile web site with links to state DPH, CDC, academic, and environmental organizations	May 2001
• Activate West Nile Info on CPHD line 665-3801	May 2001
• Coordinate with State Hotline	May 2001
• Coordination with state public education plan	May 2001
• Local public information forums - #2	May – July 2001
• Notification to populations at risk –elderly, homeless	May – Sept.2001
• Mail Drop - prevention, source reduction, where to find information, bird/water reporting	May – June 2001
• Fax, mail and email of information to health care providers for distribution to patients	May – June 2001
• Distribution of bird, mosquito and human surveillance info via web site, state hotline, CPHD info line, media	May – Oct. 2001

<u>The decision to spray or not to spray</u>

Public Health Department and City Manager

The greatest hope is that we will not need to choose between spraying and doing nothing to contain an accelerated public risk of West Nile infection this summer. In the event that surveillance data (human, animal and insect) informs us that we have a high risk of human illness (or that human illness has already occurred), the health department will consider whether or not truck spraying is indicated.

The local response to this threat must attempt to balance the concerns of those who suspect that the full biological impact of these insecticides is simply not understood at this point and the fears of those who are more disturbed by the possible consequences of a life-threatening neurological illness. Other considerations certainly weigh in, as doubts about the eventual effectiveness of ground spraying are well-founded and some asthmatic or allergic individuals may experience symptoms on contact with any broadcast irritant, chemical or otherwise.

This decision must be made with a paucity of undisputed information about these risks. The insecticidal agents used (Resmethrin and piperonyl butoxide - PBO) have been examined for

toxicity in hundreds of animal studies with indications that they are among the safer pesticides in common use. Nevertheless, they remain among tens of thousands of chemicals that have not been examined as thoroughly as needed in order to justify any broad statements about their long-term safety to humans and the biological community. In short, our knowledge of these chemicals does not confer a level of certainty that should reassure us in every instance, but these chemicals have indeed studied for their toxicological properties for many years.

In the final assessment the public should expect to hear a reasoned and well-supported explanation for a decision to spray or not to spray. In the event that there is serious human illness or death that might have been prevented or limited, we need to support our choice with sound judgments. In any case we need to be clear about all the dimensions of our decision. Below are listed factors to be considered by the Public Health Department and the City Manager in making a decision.

Surveillance information:

- Increasing density of dead birds in clusters within Cambridge. The trend towards greater densities of birds has been identified by the CDC as one of the few strong indicators of risk of human infection
- Presence of <u>any</u> infected mosquitoes. This indicator serves as a surrogate of risk that human-biting mosquitoes have also been infected with WNv.
- Presence of infected human-biting mosquitoes (e.g. *Aedes vexans*). This measure reflects a direct risk to humans that have been bitten by these infected insects.
- Presence of a laboratory confirmed, locally acquired human case. The identification of a case of encephalitis requires laboratory confirmation that is highly specific to this virus. The long period of time between initial infection, increasing severity of symptoms, proper medical attention, and completion of the laboratory analysis at the State Lab Institute is time-consuming and may result in a 3-week lag between infection and diagnosis.

Geographic, meteorological, seasonal and demographic considerations:

- Areas likely to support large-scale breeding of mosquitoes near planned outdoor gatherings
- Wet weather likely to contribute to large mosquito populations
- Evidence of elevated WNv presence early enough in the season to allow ground spraying to have a significant impact on the adult mosquito (*Culex pipiens* and other WNv-carrying varieties) population during its population peak (July-August).
- Weather conditions that are conducive to mosquito flying activity (spraying probably will not take place with a nighttime temperature below 50 F)

<u>Public Notification</u>

Public Health Department, Public Info Officer, Emergency Communications, DPW

• Reverse 911 for notification of spraying	as needed
• Public signage	June 2001
• Media coordination local and state	ongoing
• State hot line, CPHD info line, web page updates	ongoing
• Recorded bullhorn message	As needed

