

APPENDIX A: RESPONSE TO COMMENTS ON THE DRAFT SCOPE OF ANALYSIS

A. INTRODUCTION

This appendix summarizes and responds to all substantive verbal and written comments received during the public comment period on the Draft Scope of Analysis Document for the Preparation of the *Adult Mosquito Control Programs* Draft Environmental Impact Statement (DEIS). Public review of the Draft Scope of Analysis began on May 18, 2000, with the publication of the Draft Scope of Analysis. New York City Department of Health (NYCDOH) held public hearings in each of the five New York City boroughs on the Draft Scope of Analysis June 19, 20, 21, 22 and 23, 2000. The comment period remained open until July 14, 2000.

Section B identifies the persons who testified at the public hearings or provided written comments on the Draft Scope of Analysis. Comments (and corresponding responses) are presented in Section C, first by testimony received during the public hearings, followed by the written comments received by NYCDOH. Since many of the comments were similar in subject matter, the comments were consolidated and categorized by topic. When a particular topic was addressed by more than one commentor, the numbers which correspond to those commentors (see table below) appear at the end of the comment; hence, many comments have more than one number after them in parentheses.

B. LIST OF GROUPS AND INDIVIDUALS WHO COMMENTED ON THE DRAFT SCOPE OF ANALYSIS DOCUMENT

COMMENTORS

1. Michelle Newman, Bronx Borough President's Office (Statement presented at Manhattan Hearing, June 19, 2000).
2. Bernard J. Blum, President, Friends of Rockaway, Inc. (Statement presented at Manhattan Hearing, June 19, 2000).
3. Sondra Levin, Sierra Club, (Statement presented at Manhattan Hearing, June 19, 2000).
4. Louis Duplan, Health Policy Analyst, Manhattan Borough President's (Statement presented at Manhattan Hearing, June 19, 2000)
5. Stephanie Snow, Chairperson, Pesticide Issues Sierra Club (Statement presented at Manhattan Hearing, June 19, 2000).
6. Joel Kupferman, New York Environmental Law and Justice Project Club (Statement presented at Manhattan Hearing, June 19, 2000).
7. Mitchel Cohen, Green Party (Statement presented at Manhattan Hearing, June 19, 2000).
8. Michael McMahon for Elizabeth A. Connelly, Assemblywoman (Statement presented at Staten Island Hearing, June 20, 2000).

9. Ellison Van Name, President, L.C.M.I. Corporation (Statement presented at Staten Island Hearing, June 20, 2000).
10. Councilman Fiala, Councilman (Statement presented at Staten Island Hearing, June 20, 2000).
11. Elaine Tarstunio, Staten Island Resident (Statement presented at Staten Island Hearing, June 20, 2000).
12. Dee G. Vandenburg, Staten Island Taxpayers Association, Inc. (Statement presented at Staten Island Hearing, June 20, 2000).
13. Katherine Barbera, Staten Island Citizens for Healthy Alternatives (Statement presented at Staten Island Hearing, June 20, 2000).
14. Jim Scarcella, Natural Resources Protective Association (Statement presented at Staten Island Hearing, June 20, 2000).
15. Chris Rooney, Community Board 1, Staten Island (Statement presented at Staten Island Hearing, June 20, 2000).
16. Lianne Ericson, Staten Island Resident (Statement presented at Staten Island Hearing, June 20, 2000).
17. Anita Lerman, Candidate for Congress (Statement presented at Staten Island Hearing, June 20, 2000).
18. Thomas Wm. Hamilton, County Chair, Independence Party of Richmond County Congress (Statement presented at Staten Island Hearing, June 20, 2000).
19. Michelle Newman, Bronx Borough President's Office (Statement presented at Bronx Hearing, June 21, 2000).
20. Elizabeth Shanklin, Riverdale Greens Congress (Statement presented at Bronx Hearing, June 21, 2000).
21. Chris Boyd for Howard Golden, Brooklyn Borough President's Office (Statement presented at Brooklyn Hearing, June 22, 2000).
22. Diane Haavind, Brooklyn Resident (Statement presented at Brooklyn Hearing, June 22, 2000).
23. Mary Buchwald, New York City Greens (Statement presented at Brooklyn Hearing, June 22, 2000).
24. Catherine Paczkowski, New York City Greens (Statement presented at Brooklyn Hearing, June 22, 2000).
25. Rachel Treichler, New York City Greens (Statement presented at Brooklyn Hearing, June 22, 2000).
26. Carl Lawrence, New York City Greens (Statement presented at Brooklyn Hearing, June 22, 2000).
27. David Robinson, United Church of Christ (Statement presented at Brooklyn Hearing, June 22, 2000).
28. Mariana Mohylyn-Blume, Brooklyn Resident (Statement presented at Brooklyn Hearing, June 22, 2000).
29. Heather Yukon, Brooklyn Resident (Statement presented at Brooklyn Hearing, June 22, 2000).

30. Ted Lewis, Green Party (Statement presented at Brooklyn Hearing, June 22, 2000).
31. Debby Schwartz, Brooklyn Resident (Statement presented at Brooklyn Hearing, June 22, 2000).
32. Joyce Shepard, Citizen's Action Committee for Change (Statement presented at Queens Hearing, June 23, 2000).
33. Joan Gold, Citizen's Action Committee for Change (Statement presented at Queens Hearing, June 23, 2000).
34. Joseph Lamour, Citizen Alert (Statement presented at Queens Hearing, June 23, 2000).
35. Rosemarie Iacovone, Representing Senator Maltesa (Statement presented at Queens Hearing, June 23, 2000).
36. Richard Jannaccio, West Flushing Civic Association (Statement presented at Queens Hearing, June 23, 2000).
37. Frank Eadie, Sierra Club (Statement presented at Queens Hearing, June 23, 2000).
38. Josephine Jones, Queens Resident (Statement presented at Queens Hearing, June 23, 2000).
39. Louis Duplan, Health Policy Analyst, Manhattan Borough President's Office (Written comments received, June 19, 2000).
40. Bernard J. Blum, President, Friends of Rockaway, Inc. (Written comments received, June 19, 2000).
41. Fernando Ferrer, Bronx Borough President (Written comments received, June 19, 2000).
42. Thomas Wm. Hamilton, County Chair, Independence Party of Richmond County (Written comments received, June 20, 2000).
43. Michael McMahon for Elizabeth A. Connelly, Assemblywoman, (Written comments received, June 20, 2000).
44. Anita Lerman, Candidate for Congress (Written comments received, June 20, 2000).
45. Fernando Ferrer, Bronx Borough President (Written comments received, June 21, 2000).
46. Chris Boyd for Howard Golden, Brooklyn Borough President's Office (Written comments received, June 22, 2000).
47. Joyce Shepard, Citizen's Action Committee for Change (Written comments received, June 23, 2000).
48. James Scarcella, Natural Resources Protective Association (Written comment sheet, July 6, 2000).
49. Guy V. Molinari, Staten Island Borough President (Written comment sheet, July 6, 2000).
50. Jeanette Taono, Staten Island Resident (Written comment sheet, July 6, 2000).
51. Donna L'Amour (Written comments received, July 6, 2000).
52. Elaine Tarstunio, Staten Island Resident (Written comments received, July 6, 2000).
53. Ellen Kabsek, Staten Island Resident (Written comment sheet, July 6, 2000).
54. Herman and Sylvia Zaage, Staten Island Resident (Written comments received, July 6, 2000).

55. Katherine Barbera and Louis Blois, Staten Island Citizens for Healthy Alternatives (Written comments received, July 7, 2000).
56. Nancy Kim, Director, Division of Environmental Health, NYSDOH (Written comments received, July 7, 2000).
57. Joel Kupferman, New York Environmental Law and Justice Project (Written comments received, July 7, 2000).
58. Sondra Levin, NYC Group of the Sierra Club (Written comments received, July 11, 2000).
59. Lionel J. Gotcliffs, Queens Resident (Written comments received, July 11, 2000).
60. James W. Pitts, President, Buffalo Common Council (Written comments received, July 11, 2000).
61. Henry J. Bardey, Staten Island Resident (Written comments sheet, July 11, 2000).
62. Gregory S. Kidd, Science and Legal Policy Director, National Coalition Against the Misuse of Pesticides (Written comments received, July 12, 2000).
63. Claire Shulman, Queens Borough President, Queens Borough President's Office (Written comments received, July 12, 2000).
64. Diane Haavind, Brooklyn Resident (Written comments sheet, July 12, 2000).
65. Adrian J. Joyce, Chairperson, Community Board 7, Queens (Written comments received).
66. Stephanie Berghash, Chairperson, Pesticide Issues, Sierra Club NY (Written comments sheet, July 14, 2000).

C. COMMENTS AND RESPONSES

SCOPING DOCUMENT REVIEW AND COMMENT PERIOD

Comment 1: The Public Hearings on the Draft Scope of Analysis should be held in the communities of the selected representative areas to maximize public participation. These include Queens Community Boards 7, 10, and 14. (63)

Response: The hearings on the proposed Draft Scope of Analysis were held in all five boroughs of New York over a one week period in June 2000. The public was also invited to submit written comments on the Draft Scope of Analysis from the date of issuance—May 18, 2000—through July 7, 2000. The comment period on the Draft Scope of Analysis was extended and held open until July 14, 2000. The hearings on the Draft Scope of Analysis were held at locations that are in highly populated areas of each borough, accessible by mass transit, and allowed for speaker presentations and large attendance. The intention of the DEIS is to address City-wide actions. The representative areas were selected based on their ability to represent the various environment types and exposure pathways proposed for analyses in the DEIS. Results of the impact analyses in these areas could then be applied to any other location within the City with similar features. Therefore, the selection of the hearing locations was not dependent upon the representative study areas for analysis.

