City of Champaign

REPORT TO CITY COUNCIL

FROM: Steven C. Carter, City Manager

DATE: March 7, 2003

SUBJECT: WEST NILE VIRUS STATUS REPORT (SS 2003-019)

A. Introduction: The purpose of this report is to provide information on the West Nile virus outbreak last year in the community, the expected virus conditions for next summer, the City's current mosquito disease program, and some possible responses to this threat. Council guidance is requested.

B. Recommended Action: The Administration recommends that staff be directed to negotiate an enhanced mosquito control program midway between the current level and the program as recommended by Dr. Novak.

C. Previous Council Action:

¢# Council approved the contract for the current encephalitis program on July 6, 1993 (CB No. 93-192) and the program has been funded annually since then.

D. Background:

1. History. The City of Champaign has participated in an encephalitis control program since the 1970's. The program began in response to an outbreak of St. Louis Encephalitis during that decade. The City of Champaign, City of Urbana, Village of Savoy, and the University of Illinois jointly participate in the program. University of Illinois faculty and employees of the Natural History Survey staff this program. Dr. Bob Novak, an entomologist with the Natural History Survey and mosquito expert, administers the program. The cities and the University provide funding and broad oversight of the program.

2. Program Elements. The program utilizes Integrated Pest Management (IPM) to provide control of the target mosquito species. IPM protocols call for targeted treatment of vector (disease carrying) mosquitoes. The main effort in past years has been to identify breeding areas for the targeted mosquito species and use larvacidal application to prevent maturation of these targeted species. Larvacidal treatment consists of application of one of two products to the standing water areas that harbor mosquito eggs.

3. Target Areas. Mosquitoes generally breed in sheltered, water-covered areas with some vegetation present. Typical breeding areas include marshy or swamping areas, especially where weeds or other vegetative coverage is present. Backyard impoundments include flowerpots, poorly maintained gutters, old tires, birdbaths, or any other container not regularly emptied.

Storm sewer inlets are also favorable breeding sites.

4. West Nile Virus. West Nile virus first emerged in the United States in the New York metropolitan area in the fall of 1999. Since then, the virus, which can be transmitted to humans by the bite of an infected mosquito, has quickly spread across the country and, in 2002, reached California.

In Illinois, West Nile virus was first identified in September 2001 when laboratory tests confirmed its presence in two dead crows found in the Chicago metropolitan area. In 2002, birds, mosquitoes and horses in 100 of the State's 102 counties were reported positive for West Nile virus and the first human cases and deaths from West Nile virus illness in Illinois were reported in August 2002. By the end of the year, the State led the nation with 877 confirmed human cases and 62 deaths. The Illinois Department of Public Health (IDPH) maintains a sophisticated disease surveillance system to monitor animals and insects that can spread the virus: crows and blue jays, mosquitoes and horses. Mosquitoes, primarily the Culex species but other species as well, also carry the virus and can get it by feeding on infected birds. There are 138 bird species that have been found to be virus carriers in the United States. The surveillance system also includes infectious disease physicians, hospital laboratory directors and infection control practitioners, local health departments and staff from IDPH's laboratory, environmental health and infectious diseases divisions who test for and report suspect or confirmed cases of various diseases that can be caused by mosquito-borne viruses. One reason that the number of reported Illinois cases is higher than other locations may be the State's thorough system of detection and surveillance.

5. West Nile Virus Morbidity. Mild cases of West Nile infections may cause a slight fever or headache. More severe infections are marked by a rapid onset of a high fever with head and body aches, disorientation, tremors, convulsions and, in the most severe cases, paralysis or death. Usually symptoms occur from three to 14 days after the bite of an infected mosquito. Persons at the highest risk for serious illness are those 50 years of age or older. People with compromised immune systems are also a high-risk group.

6. Prevention. The best way to prevent West Nile encephalitis and other mosquito-borne illnesses is to reduce the number of mosquitoes around homes and in neighborhoods by eliminating inadvertent or unintentional breeding sites and to take personal precautions to avoid mosquito bites. The next level of protection, mosquito abatement, carries greater cost and attempts to reduce the mosquito population by killing mosquitoes. The City's program does this by use of larvacidal treatments of breeding areas. Another level of control, killing adult mosquitoes by targeting adult populations, carries an even greater expense. Adult spraying programs are recommended only on a limited basis in response to a specific infestation in targeted areas.