<u>Ground-spray Implementation in targeted areas</u>

Public Health Department, DPW, EasternMiddlesex Mosquito Control Project (EMMCP)

- Coordination with Harvard and MIT

- Generation of spray-route maps
- Manage speaker trucks and police escorts
- Schedule spraying with EMMCP
- Publicize spray route information on web site and info line
- Plan routes to avoid pedestrians
- Identify areas populated by homeless
- Identify and map No-Spray requests (if this is possible)

Pesticide Effects Surveillance (post-spray)

Public Health Department, Mass. Public Health Department

- Passive surveillance at local Emergency Departments
- Offer information on health effects to medical provider

Review of West Nile response activities

Public Health Department

- Examine successes and weaknesses of the efforts made to respond to the virus and to communicate effectively with the public
- Review emerging information on the risks and efficacy of measures taken or considered in responding to the threat posed by the virus

ATTACHMENT B

Cambridge West Nile Surveillance and Response Matrix

All current plans for responding to the threat posed by West Nile Virus have been included in this document. At any time that the Massachusetts Department of Public Health makes direct recommendations about spraying for adult mosquito control, the City of Cambridge will carefully consider those recommendations.

Surveillance Data	Public Information	Surveillance/Control	Assessment
Stage I Risk (Risk of WNV presence but not confirmed – WNV presence in previous year)			
- Virus activity last year	- Press release emphasizing source control - Public education - Organized source control effort	- Assess mosquito population - Initiate reporting of dead birds - Testing dead birds (up to 5/mo) - Initiate local source reduction - Initiate larval control activities	- Intensity of prior year activity, prevalence of culex larvae, weather
Stage II Risk (WNV presence confirmed with limited bird and mosquito surveillance data)			
- Identification of WNV in one or a few dead birds in Camb. **OR** - Identification of WNV in one bird-biting mosquito batch (pool) in Cambridge	- As above AND… - Public notification of WNV presence in community - Public notification of info update resources (Info Line)	- As above AND… - Intensify source reduction - Initiate enhanced passive human surveillance (state contacts MDs)	- Use of adult mosquito control is not recommended following findings of a single WNv-+ bird

Surveillance Data	Public Information	Surveillance/Control	Assessment
Stage III Risk (WNV presence in human-biting mosquitoes, increasing dead bird densities)			
- Identification of WNV in single positive batch of mammal-biting ("bridge vector") mosquitoes **OR** - ID of WNV in multiple batches of ANY variety of mosquito **OR** - Increasing density of dead birds	- Multimedia press release (TV, radio, newspapers) - Intensify local education	- As above AND... - Intensive mosquito collection (State Lab responsibility) - Live bird serology studies (State) - Larval surveys for popul. & ID - Further intensify source reduction - Review current ground-based adult mosquito control capacity and assess ability to respond	- Evaluation of mosquito trapping and surveillance findings, assess indices of disease transmission with MDPH and adjacent local health departments
Stage IV Risk (Local human WNV case; other surveillance data)			
- Laboratory confirmation of a human infection (encephalitis or or death) in Cambridge and presumed to be locally acquired - **OR** laboratory confirmation of a human WNV infection in an adjacent community and presumed to be locally acquired **WITH** the confirmed presence of mammal-biting mosquitoes **AND/OR** the presence of infected birds **AND/OR** the presence of infected mosquito batch(es)	- As above **AND**... - State public health alert for at risk areas - Press release emphasizing personal protection, symptoms - State notification of local health care providers and hospitals - Intensify education - Initiate local spray notification plan if indicated (TV, radio, billboards, flyers, reverse 911)	- Increased mosquito and bird surveillance - Statewide active human surveillance - Consider targeted truck spraying in areas with multiple dead birds and/or WNV-positive mosquito batches using criteria established - (Part I) - Continued larviciding as indicated - Continued source control as indicated	- Factors to be considered in in determining whether to initiate truck- based spraying include density of WNv + birds, abundance of WNv+ mosquitoes time of year, weather, occurrence of scheduled events near areas supporting large mosquito populations, continued assessment of indices of disease transmission with MDPH and adjacent local health departments
Stage V Risk (Multiple human WNV cases)			
- **Multiple human cases of WNV** infection (encephalitis or death)	- As above **AND...** - State and local recommendations to limit outdoor activities for vulnerable populations	- As above **AND**... - Continued assessment of option for targeted spraying based on risk of human disease and seasonal or meteorological factors	Continued assessment of risk of disease transmission with MDPH and health departments of adjacent communities