Comment 2: Why has the City failed to publicize these hearings on the Draft Scope of Analysis? Nobody knows about this hearing. There are only twenty people here. If it was properly publicized, you would get a lot more input, and I think a truer reaction of the public as to the impacts. The hearing schedule was not in accordance with the

schedule in the local Staten Island Advance. There needs to be better advance notice of the hearings. (8,10,12,14,16,23)

Response: In advance of the hearings in all five counties of New York City, notices for the hearings on the Draft Scope of Analysis were published in the New York Daily News on May 31, 2000 and in the Environmental Notice Bulletin on May 24, 2000. In addition, NYCDOH's web site, which was a high profile Internet site in the summer of 2000, included copies of the Draft Scope of Analysis and notices of the hearings, which were readily accessible to the public. In addition, over 200 copies of the Draft Scope were delivered to the following: New York City Community Boards, Borough President's Offices, and Council Members, State and Federal Elected Officials, and various interested city, state and federal agencies.

Comment 3: I resent the fact that at such a well-attended hearing Dr. Cohen didn't have the time to come. (27)

Response: At each of the six hearings (two hearings were held in Manhattan, and one in each of the other boroughs), senior representatives from the New York City Department of Health (NYCDOH), New York City Department of Environmental Protection (NYCDEP), the Mayor's Office of Environmental Coordination (MOEC), and/or New York State Department of Health (NYSDOH) were in attendance. Senior NYCDOH and NYSDOH staff also made presentations at each of the hearings.

Comment 4: Why wasn't this process started at the end of last year? (8)

Response: The DEIS will include a discussion of the NYCDOH activities between the end of the 1999 control actions and the development of the Draft Scope of Analysis which was published in May 2000.

Comment 5: What responses to this Draft Scope of Analysis have been received from the federal government? (1)

Response: No written comments on the Draft Scope of Analysis have been received to date from federal agencies.

Comment 6: The Draft Scope of Analysis is certainly a step in the right direction. With the addition of the factors outlined herein, NYCDOH will produce a DEIS that will allow for an appropriate decision on the safety of the adult mosquito control plan. It is our great hope that NYCDOH will develop a plan that provides for the greatest protection of the public health, an approach that not only reflects the actual risks associated with mosquito-borne illness but also factors in the very real risks associated with exposure to pesticides. (3,62)

Response: The DEIS will evaluate the risks of illness from mosquito-borne viruses and exposure to pesticides and will provide information that will inform the further development of a plan that protects the public health.

Comment 7: I commend the Department of Health for presenting a Draft Scope of Analysis that appears quite thorough. However, I am quite concerned that page 21 of the Draft Scope states the rash conclusion that it is unlikely that most individuals would have adverse health effects under most circumstances from adulticide applications. Beginning your analysis with this thoughtless conclusion is a horrible mistake. When

we talk about the application of poisons that kill living things, like mosquitoes - the intended targets—and fish and birds and other wildlife—which we saw here on Staten Island last year as malathion was sprayed—the unintended targets, the more honest and thoughtful conclusion has to be that, yes, spraying adulticides will have harmful effects. (4,49,8,43)

Response: As stated in the Draft Scoping document, NYCDOH has not presumed in the preparation of the document that spraying of adulticides will have no potential adverse effects on human health or the environment. One of the purposes of the DEIS is to analyze the possible impacts of the proposed action on human health and the ecosystem, and to help NYCDOH develop a long-term program that properly considers the risk of adulticide application versus uncontrolled spraying.

Comment 8: It's not wise to assume that newly developed pesticides are going to be safe because their mechanism of action suggests that if they are going to be damaging the insects, they are going to be damaging animals all the way up the line to humans. Here are some other considerations that I think should be proven in the scoping document. If you believe that the benefits of using pesticides outweigh the risk, prove it. If you think the pesticides, despite the risks, are the most effective means of controlling mosquito populations, prove it. If you think that pesticides only give us few mosquitoes and couldn't possibly give us more mosquitoes, prove it. If you think pesticides are safe and do not endanger human health or the environment when used according to the instructions on the label, prove it. And if you think the applicators follow the instructions on the label, prove it. If you think some pesticides pose an unacceptable risk, but other pesticides pose only a minimal risk and, therefore, using them results in more good than harm, prove it. If you think using pesticides is better than doing nothing, prove it. Since I already know the answers to these questions, I'm opposed to the use of all so-called adulticides. When we offer safer toxins to replace more deadly ones, we are still sacrificing the health of many, many people, especially in a city the size of New York. And we are endorsing a deliberate act that can produce disease and death in the name of and under the unsupportable claim of preventing other disease and death. (36)

Response: The DEIS will carefully examine the possible impacts of applying pesticides in relation to human health and the environment. The DEIS will also assess other alternatives, such as taking no action other than the routine (larviciding, source reduction/surveillance/education) program. The relative risks associated with different adulticides, plus the on-going program elements involved in determining the overall effectiveness of controlling the spread on mosquito-borne viruses will be included in the DEIS. NYCDOH will examine the individual technical analyses of the DEIS (e.g., Public Health Risk Assessment) to assist in minimizing potential adverse impacts, which will be incorporated with its program development.

Comment 9: I am quite surprised that the Federal government has not conducted studies in the past relating to that which you now propose and does not have readily available the information that you seek, such as the effects of the poisons, the patterns in which the poisons will spread after they are sprayed, and the long-term endurance of these chemicals in our ecosystem. (8)

Response: The federal government has studied the potential effects of adulticides, although not at the degree of specificity to the New York City environment that the DEIS will. The DEIS will make use of available federal and state information on the use

of the adulticides under consideration. Information has been sought from NYSDOH, the New York State Department of Environmental Conservation (NYSDEC), the United States Environmental Protection Agency (USEPA), and pesticide vendors/distributors directly. The DEIS will incorporate into the risk analyses available federal, state, and private commercial information to examine the impact of adulticides on the many ecosystems in New York City and human health.

Comment 10: Impacts from pesticide exposure and impacts from the West Nile virus on New York City should be analyzed separately to determine which is more detrimental to the public and the regional environment. An assessment should include identifying how many people are likely to be protected by the use of pesticides, and how many are at risk (e.g., elderly, cancer and AIDS patients, pregnant women) of being harmed by pesticide exposure. NYCDOH has a number of critical health indicators used to identify areas more likely to experience a significant health response to pesticide exposure. The most “at risk” populations should be identified and evaluated to determine spraying guidelines for these areas. (6,8,29,30,35,36,37,46)

Response: One of the goals of the DEIS will be to identify the public health risks associated with pesticide exposures for various segments of the population (which include sensitive members of the population) under a broad range of conditions. In addition, the DEIS will provide information on the short and long term health effects of illnesses resulting from West Nile virus, and will also identify those segments of the population most at risk from the virus.

PROJECT OVERVIEW

Comment 11: On page 1 of the Draft Scope of Analysis, the second paragraph is confusing and, if used in the DEIS, should be rewritten. It also uses the term “potential outbreak in the adult mosquito population.” If that term is used in the EIS, tying it back to the decision matrix in the West Nile virus plan would be useful. Moreover, it isn't clear that outbreak is the proper terminology here. The document could be referring to high virus infectivity levels in adult mosquitoes, which could theoretically lead to increased virus transmission to humans, birds, or other animals. (56)

Response: The terminology and descriptions related to the proposed control of adult mosquitoes to control the potential transmission of the West Nile virus (or other mosquito-borne viruses) has been revised in the Final Scope of Analysis, and such revisions will also be included in the DEIS.

PROJECT PURPOSE AND NEED

Comment 12: On page 2 of the Draft Scope of Analysis, the first paragraph notes that seven elderly citizens died. In describing the impact of the West Nile virus, the document should include the number of people of all age groups that were infected with the virus and any others besides the elderly that became very ill. Mentioning only elderly citizens does not give a true indication of the potential seriousness of this disease and possibly other mosquito-borne diseases for the entire population. (56)

Response: The DEIS will more fully reflect the populations sensitive to West Nile virus, and the discussion on the consequences of illnesses relating to West Nile virus will be further elaborated.

Comment 13: On page 2 of the Draft Scope of Analysis, the third paragraph states, “A mosquito may become a carrier when it bites a bird, animal or human infected with the virus.” This statement should be confirmed in that it is unclear if a mosquito can become a carrier by biting animals or humans. (56)

Response: This statement has been revised for the Final Scope of Analysis.

MOSQUITO LIFE CYCLE AND VIRUS TRANSMISSION

Comment 14: There should be a life history and an examination of the behavior of West Nile virus vector species. (20,32)

Response: The DEIS will include an expanded discussion of mosquito species and transmission of viruses from adult mosquitoes.

Comment 15: On page 5 of the Draft Scope of Analysis, the last paragraph mentions four fundamental approaches toward mosquito control and management. Surveillance is extremely important and should be included. (39,56)

Response: The Final Scope of Analysis has been revised to include this comment.

Comment 16: After spraying, is the immune system of a mosquito compromised, making it more susceptible to West Nile virus? How does the behavior of mosquitoes change after spraying? Are mosquitoes more aggressive (i.e., do they bite more) after spraying? Chem-Tox.com has published data showing behavior of mosquitoes after spraying, and concludes that spraying makes mosquitoes become overactive, therefore, having the tendency to bite more. (20,32)

Response: The DEIS will include a discussion on how different adult mosquito control pesticides (i.e., organophosphates and pyrethroids) affect mosquitoes.