7. Disease Presence in the Area. As of February 7, Champaign County had two confirmed human cases of the West Nile virus, but no deaths. Human deaths did occur in Macon County (3), Edgar County (1), and Moultrie County (1). There were numerous positive (57 total) viral findings in birds and mosquitoes in Champaign, beginning in mid-June 2002. Twenty-eight horses were also infected in Champaign County. Horses suffer a high mortality, approximately 40%, when infected. Staff is expecting the virus to maintain its presence in the area.

8. IDPH Recommendations for Community Response. The Illinois Department of Health has

produced a response document for the West Nile virus. The document can be found at www.idhp.state.il.us/enhealth/wnvhealthcare.htm. The recommended responses have been incorporated into the current City program. These responses generally can be described as education, surveillance, and treatment. Neither IDPH nor any other State agency, provide any direct control activities. Grants were provided in 2002 in some counties experiencing human fatalities. The total grant funding for these were approximately $200,000 across the State.

9. Agreement for Current Program. The current program operates under an agreement between the City of Champaign and the Natural History Survey. Similar agreements for the City of Urbana and the University of Illinois provide for the jointly operated program. Savoy participates in the program with an annual contribution but without a formal agreement. The agreement with the Natural History Survey provides for payments of up to $26,800 from the three agencies with: Champaign paying up to $17,000, Urbana paying up to $7,300, and the University paying up to $2,500. The current budget provides the first $10,000 of expenses to be split equally. Subsequent expenses are paid equally by Urbana and Champaign until Urbana has expended its maximum contribution and Champaign pays all additional cost. In previous years, the maximum amount has not been required. In FY 2001-2002, Champaign's contribution totaled $15,919. At the time of the agreement, the contributions were based on the population of the respective agencies and recognized non-cash, in-kind contributions by the University. Currently, Savoy also contributes $2,500 annually. It is important to note that Dr. Novak is not paid for the administration or for any of his activities involved in the program. The only paid employees are the scout supervisors and scouts, generally students working as part-time seasonal employees for the program.

10. Proposed Changes. In response to the severity of this new mosquito-borne disease, Dr. Novak has proposed a large increase in the current encephalitis control program. His recommendation is to continue the current activities but at a greater level, with additional scouting and additional treatment. The total program costs would increase the program's expense from its current authorized budget of approximately $27,000 to $70,850. Most of the additional cost would be for additional staff. The proposal includes hiring a full-time program supervisor/administrator with a direct annual cost of $25,000 and benefit costs of $6,250 for a total of $31,250. Other increases include $4,300 for additional seasonal scouts, approximately $1,700 for additional pesticides, $3,000 for automobile expense, and $1,200 for additional equipment and supplies. Hiring a full-time supervisor/administrator will allow for scouting treatment prior to and at the end of the summer when the seasonal scouts are in school and less available. The position will also provide for additional off-season administrative activity needed to plan and assess seasonal activity.

11. Current Status. Staff has been discussing the impact of the West Nile virus, Dr. Novak's proposed changes, and the various aspects of this development with the involved agencies, and the Champaign-Urbana Public Health District, since last fall. At this time, there is no agreement on how to proceed. Staff from Urbana and the University have agreed that some increase in support of the current control efforts may be warranted but have not agreed that the full amount and all changes recommended by Dr. Novak are possible at this time due to budget constraints. Dr. Novak has been asked if the program recommendations he has proposed can be scaled back. He has responded that his recommendations are at the lowest responsible response given the risk of the disease. He feels that a recommendation for a lower level response from him is inconsistent with his experience and knowledge. He further feels his participation in a lower level response could be interpreted as his endorsement of a program that may be inadequate.

12. Funding Issues. The current agreement provides that the majority of the program funding (up to $17,000) is provided by the City of Champaign. The City of Urbana contributes approximately $7,300. The University pays up to $2,500. The funding levels agreed to when the agreement was adopted were based in part on previous program funding levels and in-kind contributions from the University. A change in organization at the University in the intervening years has removed Dr. Novak's lab from the University and into the Natural History Survey. This effectively means the University does not support the lab as they did before. The in-kind contributions previously attributed to the University no longer are University contributions, but are now State of Illinois contributions.