ATTACHMENT C

Addendum to the Cambridge West Nile virus Response Plan (2001) by members of the West Nile Virus Advisory Group Regarding the Use of Pesticides

Members of the Advisory Committee would like to take this opportunity to reiterate our concern about the broadcast use of pesticides as a response to evidence of the presence of West Nile virus in or near our community.

Many in the Advisory Group have concluded that broadcast spraying has not yet been shown either safe or effective. Such a showing would be required if the threat of West Nile would be countered with a vaccine, even a voluntarily administered one. Thus a sharply reduced requirement for pesticide spraying that involves involuntary exposure of the population irrespective of risk factors, possible sensitive status, or personal choice seems inconsistent at best and a contradiction to accepted public health principles, at worst.

There are persuasive reasons to believe that some people might suffer harm from exposure to resmethrin and/or piperonyl butoxide, the key ingredients of the truck-based pesticide spray used to reduce the adult mosquito population. The risks associated with the application of such toxins, although of uncertain magnitude, should be outweighed by persuasive evidence that there are greater benefits to the community and environment from use of the spray before it is applied. In our view, these arguments have yet to be made.

An important element in any such argument is the link between the application of pesticides and the prevention of transmission of disease to humans, particularly in an urban environment. A number of factors contribute to reduced effectiveness of reaching the target mosquitoes with the truck-based application of pesticides in Cambridge:

- the most prevalent local bridge-vector mosquitoes prefer birds, particularly birds at rest, of which there are few in the street and building-front areas at the time the spray is applied;
- roosting areas may be higher than the reach of the spray;
- buildings close to the street restrict the lateral spread of the spray;
- backyard roosting areas are not effectively reached because close spacing of buildings limits penetration beyond the buildings;
- the period that the spray is effective and airborne is of relatively short duration.

These views are mirrored in views of the Centers for Disease Control and Prevention (CDC) expressed in their April, 2001, report "Epidemic/Epizootic West Nile Virus in the United States: Revised Guidelines for Surveillance, Prevention, and Control." The Report notes that "ground applications are prone to skips and patchy coverage in areas where road coverage is not adequate or in which the habitat contains significant barriers to spray dispersal and penetration. " Because of these and other factors, the effectiveness of truck-based spraying in an urban area such as Cambridge will likely be significantly less than the laboratory measured effectiveness of the pesticides.

Addendum to the Cambridge West Nile virus Response Plan (2001) by members of the West Nile Virus Advisory Group Regarding the Use of Pesticides (cont.)

The prevalence of residential buildings close to the roadway not only creates a barrier to reaching backyard populations of mosquitoes, it also increases the likelihood of the pesticides reaching human and domesticated animal receptors in those intervening buildings. During the warmest summer nights, when weather conditions are best for mosquito breeding, many residents leave windows open with fans operational for ventilation, and it should not be expected that residents will keep their windows closed for entire evenings. The remaining oil-based residue on personal items may result in continued chemical exposure to residents long after the loss of effectiveness against mosquitoes.

It is also not known what proportion of mosquitoes must be affected to have a meaningful and positive effect on transmission of the disease to humans. Arguments can and have been made that adulticiding may even have the paradoxical effect of increasing risk by its effects on predators or the selection of healthier mosquitoes with longer lives. These uncertainties are a reflection of our substantial lack of knowledge about certain important facts, an ignorance which should provoke further caution.