MOSQUITO CONTROL PLAN FOR 2000

Comment 17: Adequate scheduling notices should be provided so that the public—especially portions of the population susceptible to a more significant health response—is aware of these actions and can take the necessary precautions to protect themselves from spraying. (1,6,10,18,23,42,43,46,57,58)

Response: Since the publication of the Draft Scope of Analysis, the NYCDOH has undertaken adulticiding actions as part of the Mosquito Control Plan for 2000. The DEIS will provide a discussion of the actions employed during 2000 to notify the public and local, federal, and state agencies, as well as elected officials, of planned spraying activities in response to confirmed West Nile virus activity and of the recommended precautions to minimize contact with adulticides. Copies of NYCDOH Press Releases were posted at www.nyc.gov/health.

Comment 18: Identify and eradicate breeding grounds for mosquitoes (e.g., along the Bay Ridge Rail line in Brooklyn where there exists the largest collection of illegally dumped tires in New York City). (10,20,21,46)

Response: The City’s actions in 2000 to identify and eradicate breeding grounds in 2000 will be summarized in the DEIS.

Comment 19: Where is the provision to tell residents who to call and where to go to get a cholinesterase test? NYSDOH has not provided a list of hospitals and clinics that offer this service. (52)

Response: The NYCDOH has provided information to the public and providers about potential health effects of pesticides and has notified medical providers that they must report adverse effects related to pesticide exposures.

Cholinesterase testing is only used in instances of organophosphate poisoning and may be ordered by private practitioners and attending physicians in health care facilities. However, because cholinesterase levels vary widely even among healthy individuals, post-exposure testing for suspected toxicity is not considered useful when baseline levels are not available. Currently, there is no accepted laboratory test for pyrethroid poisoning. In 2000, the NYCDOH prepared and distributed information on mosquito control products, the potential routes for exposure, and possible adverse health effects to approximately 46,000 NYC area clinicians and all NYC hospitals.

Comment 20: The New York City Department of Parks and Recreation (NYCDPR), Army Corps of Engineers (ACOE), National Parks Service, and New York State Parks Commission must be notified of spraying of wetlands, parks and properties, and post the spraying initiative on their grounds 48 hours prior to spraying. (32)

All community facilities, hospitals, senior centers, schools, day care centers, and prisons must be included in the notification plan. The City can make sure to communicate any necessary precautions in a timely manner. This includes the production and dissemination of information through the Borough Presidents and other elected officials, Community Boards, medical facilities and community-based organizations. Any information must be provided in multiple languages and disseminated through multiple modes, including print, radio, and television. The Bronx Borough President appreciates that the City Department of Health has already been reaching out to the Community Boards and to his office and providing written information in multiple languages. He hopes that the City has sufficient staff to continue these types of efforts. The greater the communication and the stronger the working relationship between the City and the community, the more effective the response in the event of an outbreak. (1,32)

Response: Since the publication of the Draft Scope of Analysis, the NYCDOH has undertaken adulticiding actions as part of the Mosquito Control Plan for 2000. The DEIS will summarize actions undertaken by NYCDOH in 2000, including voluntary actions and those required by law. For adulticiding actions, there are no requirements to post notices on properties 48 hours prior to spraying. The DEIS will provide a discussion of the actions employed during 2000 to notify the public, local, federal, and state agencies as well as elected officials of planned spraying activities in response to positive detections of West Nile virus activity and the recommended precautions to minimize contact with adulticides.

Comment 21: Preventative measures and activities for mosquito abatement must be programmatic and ongoing to address chronic breeding areas including saltwater marsh areas such as DuBos Point in Rockaway. Additional issues with regard to mosquitoes in Queens include:

- Cleaning and application of larvicide to catch basins along the parkways;
- Follow up with a copy of the printout of action taken for locations reported via the stagnant water report form sent to the appropriate community board;
- A mobile van pick-up service to collect tires left by homeowners on designated dates. Homeowners are reluctant to drive to sanitation garages. In some cases a vehicle is not available and senior citizens may be unable to drive;
- A roving mobile van to pick up abandoned tires from the streets; and
- The New York City Department of Environmental Protection (NYCDEP) responsibility for addressing conditions attributed to damaged infrastructure. (63)

Response: The DEIS will further elaborate on the measures undertaken in 2000 to reduce mosquito breeding areas. In addition, the DEIS will include a discussion of the known mosquito species that transmit viruses to animals and humans.

ROUTINE PROGRAM

Comment 22: On page 5 of the Draft Scope of Analysis, the statement is made that portions of the comprehensive plan may be funded by New York State. Suggested rewording is portions may be reimbursed depending on the level of virus activity. (56)

Response: The Final Scope of Analysis has revised this statement.

Comment 23: The DEIS should look at both the routine mosquito control program, which focuses on breeding grounds and eliminating mosquito larvae, and the adult mosquito control program, which contemplates the spraying of various pesticides to control adult mosquitoes. (21,46)

Response: As discussed in the Draft Scope of Analysis, on April 12, 2000, NYCDOH, acting as lead agency for CEQR review, conducted an environmental assessment and determined that the Routine Program will not have the potential for significant adverse impacts on public health or the environment and issued a Negative Declaration. NYCDOH is preparing a DEIS for the proposed Mosquito-Borne Disease Control Plan for Adult Mosquitoes because it could include City-wide aerial spraying of insecticides targeted at adult mosquitoes (i.e., adulticides). The potential environmental and human impacts from such adulticide applications targeted at adult mosquitoes will be considered in the DEIS. The No Action Alternative in the DEIS will include the routine larviciding, source reduction, surveillance, and education program.

VERTEBRATE (ANIMAL) SURVEILLANCE

Comment 24: On page 6 of the Draft Scope of Analysis, it should be noted that the community should be included in reporting dead wild birds. (65)

Response: The Final Scope of Analysis notes that the community is involved in reporting dead wild birds.

Comment 25: If 90 birds died in the Spring of 1999, but not from West Nile virus, it is important to state their cause of death. (66)

Response: The DEIS will provide additional information on the number of dead birds that were reported, tested, and/or tested positive in 1999 and 2000.

EDUCATION AND RESEARCH

Comment 26: Consideration should be given to provide information about the disease caused by West Nile virus and other such mosquito-borne diseases, both the risk and possible consequences of contracting the diseases. (56)

Response: The DEIS will further elaborate on the associated risks and diseases caused by West Nile and other mosquito-borne viruses which can result in disease.

THE PROPOSED ACTION

Comment 27: The City of New York should adopt a much more serious long-term plan to deal with this problem. The Federal government should provide this information. It is only a matter of time before a disease-carrying mosquito crosses state boundaries or regional boundaries and this becomes an obvious matter of Federal jurisdiction. The proposed cure of the problem cannot be worse than the problem itself. We have a potential crisis on our hands and we must be careful and concise in how we deal with it. (8)

Response: The NYCDOH participates and continues to work with federal, state and local agencies on efforts to control the West Nile virus.

Comment 28: New York City should create a Pest Management Board. Adequate funding is required to vigorously maintain the program, thus limiting the need for adulticides. The projected impact of global warming on New York is higher temperatures accompanied by insect-borne diseases. Establishing a pest management board now would enable the City to meet these challenges in a responsible manner by limiting the use of the more toxic pesticides in spraying and other applications and thereby protecting the health of children and adults. The board would monitor and recommend improvements to the City's current pest management practices, monitor plaitis that may require pesticide use, and thereby minimize the public's exposure to toxic pesticides. Buffalo, Albany and several other municipalities in New York State have already established such boards, and these boards have helped those cities understand that effective pest control does not always require the use of pesticides. (3,4,13,23,54,58)

Response: The development of a pest management board is outside the scope of the DEIS, which will evaluate potential impacts of adulticides on the environment and public health. The NYCDOH will also provide a description of other NYCDOH agency and interagency efforts on controlling pests.

Comment 29: An apolitical Mosquito Control Commission could deal with the problem of impounded wetlands using everything from environmental quality buyback funds to damages list funds. (2)

Response: Although this is outside the scope of the DEIS, it should be noted that an interagency taskforce has been created to deal with the issue of standing water and other potential mosquito breeding sites throughout the city.

Comment 30: There is a way to open up channels and wetlands so that they don't produce so much standing water where mosquitoes breed. Dr. Ginsberg of the Geological Survey who works for the National Parks Service said that there are mosquitoes that only bite birds and small mammals, but it's *Culex pipiens* and a few others that transmit the disease from birds to human beings. So you have to deal with mosquito populations in general. To your credit, November 1, 1999, Helen Sterling, Associate Commissioner from Health Service, showed a willingness to deal with the problem by open marshwater management. The problem is there are other agencies that simply were kind of laggard and finally just came along. (2)

Response: This is outside the scope of the DEIS; however, much of the city's wetland property falls under the auspices of the NYCDPR. NYCDPR has initiated a Salt Marsh Restoration Program in an effort to increase the circulation of water around coastal wetland areas. Once an area is restored, water is able to flush in and out and standing water no longer remains.

Comment 31: The City should incorporate an outreach and education component as part of the DEIS to inform the public of the DEIS findings. (1,19,41)

Response: The NYCDOH will publish both a DEIS and Final Environmental Impact Statement (FEIS) for the proposed action. Public notices will be published informing the public of the hearings on the DEIS. Comments received on the DEIS will be responded to in the FEIS, and both the DEIS and FEIS will be published and made available on the City's web site. Information and knowledge resulting from these studies will be employed by NYCDOH in its future activities related to this action, and included in future notices and precautions supplied to the public.

Comment 32: The City should be responsible for getting window screens for the older senior citizens and maybe parents with small children to protect them from mosquitoes. (38)

Response: The NYCDOH and NYSDOH have advised the public to use window screens to protect themselves from adult mosquito-borne viruses.