At least one alternative method for sharing the expense for the program exist. A population-based split based on 2000 census data with Champaign population of 67,518, Urbana population of 36,395, Savoy population of 4,476, and the University with an estimated population of 10,700 students living in University residence halls and married student housing would result in a change in funding shown below.

	Current Maximum Contribution	Population	Percentage Based on Population*	Proposed Program Option*	Proposed Midpoint Funding
Champaign	$17,000	67,518	57%	$40,384.50	$28,500
Urbana	$7,300	36,395	31%	$21,963.50	$15,500
U of I	$2,500	10,700	9%	$6,376.50	$4,500
Savoy	$2,500	4,500	4%	$2,834.00	$2,000
Total	**$29,300**	**119,113**		**$71,558.50**	**$50,500**

*Does not total 100% due to rounding

A second funding mechanism could be area based. Staff has begun discussing an area-based split but has not completed the evaluation. Complicating factors for an area-based budget include land use, especially the large amount of farm acreage in the University's land inventory.

13. Negotiations Ongoing. At this time it is unclear if all the entities will fund the full proposal. This raises a question as to whether a higher-level program can be done in one area or a scaled back program can be agreed upon. A fall back position would be for the City to carry out its own program at a higher level with additional scouting and treatment within the City limits. The other agencies could continue a program at current or somewhat enhanced levels. Staff has reviewed a Naperville program run as a sole agency operation. A description is attached. Naperville has a population of 133,000 and spent $60,000 in their mosquito program in 2002. They have $80,000 budgeted for 2003.

D. Alternatives:

1. Authorize staff to negotiate an agreement approximately midway between the current program and proposed program, with a total cost of about $50,000 and Champaign's contribution at $28,500.

2. Authorize staff to negotiate an agreement for the full proposed expanded program with Champaign contributing up to $40,385.

3. Continue program at current financial levels.

E. Discussion of Alternatives:

Alternative 1 would direct staff to negotiate an enhanced program but less than the amount proposed by Dr. Novak.

a. Advantages

- A measured response to the West Nile virus outbreak
- More consistent with budget conditions

b. Disadvantages

- May not be successful negotiating this change
- Requires additional expenditure

Alternative 2 would direct staff to attempt to negotiate a new agreement for mosquito control among participating agencies.

a. Advantages

- Would result in a program recommended by Dr. Novak
- Best chance of reducing risk of West Nile virus infection and resulting illness and death

b. Disadvantages

- May not be successful negotiating this change due to budget constraints
- Requires additional expenditure

Alternative 3 would do nothing and continue the program at the current level of funding. It may not be possible to continue current activities even at current funding. Dr. Novak has indicated that his participation in a program less robust than recommended would be an ethical conflict for him.

a. Advantages

- Does not require additional funding
- Does not require negotiation of a new agreement with participating agencies

b. Disadvantages

- May require City staff to attempt to replace the expertise of Dr. Novak
- Level of mosquito control may not be adequate to address growth of this disease

E. Community Input: No community input has been sought on this matter outside of the Council meeting.

F. Budget Impact: The budget impact of Council direction could range from the current funding level of $17,000 (maximum) to a higher level dependant on Council's willingness to fund the program at a higher level than the other participants in the program. Three possibilities for funding sources for any increase have been identified. Two one-time funding categories are savings pools generated in previous years from unspent budgeted funds. A City-wide reserve of departmental savings of approximately $150,000 would be available as would a similar Public Works Department savings pool with approximately $14,000 available. Use of the storm water management fund could provide ongoing funding if directed by Council.

G. Staffing Impact: Negotiation of a new agreement is expected to take 40 to 60 hours of staff time. The Special Services Manager would be responsible for this. Review of the agreement would require several hours of Legal staff time. Additional staff time may be required for educational efforts and responding to citizen calls and concerns. Last season these efforts took considerable time but are expected to lessen as concerns about this virus wane. If staff is not successful at negotiating a change in the overall program, there could be significant staff impacts. Oversight responsibilities could increase drastically if Dr. Novak withdrew from participation. Staff is also considering training property maintenance inspectors to include mosquito breeding areas in their property inspections.

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Attachments: Proposed Budget for the CUUSVCP for 2003
City of Naperville Mosquito Abatement Program Information
Memo from Illinois Department of Health Regarding Mosquito Control and Prevention of West Nile Viral Encephalitis

J://COUNCIL-DOCUMENTS/2003/3-18-03/West Nile Virus Update.doc