Pesticides are chemicals specially engineered and selected because of their extreme toxicity to certain target species. However, pesticides, including all those under consideration for use against mosquitoes, also have toxic effects on non-target species, including humans, to varying degrees. Certain populations (such as children and asthmatics) are more sensitive to chemicals, so the broadcast spraying of these toxins represents a purposeful, involuntary exposure of the population to potentially serious risks, while the health benefits are uncertain.

Many of the long-term environmental effects of repeated, intensified pesticide application (which might be expected if spraying is chosen in an attempt to contain WNv), are plausible and probable. The benefits, unfortunately are not as lasting. Adulticiding only reduces the mosquito population temporarily, and the amount of the reduction in an urban setting has not been determined. Therefore, repeated applications would be necessary if this control mechanism is chosen, while the impact on the ecosystem of all the effects of the pesticides, both acute and lingering, is unknown.

Timing of the spraying is critical even in the best and undemonstrated case that it has a positive effect on disease transmission. By the time a human case has incubated the disease, sought medical attention, been successfully diagnosed (which usually takes several weeks), the process of disease transmission has already gone on for at least a month. As indicated in the Response Plan, however, prophylactic application prior to human cases is not favored either. These conditions would seem to logically exclude adulticiding as a response. The CDC, an agency that still recommends adulticiding in some circumstances, is also not optimistic about its effect, noting that "adulticiding, the

Addendum to the Cambridge West Nile virus Response Plan (2001) by members of the West Nile Virus Advisory Group Regarding the Use of Pesticides (cont.)

application of chemicals to kill adult mosquitoes by ground or aerial applications, is usually the least efficient mosquito control technique."

Because of the potential risks of the pesticides to personal health and the environment, the lack of evidence to indicate that spraying prevents transmission of WNv to people, and the difficulty in timing a potentially effective spray campaign, we believe that spraying of pesticides, and in particular, truck-based broadcast spraying, should not be part of the WNv control plan until such time that the benefits can be demonstrated to outweigh the public health and environmental costs associated with spraying.

We understand that such a policy raises the possibility that one or more cases of West Nile encephalitis, a serious disease, could arise in our community in circumstances where no spraying for adult mosquitoes has been undertaken, despite recommendations to the contrary by others. But such cases have also arisen in communities that have undertaken vigorous and aggressive spraying campaigns. The truth is that we as yet have little understanding of the way this virus appears from year to year. The history of West Nile outbreaks in Europe and the Middle East and the behavior of similar arboviral diseases indicate that we can expect an unpredictable fluctuation from year to year that is not affected in a known way by preventive measures against adult mosquitoes. Indeed most experts believe that West Nile virus, like other diseases, has now become part of the public health landscape.

As medical science progresses, and very importantly, if the Commonwealth invests sufficient resources into gathering the required information, we may look forward to having the basis for a rational preventive strategy that is scientifically grounded. But that moment has not yet arrived. Until it does, the undersigned Committee members urge the Department of Public Health to avoid use of broadcast spraying against adult mosquitoes that may carry West Nile virus.

Sarah James, City Planning
✓ Sheldon Krimsky, PhD, Professor, Dept. of Urban and Environmental Policy and Planning, Tufts University; Adjunct Professor, Department of Family Medicine and Community Health, Tufts School of Medicine
Monica Leon, Elementary Education, parent
✓ Richard Levins, PhD, Professor, Dept. of Population and International Health, Harvard School of Public Health
Michael Nakagawa, Biomedical Engineering, parent
✓ David Ozonoff, MD, MPH, Professor and Chair, Dept. of Environmental Health, Boston University School of Public Health
Allen West, PhD, Professor of Chemistry Emeritus, Lawrence University

=Mike Nakagawa ATTACHMENT D

From: Craig Kelley [votecraig@worldnet.att.net]
Sent: Wednesday, May 09, 2001 3:53 PM
To: Mike Nakagawa
Subject: Comments for WNV Hearing tonight.