Comment 33: On page 8 of the Draft Scope of Analysis, the third paragraph states that "a listing of the typical labeling requirements and limitations will be provided for the adulticides." The DEIS should include copies of the actual labels for all adulticide products under consideration. In addition, Material Safety Data Sheets (MSDSs) for these products should be included in the DEIS. (56)

Response: The DEIS will include an appendix that will contain the labels and MSDSs for the adulticides under consideration for community-scale applications.

Comment 34: On page 8 of the Draft Scope of Analysis, the fourth paragraph should include protecting public health as well as the environment. In addition, the DEIS should be more definitive in its description of how the City would monitor for effects of the Plan. (56)

Response: The Final Scope of Analysis has been revised to reflect this comment. The DEIS will provide more details on its proposal for future monitoring.

Comment 35: Aerial spraying is an aggressive, expensive campaign that does not work. It has been scientifically proven that these pesticides cause deep lung allergy, pneumonia, asthma, damage to memory, chest tightness, headaches, numbness in extremities, blurred vision, cancer, learning disorders, neurological problems and many more. (11)

Response: The DEIS will evaluate the potential human health impact of pesticides.

Comment 36: The DEIS must include an analysis of the efficacy of controlling adult mosquitoes through the spraying of adulticides, and a calculation of the fraction of adulticide that is actually hitting and killing its intended target. (62)

When spraying aerially or by truck only a small fraction of the adulticides hit the target, therefore compromising the effectiveness of the spraying effort. Any and all documentation is to be made public to ensure all New Yorkers that spraying is effective. (24,25,32)

Response: There are a number of important components to consider in evaluating overall program effectiveness. The DEIS will outline the overall approach to monitoring components of the program in order to ensure that the program adapts to future changes or knowledge gained, and the highest overall efficacy of the program is maintained.

Comment 37: NYCDOH should look at the effectiveness of scheduling spraying at times when the least number of people are outside. (4)

Response: As discussed in the response above, there are a number of factors to consider when evaluating efficacy. The DEIS will discuss major mosquito species of concern, and life cycles associated with such species including when they are most active.

Comment 38: The technique used to apply adulticides has to be carefully analyzed. The effectiveness of the various spray options—backpack, truck, and aerial—must be determined, and the drift associated with each option must be calculated. The DEIS should consider the effects of spraying adulticides near, or over, water, and take into account factors that might cause non-target impacts, such as drift, volatilization, and accidental releases. It also needs to consider the difference in breakdown rate, or half-life, of the adulticide that enters the subway system of New York City versus the pesticide that is exposed to sunlight. (46,62)

Response: The DEIS will address the potential for drift from the application of adulticides, and the potential non-target impacts. As discussed in other responses and the Final Scope of Analyses, information on half-lives of the products under various circumstances will be provided and included in these analyses.

Comment 39: When I see New York City being sprayed by helicopter or truck, I feel like I am back in the early '60s when I was ten years old and pesticides were just accepted. I have personally interviewed dozens and dozens of people where children were sickened by this spraying. I have them on tape. There are other reporters that I have

been in contact with that have these reports, have these interviews. Mass spraying 8 to 9 million people with pesticides is a very dangerous precedent. (26)

No pesticides at all should be sprayed on the population. (26)

I have spoken to many people who have had serious ailments as a result of the spraying, and I don't think we should be subjected to this anymore. I am totally opposed to any kind of spraying. I believe there's further interventions that could be taken in integrated pest management. (24)

Response: The DEIS will address the impact of pesticides targeting adult mosquitoes (adulticides) on human health and the ecosystem.

Comment 40: None of the pyrethroids should be aerial or truck sprayed since allergic reactions can lead to serious impact on asthmatics and generate immune dysfunction. (23)

Response: The DEIS will evaluate the potential impact of adulticides used in mosquito control on human health.

Comment 41: Is there a plan to control aerial drift? (52)

Response: The DEIS will address the potential for drift from the application of adulticides, and the potential non-target impacts.

Comment 42: How will buffer zones be determined? (6,57)

Response: The DEIS will provide information on the buffer zones that adulticide applications adhered to in the year 2000 actions and the proposed buffer zones that NYCDOH will include in its long-term plan.

Comment 43: What agency will monitor the efficacy? An independent agency and citizens should be appointed in monitoring the efficacy of the spraying initiative to ensure accountability to the public. We don't think there is any proof whatsoever that spraying is efficacious. Is there an independent analysis of surrounding areas by different independent agencies? (6,7,20,32,56,62)

Response: As discussed in responses to other comments, the DEIS will discuss the on-going program elements related to the overall effectiveness (i.e., monitoring) of the plan.

Comment 44: Where is the requirement that Poison Control Centers must take all information about pesticide exposure and accept calls, contrary to what they did in 1999 because of the assumption that you cannot get sick from pesticide spraying? (52)

Response: While not directly related to the analysis requirements for the DEIS, all suspected or confirmed cases of pesticide poisoning must be reported by physicians, health facilities, and laboratories to the New York City Poison Control Center at (212) 764-7667 and the New York State Department of Health Pesticide Poisoning Registry at (800) 322-6850. It should be noted that past NYCDOH actions taken by the NYCDOH related to the monitoring of potential pesticide-related health effects will be discussed in the DEIS. The New York City Poison Control Center can also be contacted for advice and consultation on suspected cases of pesticide related illness. The NYCDOH encourages people who think they are experiencing health

effects from adulticide spraying to contact the New York City Poison Control Center.

Comment 45: The Poison Control Center must have a more responsible and aggressive role with an educated and appropriate amount of staffing in place. Unlike the last spraying initiative. Seminars on the symptoms and the impact of pesticide exposure should be mandated for all city medical staff and in service presentations provided to all other medical facilities. It is imperative to implement a separate pesticide hotline for complaints regarding West Nile virus. A comprehensive pesticide exposure intake for data collecting must be initiated to determine the long term effects of pyrethroids. (32)

Response: While outside the scope of the DEIS, past NYCDOH actions related to the monitoring of potential pesticide related health effects will be discussed in the DEIS. Health care professionals (physicians, emergency medical personnel and hospitals) were sent pamphlets, fact sheets, adulticide labels and Material Safety Data Sheets for the adulticides proposed for use in the 2000 action, prior to the first adulticide spray event. Furthermore all NYC hospital emergency departments and the Emergency Medical Service and Fire Department of New York City were informed of each WNV spraying operation. Included in the notice was a reminder that the New York City Poison Control Center implemented a separate tracking system to monitor WNV-related calls.

Comment 46: What are the thresholds that will determine discontinuation of any pesticide application? (6)

Response: Decisions to discontinue pesticide application will be based on the results of surveillance and other factors such as weather conditions.

Comment 47: The Manhattan Borough Board urges the Commissioner of Health, in the event of future spraying, to undertake a mandatory program of data collection from those New York City health care practitioners, hospitals, and the NYCDOH concerning the health consequences of the spraying. (4)

Response: All suspected or confirmed cases of pesticide poisoning must be reported by law to the NYSDOH and NYCDOH. The NYCDOH sent information on mosquito control adulticides to 46,000 NYC area clinicians and all NYC hospitals prior to the initial spraying of pesticides to control adult mosquitoes. The information provided on adulticides used in mosquito control discussed potential routes of exposure and possible health effects related to them and reminded health care providers to report cases of pesticide poisoning.

Comment 48: Three to four months after spraying, air conditioners tested in all the boroughs revealed millions of particles of resmethrin, sumithrin and malathion in their filters. There needs to be public education about cleaning of air conditioner filters. People are told to close their windows, but pesticides come around the edges of windows and through the cracks and between the two windows. This area has to be examined through indoor air samples and swipes. A plan must be in place to take indoor air quality sampling/swipes and filter sampling for residue after the spraying. The public should replace all air conditioner filters before turning their units back on. (5,6,20,32)

Response: The DEIS will discuss indoor exposure to pesticides.

Comment 49: Who will monitor public health, the environment, and the effectiveness of the program? (6)

Response: The DEIS will provide information on the planned monitoring programs that will be associated with the proposed action.

Comment 50: What provisions will be put in place for clinics to test for, record, and treat possible pesticide related illness? (6)

Response: Currently, under state law all medical providers are required to report pesticide-related poisonings to the New York City Poison Control Center and to the N.Y. State Pesticide Poisoning Registry. In addition, all New York City physicians, hospitals, and the Emergency Medical Service have been furnished with educational materials relating to the possible health effects resulting from adulticide exposure. The New York City Poison Control Center can also be contacted for advice and consultation on suspected cases of pesticide related illness.

Comment 51: What tests do you plan to use to determine pyrethroid poisoning? NYCDOH should be seriously concerned about pesticide-induced illnesses and pesticide poisoning. All physicians, nurses, medical providers, emergency rooms, clinics and school nurses should undergo emergency medical training in protecting against, diagnosing and monitoring pesticide illness. In short, the City must develop specific procedures and information to provide for the monitoring of pesticide-induced illness. This has to encompass the broad range of all pesticides currently in use by the City. (6,23,31,32)

Response: As discussed in responses to other comments, the NYCDOH took steps in 2000 to provide information to NYC area health care providers and hospitals on adult mosquito control pesticides, the potential routes of exposure and possible health effects related to them and reminded health care providers to report cases of pesticide poisoning. At the present time, there is no accepted laboratory test for pyrethroid exposure. Since symptoms of pesticide poisoning are often non-specific, the symptoms reported following exposure may not be a result of pesticide but rather of another environmental contaminant, bacteria, or virus to which the person was exposed contemporaneously with the pesticide. Therefore any association between pyrethroid exposure and health effects can be based only on personal report of exposure to adulticides or a medical diagnosis and not on clinical laboratory data.

Comment 52: How will sewage plants be monitored for pesticide runoff? Measures must be taken to monitor pesticide runoff in sewers and subways. (6,32,57,)

Response: The DEIS will include a discussion of the amount of adulticide that could be introduced into the sewers or subway tunnels following a rain event.

Comment 53: Presently NYCDOH provides information to the public on the possible threat to asthmatics and respiratory ailments. The public must also be informed of the

gastrointestinal, neurological and immunological symptoms, including endocrine disruptions associated with the pyrethroids. (32)

Response: The DEIS will address the potential impact from the application of adulticides on human health.

Comment 54: All private doctors, hospitals (public and private), and the general public must be made aware of the symptoms and impact of pesticide exposure. The MSDS and the label of the pesticide must be made public through the media. (32)

Response: The DEIS will discuss past actions related to the distribution of information to the public, health care providers and elected officials. The DEIS will include Material Safety Data Sheets (MSDSs) and labels as appendices to the DEIS.

Comment 55: The Draft Scope of Analysis confirms that populations with certain health problems, such as asthma, may incur health impacts not normally experienced by the general population when coming into contact with pesticides. Part of the population is allergic to resmethrin-based pesticides. The Draft Scope of Analysis should discuss how pesticide exposure to portions of the population susceptible to a more significant health response will be notified so that they can reduce or eliminate unwarranted exposure. (29,46)

Response: The impact of adulticide use on sensitive populations will be examined in the DEIS.

INSECTICIDE USE AND REGISTRATION PROCESSES

Comment 56: What Federal agencies will be overseeing the drift factor? Other than the AgDRIFT® model, a model spraying of urban areas with a large population is appropriate and should be the model used in New York City. We're told by the Attorney General's Office that they want to do an investigation of what happened last year, but the DEC is not allowing them to because the DEC and EPA were not even on-site to see what the drift was or anything else. (32)

Response: The DEIS will include a chapter on pesticide regulations that will provide an overview of the pesticide registration processes (at both the federal and New York State levels) and enforcement processes, and will evaluate the potential for drift.

Comment 57: There are a lot of pesticides that are being sprayed other than those to control mosquitoes. What is the cumulative impact of chemicals/pesticides that are already being sprayed, and now we're adding additional pesticides? The DEIS must consider the background level of chemicals and pesticides in the city factoring in the existing body burden and calculate potential risks caused by the aggregate effects of these chemicals. Health experts expressed increasing concern about the routine use of chemical pesticides, and in particular the potential cumulative effects on children in urban areas who may be regularly exposed to pesticides in their homes, schools and playgrounds. (6,20,22,32, 62)

Response: The DEIS will provide an overall discussion of the latest estimates on background pesticide usage and the relative amounts of the adulticide which have been sprayed in 1999 and 2000 versus background levels.

Comment 58: There should be an examination of illnesses (e.g., high asthma and cancer rates) that are prevalent on Staten Island. These should be taken into consideration when determining what adulticide to use.(16)

Response: The potential carcinogenic effects and impacts on asthmatics associated with adulticides used in mosquito control will be discussed in the DEIS.

Comment 59: The NYC Board of Education and other agencies have to get involved with cleaning up pesticide residue around their schools and to report on mitigation measures. (20,32,62, 56)

Response: The DEIS will address interagency communication related to adult mosquito-borne control issues.

Comment 60: Government, academic, medical, and scientific experts have cautioned that Malathion is a poison which must be used under strict safety guidelines to prevent human and animal contact. Therefore, in public announcements, the Mayor should not describe this neurotoxin as “harmless.” (4,21)

Response: The requirements of the pesticide registration laws and limits of product applications under such limitations will be discussed in the DEIS.

Comment 61: What agencies will oversee the adulticide application and disposal initiative? How are applicators and disposal companies policed? (32,62)

Response: The DEIS will include a discussion of agency oversight, state and federal regulations related to pesticide applicator licensing, pesticide registration and handling requirements.

FRAMEWORK OF ANALYSIS

Adulticide Characteristics and Application Techniques

Comment 62: On page 9 of the Draft Scope of Analysis, it should be noted that some adulticides are mixed with carriers such as petroleum distillates before they are applied. These carriers should be characterized in the DEIS, including their ability to cause health effects and property damage (e.g., paint finishes on cars). (56)

What additives are to be used with the pesticides? (6,57)

Response: The DEIS will include a discussion of the potential effects of inerts on the environment. As discussed in the Final Scope of Analysis, the NYCDOH does not envision the use of additives or carriers to ultra low volume (ULV) application of adulticide products as part of its program, unless specified as a requirement by the product label.

Comment 63: Active and inert adulticide ingredients should be disclosed and provided to the agency responsible for risk assessment. (6,20,30,32,56)

Response: The DEIS will include a discussion of the active and inert (to the extent which information on inerts is available) adulticide ingredients for the products under consideration in the proposed action.

Comment 64: On page 10 of the Draft Scope of Analysis, malathion should be last on the list rather than first. Otherwise the implication is that malathion should be considered first. (65)

Response: In the Draft Scope of Analysis, active ingredients and synergists were listed in alphabetical order, which resulted in malathion's position on the list. Since one of the goals of the DEIS is to provide an assessment of New York State registered adulticide products which may be used in the future, the analyses in the DEIS will evaluate all such products but will not predetermine which products will be used in the future.

Comment 65: Penick Company, a domestic manufacturer of resmethrin, recommends that the product not be sprayed on paint, plastic, varnished surfaces, and textiles. (23)

Response: A discussion of the label limitations of the adulticide products will be included in the DEIS.

Comment 66: There must be additional adulticides that are less toxic than the ones presently in the plan? Anvil 10+10 is one. (32)

Response: The DEIS will evaluate the potential effects of adulticides that are registered for use in New York State in the control of adult mosquitoes on a community-scale basis.

Comment 67: On page 10 of the Draft Scope of Analysis, the DEIS should mention the product names of the active ingredients listed so the public can better understand what is being used or proposed for use. The DEIS should list all of the adulticides that are registered for use in New York State and describe why some adulticides were considered and others were not. (56)

Response: The product names under consideration will be included in the DEIS and are in the Final Scope of Analysis. The DEIS will discuss why these products were considered as potential products for future applications.

Comment 68: On page 10 of the Draft Scope of Analysis, the last paragraph mentions the use of a 'barrier' application. The DEIS should define this term. (56)

Response: A glossary of terms will be included in the DEIS.

Comment 69: On page 10 of the Draft Scope of Analysis, degradates of concern should be discussed, including those that form from storage (e.g., isomalathion) and those that may form in the environment (e.g., malaaxon). (56)

Response: The DEIS will include information on degradation of products, either from storage or breakdown of product in the environment.

Comment 70: The DEIS must consider the least toxic alternatives to adult mosquito control. The least toxic adulticide may be one of the synthetic pyrethroids, which are known to be highly toxic to fish and beneficial insects. (4,62)

Response: The DEIS will examine the potential effects of the New York State registered adulticides listed in the DEIS on the groups of organisms found within New York City, including fish, aquatic invertebrates, insects, and mammals.

Exposure Pathways

Comment 71: On page 10 of the Draft Scope of Analysis, the second sentence of the last paragraph could include soil in addition to food and water. A discussion of the possibility of adulticides being absorbed during air stripping operations should also be included. (56)

Response: The Final Scope of Analysis has revised this sentence. The DEIS will include an assessment of how air strippers for the City's groundwater supply may be impacted by adulticide applications.

Comment 72: Pesticides break down under different conditions (e.g., no sunlight in subways to progress pesticide decomposition). How will this be studied? Discuss the effects on subway workers and passengers. (6,20,32)

Response: A compilation of half-life data for the various active ingredients in the adulticides evaluated in the DEIS will be prepared and incorporated into the analyses presented in the DEIS. One of the pathways in the Public Health Risk Assessment will include subway patrons.

Comment 73: Page 10. We are concerned about absorption of pesticides in the eyes. (6,11,20)

I nearly lost my vision. My eyes turned red; they burned and were in throbbing pain. I was suffering from abrupt vitreous separation, something that can rip the retina off your eye. I told the ophthalmologist about my reaction. He said it sounded like I had an allergic reaction. (17)

Response: The DEIS will include information from Poison Control Center records for 1999 and 2000 on reported effects that may have been due to pesticide exposure.

Comment 74: All sectors of the New York City (NYC) community should be considered. The homeless are a vulnerable population during spraying. NYCDOH should devise a plan to notify shelters and police to protect the homeless from pesticide exposure as well as proprietors of outdoor fruit-stands and organic gardeners. (6,20,32,62)

Response: In response to comments raised on the Draft Scope of Analysis, the homeless have also been identified as another group to include in the public health risk assessment. The DEIS will also discuss the notification methods and procedures that NYCDOH proposes to include in the plan.

Comment 75: On page 11 of the Draft Scope of Analysis, it should note that the DEIS should also consider including the exposure pathway of incidental ingestion of water in swimming pools. (56)

Response: The Final Scope of Analysis has been revised to include accidental ingestion of water in swimming pools.

Environment Types and Representative Areas

Comment 76: There might be concerns (i.e., environmental justice concerns) that the representative areas that you picked do not represent all types of areas in the City. An area such as Harlem should be added to the representative areas because economic level, race, ethnicity, and habits of the people in these areas are different than the ones set forth in the Draft Scope of Analysis. (6,20)

Response: The representative areas selected for detailed analysis are meant to be indicative of the various exposure mechanisms and environment types that can be found throughout the City. The DEIS will elaborate on how these areas are considered to be representative of other New York City neighborhoods, which include all the socio-demographic characteristics that are present in areas such as Harlem.

Comment 77: On page 12 of the Draft Scope of Analysis, the first paragraph should include direct dermal contact with spray during/immediately following application as an exposure pathway for the public in parks and publicly accessible open spaces. (56)

Response: The Final Scope of Analysis includes direct dermal contact with spray during/immediately following pesticide application in parks and publicly accessible open spaces.