Mike-

I would appreciate your either reading or entering these comments into the formal record.

Thank you.

Craig Kelley
6 Saint Gerard Terrace
Cambridge, MA 02140
617-354-8353

Good evening:

I write in opposition to suggestions that West Nile Virus (WNV) should be controlled by aerial spraying of toxics. In its most basic form, this sort of disease control involves the spraying of poisons designed to kill on contact. Once those poisons are sprayed, there are no ways to mitigate their impact on the environment, even if those impacts are neither planned nor beneficial.

In particular, there is a mass of evidence that suggests that the various chemicals and poisons in anti-mosquito sprays are not as benign as advertised. Further, these chemcials may break down into toxic substances that linger in the environment and home air conditioning systems. Finally, these chemicals appear to have a lengthy negative impact on individuals with chemical sensitivities as well as on workers who are improperly exposed during spraying operations.

There is no data that shows aerial spraying actually has any meaningful impact on controlling the WNV threat. On the other hand, there is evidence of cross-species kills, which is to be expected with a blanket application of contact poison. Street sprays do not reach many non-street areas in the rear of properties, floating instead into people's bedrooms, living rooms and dining rooms nearer the street. Thus, mosquitoes are not necessarily exposed, but people are.

The City should focus its efforts on habitat reduction and citizen awareness of personal protection measures. Only under the most extreme circumstances should the City consider even limited spraying.

Thank you.

Craig Kelley

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City of Cambridge

HEALTH AND ENVIRONMENT
Councillor Henrietta Davis, Chair
Councillor Kathleen L. Born
Councillor Jim Braude

In City Council May 21, 2001

The Health and Environment Committee conducted a public meeting on Wednesday, May 9, 2001 at 7:12 p.m. in the Sullivan Chamber.

The purpose of the meeting was to receive a presentation by the Cambridge Public Health Department on the City's intervention plan for the West Nile Virus.

Present at the meeting were Councillor Davis, Chair of the Committee; Councillor Braude; Councillor Born; Harold Cox, Chief Public Health Officer; Ricki Lacy, Director of Public Health Nursing; Sam Lipson, Director of Environmental Health, Public Health Alliance; and Donna P. Lopez, Deputy City Clerk.

Councillor Davis opened the meeting and stated the purpose. She stated that Harold Cox, Chief Public Health Officer, would make a presentation.

Mr. Cox presented to the committee a document entitled "Cambridge West Nile Virus Response Plan for 2001" **(ATTACHMENT A)** Last year, he stated, there was great concern when a bird and mosquito pools were discovered with the West Nile Virus. The action that was taken was as follows:

- Storm drains were treated with a larvicide;
- Information was disseminated to the public about the West Nile Virus; and
- Spraying was conducted in the city.

This action raised three concerns:

- The notification to the public about the spraying;
- The safety of the spraying; and
- The efficacy of the spraying.

Boston, Cambridge, Newton and Brookline made a decision to spray. A statewide planning group was established to develop a process regarding spraying, he said. The City Council requested the Public Health Department to convene a larger group. On January 31, 2001 a citywide hearing was held and an advisory group was established. The advisory group met with the Public Health Department to discuss concerns and a report was compiled. The report includes an addendum from the advisory group because the advisory group, which contained members of the environmental, biomedical engineering and medical and chemistry fields, had concerns. The report, he said,

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Committee Report #5

Committee Report from Councillor Henrietta Davis, Chair of the Health and Environment Committee for a meeting held on May 9, 2001 to receive a presentation by the Cambridge Public Health Department on the City's intervention plan for the West Nile Virus.

In City Council May 21, 2001

Report Accepted.

PLACED ON FILE on motion of Councillor Davis.