Comment 78: On page 13 of the Draft Scope of Analysis, workers in industrial areas could also be exposed by dermal contact with adulticides on surfaces or on plants. Although this may not be the best or only section to include contact with plants, the primary occupation for some workers is cutting down vegetation and this should be included in some section. (56)

Response: The potential for dermal contact to adulticides for workers on surfaces and plants are included in the Final Scope of Analysis.

Comment 79: Parks and public areas, wetlands, State and Federal parks and properties, have to be treated differently from local parks (e.g., spraying rules may be different—require special permission). Only wetlands are listed, but we're concerned about tidal wetlands which are afforded special protection under New York State and Federal law. Community facilities, such as prisons, industrial areas, tunnels, and the subway system should be identified. (6,20)

Response: The requirements for the spraying of adulticides in City, State, and Federal parks versus locally owned facilities will be discussed in the DEIS. Also, such facilities will be identified for each of the representative areas.

Air Drift/Deposition Modeling

Comment 80: Sampling guidelines should be established to analyze the concentration and drift of pesticides and cleanup of pesticide residue. The DEIS should discuss in detail the methodology to determine the drift of the various adulticides being evaluated for aerial, truck, or backpack spraying. This section of the Final Scope of Analysis may be the most critical, since the drift rate model used by the USEPA also makes assumptions about the concentration of the pesticide being applied. Thus, the ecological and public health risk assessments will be driven in large part by the application of the drift model. Identify the modality with the least drift. (20,21,32,46)

Response: Based on the application scenarios, estimates of application rates and frequencies for potential aerial and ground releases of adulticides, the DEIS will provide the complete methodology for estimating the drift and deposition of the various adulticides. The results of the drift/deposition modeling efforts will be used as inputs to the public health and natural resources risk assessments.

Comment 81: The prevailing winds that cross over Staten Island are from the west and from New Jersey. If there is spraying in New Jersey and there is spraying in New York (i.e., Staten Island), the cumulative impact of spraying in these two areas should be taken into consideration. Given the topography of Staten Island and the effect of the wind drift, the environmental impact would be devastating. (15,13)

Response: The potential impact on NYC residents from adulticide applications in surrounding communities will be discussed in the DEIS.

Comment 82: High wind situations, such as those around high-rise buildings, must be considered. And also the effect of drift and wind speeds that occur in canyons between high-rises. Updrafts and thermals associated with the urban setting must be factored into the DEIS. Sampling should occur under different wind situations to back up the model. Have the appropriate Federal agencies been contacted, and what type of relationship has been established with these agencies? (6,20,32,62)

Response: The DEIS will examine the effects of various parameters including wind speed and wind direction, and other atmospheric conditions to prepare estimates of anticipated airborne and deposition levels of adulticides. Since the application of adulticides will be limited by label restrictions for each product, the dispersion modeling will examine the effects of these parameters within their allowable ranges provided on the labels.

Comment 83: Utilize the available data generated from the Photochemical Assessment Monitoring System. In Queens, the Photochemical Assessment Monitoring Station is located at Queensborough Community College. This information may be beneficial in determining the appropriate range of parameters for inclusion in the Air Drift/Deposition Modeling analysis. (63)

Response: The potential range of wind speeds and meteorological conditions that may occur when adulticiding operations would occur will be fully examined in the DEIS.

Comment 84: On page 20 of the Draft Scope of Analysis, the proposed deposition model should be adequately validated and any uncertainties associated with this specific use, including calibration uncertainties, should be described. (56)

AgDRIFT® is not tailored for urban situations. The AgDRIFT® model focuses on agricultural spraying; it does not take urban drift and urban air characteristics into consideration. Other than the AgDRIFT® model, a model spraying of urban areas with a large population is appropriate and should be the model used in New York City. (32,57)

The model discussed in the Draft Scope of Analysis was developed specifically by the USEPA for the agricultural industry and makes a number of critical assumptions that may not be germane to New York City. For example, a number of the field tests used to create the model assume a relatively even landscape of mowed

grass or wheat. For example, a number of the field tests used to create the model assume a relatively even landscape of mowed grass or wheat. Spraying heights tested can be as small as 50 inches. Clearly, these assumptions are not accurate for New York City. The model used by the USEPA also assumes the use of equipment primarily used by the agriculture industry that may not be appropriate for use in New York City. The Draft Scope of Analysis should also discuss why other air dispersion models should not be used for evaluating drift of pesticides sprayed in an urban environment. Other than the AgDRIFT® model, a model spraying of urban areas with a large population is appropriate and should be the model used in New York City. (21,32,46)

Response: A description of the model development of AgDRIFT® deposition model will be provided in the DEIS. Although the Draft Scope of Analysis focused on the use of the USEPA/Spray Drift Task Force's AgDRIFT® model, as a result of various comments received through the public scoping process, the DEIS will examine the simulation of drift/dispersion of adulticides using more than one USEPA developed model, such as the USEPA's Industrial Sources (ISC3) model. Several factors will be considered (including the ability to model drift/deposition in urban environments) to determine the degree of conservatism among the modeled results, and to determine the reasonably conservative modeling results (i.e., high-end estimates) to include in the DEIS analyses.

Comment 85: The USEPA has found that many variables are associated with the concentration of the pesticides released during spraying and the relative drift of those pesticides, with key factors being the mixing ingredients used to dilute the pesticide and the apparatus used for its application. In a September 1999 USEPA report evaluating the deposition of pesticides due to spray drift in orchards found, "In summary, the use of this field data and the resulting drift vs. displacement deposition curves to assess real risk to real targets should be done with caution and with full knowledge of the numerous limitations listed above. It should be kept in mind that these data were not generated with modeling in mind." The Draft Scope of Analysis must provide adequate detail to allow the public to assess how these issues will be addressed in the DEIS. (46)

Response: The comment extrapolates information from the the Spray Drift Task Force (SDTF) ground and orchard studies, and implies that it is applicable to the validation of the AgDRIFT® model. For aerial applications, the AgDRIFT® model has the same computer modules as the Agricultural Dispersal (AGDISP) model, a first principle model, which is based on the principles of physics. No SDTF data were used to develop the AgDRIFT® model, but the data were used to validate the AgDRIFT® model. The Orchard and Ground models, which are included as shell programs in AgDRIFT®, are empirical models, which are based on the data from (SDTF) fields studies; such extensions to the model will not be included in the DEIS analyses.

Comment 86: Since there appears to be a lack of field data on the concentration and drift of pesticides used in an urban environment, it is appropriate for the Draft Scope of Analysis to establish sampling guidelines to be used during the application of pesticides. Since the spraying of pesticides may occur while the DEIS is being completed, it is critical that, where possible, actual data is collected to determine likely future impacts. The USEPA has established a number of standard sampling

strategies for agricultural testing that may be easily converted to use in an urban environment. (46)

Where will the collection stations be located to evaluate spray drift and verify it according to the AgDRIFT® model? What database will be used as a reference to determine spray drift (field studies) for the particular pesticides to be sprayed?(6, 57)

Response: One of the goals of the DEIS is to provide reasonably conservative environmental assessments of the NYCDOH's proposed action. The DEIS will examine the simulation of drift/dispersion of adulticides using more than one USEPA-developed model. Utilizing USEPA models to simulate the fate of airborne emissions is a standard approach for providing conservative estimates of airborne concentrations and deposition of material for DEIS studies. The use of mathematical models can address a variety of variables that may affect the drift and deposition of adulticides. This would include assumptions such as application scenarios and methods (e.g., truck versus aerial application), amount of product employed, multiple products, varying meteorological conditions during application (e.g., assess worst case wind speeds and wind directions between release and point of exposure). The effect of controlling and varying these parameters on the fate of applied adulticides may be done readily with mathematical air models, while field sampling would rely on a more limited set of conditions. These samples would not necessarily reflect the worst-case conditions that should be reported in the DEIS.

Comment 87: How will the AgDRIFT® model be used in the event of ground spraying? What model would be used if spraying takes place above 10 feet? How will AgDRIFT® data be used to determine inhalation exposure?

Response: The AgDRIFT® model has the capability to simulate drift/deposition of adulticides from sources such as trucks which are used for ground spraying. However, as mentioned in response to other similar comments, the DEIS will examine the simulation of drift/dispersion of adulticides using more than one USEPA-developed model. The Public Health Risk Assessment in the DEIS will use the results of the drift/deposition modeling (air concentrations and surface deposition values) as inputs to the exposure analysis, which includes exposure by inhalation, dermal contact and ingestion.

Comment 88: NYCDOH must identify additional sources of wind data other than LaGuardia Airport because that data become less useful farther from the airport.

Last year we have proof that malathion was sprayed when the winds were twenty-two and twenty-four miles an hour. The label says not to spray in winds over ten miles an hour. (32)

Response: The DEIS will assume that products will be applied in accordance with label restrictions.

PUBLIC HEALTH RISK ASSESSMENT

Comment 89: How is NYCDOH doing their risk assessment? (47)

Response: The Draft Scope of Analysis provided an overall summary on the integrated procedures that would be followed to estimate the potential impact on humans and the

environment from adulticides employed to reduce the threat from mosquito-borne diseases from adult mosquitoes. The Final Scope of Analysis has enhanced this description of the methodology, and the full methodology, along with results of the analyses, will be included in the DEIS.

Comment 90: The City should do some type of testing as to how many additional cancer deaths might be caused by this action. (30)

Response: Through modeling analyses, the DEIS will evaluate potential health effects, including cancer, on the population that may be exposed to the pesticides.

Comment 91: On page 21 of the Draft Scope of Analysis, it was stated that, “However, this DEIS will use a set of worse case exposure scenarios and assumptions to assess the potential impact of adulticide applications on sensitive members of the population.” It is unclear how or whether exposure assessment assumptions can address the notion of a sensitive individual or subpopulation; the difference between “sensitive” and more highly exposed needs to be more clearly drawn. (56)

Response: Typically, there are two key components in risks calculations: toxicity characterization and exposure characterization. USEPA has defined toxicity factors in terms of mode of toxicity (e.g., inhalation *vs.* ingestion) and magnitude (i.e., degree of toxicity). It should be noted that the magnitude of toxicity is derived from toxicity criteria which take into account variations in sensitivity in the human populations by using uncertainty factors. These uncertainty factors conservatively modify the toxicity criteria to protect even the most sensitive individual.

The exposure characterization is defined as exposure parameters (e.g., duration and intensity of exposures) and exposure concentrations. The exposure parameters that will be used in this risk assessment will range from typical or average exposures to reasonable maximum exposure conditions. Furthermore, a range of exposure concentrations (low or average to upper bound concentrations) will also be used in the risk assessment. Thus, a broad range of exposure conditions likely to be encountered by a receptor under various exposure conditions will be used in the risk assessment.

The combination of a range of exposure conditions and conservatively defined toxicity criteria will assess the potential impact of adulticides on a wide range of receptors, including sensitive members of the population.

Comment 92: It is of serious concern that Staten Island has very high cancer rates, in particular breast cancer. Resmethrin is a hormone disrupter like DDT. Breast and prostate cancers are hormonal cancers. (13)

Response: The potential for carcinogenicity and hormone disruption associated with adult mosquito control pesticides will be discussed in the DEIS.

Comment 93: In the fourth full paragraph of page 22 of the Draft Scope of Analysis, it was stated that risk characterization will probably need to include more than comparing estimated exposures with toxicity criteria. (56)

Response: The risk characterization will not only include a comparison of estimated exposures with toxicity criteria, but also a discussion regarding the implication of these results as well as a discussion of the uncertainty surrounding the risk results (i.e., whether risk results are likely to be over or underestimated). The Final Scope of Analysis has been revised to reflect this clarification.

Comment 94: In the first full paragraph of page 23 of the Draft Scope of Analysis, what are the representative application scenarios that will be used and how will indoor air concentrations be modeled? (56)

Response: As stated in that paragraph, the representative application scenarios will include community-scale spraying, either by aerial or truck spraying. As a first-cut conservative assessment, indoor air concentrations will be assumed to be the same as outdoor concentrations.

Comment 95: In the second full paragraph of page 23 of the Draft Scope of Analysis, what are the environmental half-life values that will be used? (56)

Response: A compilation of half-life data for the various active ingredients in the adulticides will be prepared for the DEIS, and conservative estimates of half-lives will be included in the risk assessment studies.

Comment 96: In the first partial paragraph of page 23 of the Draft Scope of Analysis, how will the breastmilk exposure pathway be evaluated? (56)

Response: Based on biological half-life data, and a review of the literature regarding concentrations of the pesticides in breastmilk and other body tissues, the likelihood of finding measurable concentrations of the pesticides in breastmilk will be assessed. The Final Scope of Analysis has been revised to reflect this clarification.

Comment 97: In the first partial paragraph of page 23 of the Draft Scope of Analysis, what criteria will be used to determine the significance of exposure pathways? Some quantitative information may be necessary to show why a less significant exposure pathway should be discussed in a qualitative sense. (56)

Response: A pathway will be more likely to be discussed qualitatively if the exposures to receptors are significantly lower than for other receptor groups for which quantitative analyses have been undertaken (i.e., only quantitative analysis will be performed only for the more conservative exposure conditions, such as longer exposure durations, greater contact rate with pesticides). In addition, a pathway may be discussed qualitatively if it only contributes a small percentage of the overall risk for a specific medium (e.g., 1 to 5% of total risk from dermal contact with water compared to ingestion of water). The Final Scope of Analysis has been revised to reflect this clarification.

Comment 98: In the fifth full paragraph of page 23 of the Draft Scope of Analysis, what are the standard USEPA exposure assumptions and risk assessment approaches? (USEPA may not have standard assumptions for many of the necessary parameters.) How will site specific demographic information be used to modify exposure parameters? (56)

Response: The risk assessment will rely on standard USEPA default exposure and other assumptions contained in the Exposure Factors Handbook (USEPA, 1997). The Exposure Factors Handbook is a three volume set which presents information taken from surveys of US populations regarding general factors (e.g., body weight, water ingestion rate) and activity factors (e.g., time spent indoors, time spent gardening). Site specific information, if available, may be used to modify certain exposure parameters, such as soil ingestion rate. For example, a child may eat more soil if groundcover is absent (exposed soil) compared to when groundcover (e.g., grass or pavement) is present. Exposure parameters for all receptors will be provided in the DEIS and supportive appendices.

Comment 99: On page 23 of the Draft Scope of Analysis, the equation at the bottom of the page will need to be modified if calculation of dose estimates is necessary. (56)

Response: Toxicity criteria for the inhalation pathway are based on air concentrations rather than dose; therefore it is not necessary to calculate dose for this pathway.

Comment 100: On pages 23 and 24 of the Draft Scope of Analysis, it is not clear from the presentation how dermal, oral and inhalation absorption will be dealt with (i.e., either assumed to be 100 percent or modified based on study data). (56)

Response: It is not necessary to include an absorption factor if route-specific (i.e., inhalation, oral, dermal) toxicity criteria are used for assessing risks. This is because the toxicity criteria identified from these studies are based on an applied dose rather than an absorbed dose, such that the toxicity criteria take absorption into account. Although there are route-specific toxicity criteria for the pesticides for all inhalation and oral exposure durations, there are no toxicity criteria for chronic dermal exposures. Therefore, the oral toxicity criteria will be adjusted to represent an absorbed rather than an applied dose. An absorbed dermal dose will also be calculated, based on absorption values recommended by the USEPA. The Final Scope of Analysis has been revised to reflect this clarification.

Comment 101: On page 24 of the Draft Scope of Analysis, the equation at the top of the page may not be adequate for all oral or dermal exposure estimates. (56)

Response: The equation is a generic equation which is applicable to all exposure rates, through use of route-specific exposure parameters for the Contact Rate term. Contact Rate for an oral exposure is either liters/day for a drinking water contaminant, or mg/day for a soil or food contaminant. Contact rate for a dermal exposure is defined by surface area of exposed skin, and absorption of a chemical through the skin. The Final Scope of Analysis has been revised to reflect this clarification.

Comment 102: In the fourth full paragraph of page 25 of the Draft Scope of Analysis, what data will be used to characterize aggregate exposures? When feasible, the hazard quotient should include all routes of exposures from all sources for that chemical or reasons should be given as to why this is not appropriate. (56)

Response: Aggregate exposures will be characterized by considering exposures occurring through ingestion of food, as well as background exposures through other pathways such as oral and dermal soil exposure. Exposure due to ingestion of food containing pesticide residues will be based on data collected by the U.S. Department of Agriculture as part of its Pesticide Data Program. Exposures from other pathways

will be based on a literature review of background concentrations of pesticides in soil and surface water in urban environments.

As stated in the Draft and Final Scope of Analyses, “Hazard quotients will be summed for relevant pathways for each receptor, for a resulting hazard index.” The relevant pathways would include all exposure routes where there is potential for a receptor (i.e., a person) to come in contact with a pesticide as a result of spraying operations. Because one of the goals of the DEIS will be to compare risks among different spraying scenarios, it is not necessary to include exposure pathways which are not related to spraying (i.e., through consumption of residues in food, or due to household uses) as these uses will be constant for all the different spraying scenarios.

Comment 103: The Draft Scope of Analysis should discuss the health impacts to children who played in the parks or school playgrounds and on grass that was sprayed with malathion, sumithrin, and resmethrin. (4,52)

Response: The public health risk assessment will include these pathways in the analyses.

Comment 104: The Draft Scope of Analysis stresses that the primary health concerns will likely be those associated with the acute effects of pesticide exposure. Information must be available to the public on the acute effects vs. subchronic and chronic effects, with emphasis on subchronic effects of exposure. All toxicology data, (not just listed databases), baseline data on existing usage, and background level of chemicals/pesticides used in the city must be made available to the public. (32,62)

Response: The Public Health assessment will include the results of information provided by USEPA and the results of literature research on acute, chronic, and subchronic effects. Background levels of pesticides usage will also be provided.

Comment 105: How is a risk assessment being done and what information will be provided to the health care community and the general public about the impact of pesticide exposure? A variety of people should be considered in the risk assessment—men, women, children, the elderly, people with Multiple Chemical Sensitivity (MCS), those with weakend immune and nervous systems, and those suffering from upper respiratory ailments; acute effects versus subchronic and chronic (emphasis must be on subchronic effects); additional end points including asthma, gastrointestinal, neurological and immunological symptoms as well as endocrine disruption, should also be considered. Review all available toxicology data, not just listed databases. Examine baseline data on existing usage and background level of chemicals and pesticides in the City, and increase in human mortality associated with the spray schedule compared to earlier data. (6,20,22,32, 62)

Response: The risk assessment will be performed according to the approach outlined in the Scope of Analysis using U.S. EPA guidance. Risks associated with pesticide exposures will be assessed for several potential receptors, that include sensitive members of the population, women, and children, under a broad range of conditions. The risk assessment will pay particular attention to acute exposures (i.e., immediately after spraying), subchronic and chronic exposures.

Risks are generally determined for the most sensitive endpoint (e.g., neurological, gastrointestinal, immunological effects) in the most sensitive species. Potential for pesticide exposure to cause other effects, such as asthma and endocrine disruption will also be considered.

Background exposures through other pathways such as oral and dermal soil exposure will also be considered. Exposure due to ingestion of food containing pesticide residues will be based on data collected by the U.S. Department of Agriculture as part of its Pesticide Data Program. Exposures due to other pathways will be based on a literature review of background concentrations of pesticides in soil and surface water in urban environments.

Comment 106: We need to key the scope of the DEIS to the risk factors involved for particular individuals and types of individuals. (37)

Response: The exposure parameters that will be used in this risk assessment will range from typical or average exposures to reasonable maximum exposure conditions. Furthermore, a range of exposure concentrations (low or average to upper bound concentrations) will also be used in the risk assessment. Thus, a broad range of exposure conditions likely to be encountered by a receptor under various exposure conditions will be used in the risk assessment.

The combination of a range of exposure conditions and conservatively defined toxicity criteria will assess the potential impact of adulticides on a wide range of receptors, including sensitive members of the population.

Comment 107: In the first and fifth full paragraphs of page 25 of the Draft Scope of Analysis, how will the potential for asthma be evaluated? (56)

Response: Available literature will be reviewed for any evidence that exposure to adulticides may induce asthma attacks (including both case report and occupational exposure to pesticides).

Comment 108: In the last paragraph of page 25 of the Draft Scope of Analysis, what are the regulatory guidelines and standards that will be used for the comparisons? (56)

Response: The regulatory guidelines and standards have been promulgated pursuant to the Safe Drinking Water Act, which will be discussed in the Infrastructure section of the DEIS.

Comment 109: In the first full paragraph of page 26 of the Draft Scope of Analysis, what are the significant sources of uncertainty and variability that will be discussed? How will the impact of uncertainty and variability on the risk estimates be evaluated? (56)

Response: Uncertainties will be taken into account in both steps of the risk assessment process: exposure analysis, and toxicity analysis. Although too numerous to list in the response to comments, key exposure variables (e.g., soil ingestion rates in urban areas, body weight, inhalation rate, amount of time spent outside) and assumptions in the derivation of toxicity criteria (e.g., the use of uncertainty factors to derive a reference dose, extrapolation of animal data to humans) that contribute

most to uncertainty in the risk assessment and the likelihood that they may over- or under-estimate site risks will be discussed in the DEIS.

Comment 110: How will you evaluate the effect of chemicals on public health? (6)

Response: Using a modeling approach, the combination of a range of exposure conditions and conservatively defined toxicity criteria will be used to assess the potential impact of adulticides on a wide range of receptors, including sensitive members of the population.

Comment 111: How and where will health effects be evaluated? What actual measures will be taken and when? (6)

Response: The range of exposures under a variety of conditions at several locations described in the Scope of Analysis will be used to evaluate the potential health effects associated with pesticide exposures. Data used in the risk assessment will include modeled deposition data for each of the proposed pesticides. This information will be used in the risk assessment to estimate potential exposures to a broad range of receptors under a variety of conditions. In addition, the DEIS will describe monitoring for potential health impacts.

Comment 112: What type of peer review do you plan with regard to health assessments? (6)

Response: The NYCDOH is actively working with the CDC and the NYSDOH to review available data on possible health effects.

Comment 113: How will the secondary movement of applied pesticides be determined? (57)

Response: During spraying applications, adulticide formulations will be present in the air, and may settle and leave a residue directly on an individual's skin. Adulticide residues also may settle on non-targeted outdoor surfaces (such as lawns, gardens and swimming areas) and surfaces within homes (through open windows or ventilation systems). Therefore, human exposure may occur through inhalation of airborne adulticides (either in spray drift during pesticide application or on resuspended soil/dust particles); direct and indirect dermal exposure to adulticide residues; incidental ingestion of adulticide residues due to hand-to-mouth behaviors; participation in outdoor aquatic activities; and ingestion of contaminated produce (including food market and homegrown produce), soil, and drinking water.

In addition to exposures occurring during spraying operations (e.g., inhalation of pesticide spray drift, dermal contact with pesticide deposited on skin surfaces), the following secondary exposures will also be considered: inhalation of pesticides in resuspended dust and soil particles; dermal transfer of pesticides from contaminated surfaces, such as lawns; incidental ingestion of pesticides in soil due to hand-to-mouth behavior; and incidental ingestion of pesticides in water and produce (both food market and homegrown).

Comment 114: During last year's spraying, there were reports from park users complaining of dizziness, sudden asthma attacks and nausea from being sprayed with pesticides. These effects did not result in hospital visits, but are significant nonetheless and

need to be factored into any evaluation of health impacts of the proposed action. (21,46)

Response: As discussed in the Draft and Final Scope of Analyses, the potential for health effects from these adulticides (whether or not they would be severe enough to result in hospital visits) will be addressed.

Comment 115: A registry must be implemented for risk assessment of the MCS population, children, pregnant women and those suffering from upper respiratory ailments. (32)

All children who are developmentally disabled (e.g., retarded, autistic) have metabolic disorders. And as a result of being metabolically challenged, their immune systems do not function properly. I believe one hundred percent of them are affected by the chemicals, be it in schools, outdoors, indoors. (33)

Response: Risks associated with pesticide exposures will be assessed for several potential receptors, which implicitly include sensitive members of the population, under a broad range of conditions. The results of literature research on the effects of pesticides on the developmentally disabled will be included in the DEIS.

Comment 116: Is there data to show an increase of mortality associated with last year's spraying compared to earlier data? (32)

Response: The DEIS will describe morbidity and mortality data and their relative usefulness in assessing potential pesticide effects.

Comment 117: All documents from the Mayor's Office of Emergency Management and from the City that have been compiled should be released. (7)

Response: The DEIS will summarize past spraying activities.

Comment 118: An independent toxicological analysis of what happened last year (1999) should be performed. (7)

Response: While this is beyond the scope of analysis for the DEIS, the NYSDOH is in the process of conducting a review of the reported adulticide exposures in conjunction with the NYCDOH for 1999 and 2000.

Comment 119: How many people got asthma or were sickened or made worse from last year's (1999) spraying? An asthma illness questionnaire should be sent to all residents who were sprayed last fall. (7)

NYCDOH should include an examination of the health problems, such as asthma, and death rates in the city associated with the spray schedule. (62)

How many additional asthma cases and deaths will be caused by introducing a substance that aggravates these types of illnesses? (30)

Response: The DEIS will evaluate potential impacts from adulticides on people with asthma. The DEIS will discuss the larger scope of morbidity (health effects) including asthma associated with exposures to pesticides. The methodological issues related to the positive association between adulticides and deaths will be discussed.

Comment 120: What was the situation in the different communities that were sprayed compared to the ones that weren't sprayed? (7)

The Draft Scope of Analysis should discuss how public health information will be collected from areas that have been sprayed. (46)

Response: The DEIS will address the possible health effects of adulticides.

Comment 121: We would like to see the release of the names, the blood samples, autopsy reports, and full history of medical records of the seven alleged West Nile Virus victims from last year to independent scientists. What did these people actually die from? (7)

Response: This is not within the scope of analysis for the DEIS, the focus of which is to assess the possible impacts of the application of pesticides to control adult mosquitoes on human health and the environment. Information that discusses the results of autopsy findings from 4 of the WNV cases from 1999 has been published (Human Pathology 2000 May;31(5):527-31). However, individual patient names and identifying information are confidential.

NATURAL RESOURCES

Comment 122: Consider the impact of spraying on our wildlife. What happens to fish and birds, including mosquito fish and migratory birds, respectively? Pyrethroids can have a significant impact on these species. Their protection should be considered. (10,29,32)

We do not need any poisons in the waters of the Lemon Creek area. People eat the fish. People eat the blue claw crabs that come out of that area. Ninety-five percent of the people who catch anything there take it home and eat it. Maybe it doesn't hurt a human, but what they get through that fish or whatever they consume could make them deathly sick. And proof of that is Martin's Pond and Jack's Pond. Even the lobster industry in Long Island has had complaints in their waters from some of the products that people used last year. (9,26,66)

Response: The DEIS will address the potential impacts to nontarget species, such as fish, birds, mammals, and other invertebrates.

Comment 123: What is the quantitative measure to determine the potential environmental exposure of non-target organisms? (6)

Response: The quantitative measure depends on the organism. For aquatic species, the DEIS will consider concentration in ponds and wetlands. For terrestrial species, the DEIS will consider possible uptake through the food chain or direct exposure.

Comment 124: Lemon Creek/Wolfes Pond Park contain a diversity of flora and fauna. The local flora and fauna should be thoroughly inventoried and examined before and after next years spraying. (49)

Response: The DEIS will examine the potential for adverse effects to the resources in these two parks and identify where these effects might occur, if at all.

Comment 125: You chose the right site because Lemon Creek and Wolfe's Pond Park have all of those special unique characteristics that we were concerned with last year: human interaction with the natural resources, wildlife, and a variety of natural habitats. (9,10)

Response: Such characteristics were considered in selecting the representative areas.

Comment 126: The NYSDEC hasn't come up with a correct analysis of what happened up at Clove Lake Park. There were dead fish at Willowbrook and Clay Pit Ponds. There was supposed to be an investigation of this and to date nothing has happened. (14)

Response: The DEIS will include a discussion of the latest findings from investigations performed by the NYSDEC on any fish kills that were possibly related to pesticides.

Comment 127: The DEIS must consider the effects that adulticides have on fish, birds, bats, and other species that feed on, and therefore control, mosquito populations. (4,62)

Response: The potential non-target impacts from adulticiding operations will be included in the DEIS.

Comment 128: Adulticides (e.g., pyrethroids) are known to become concentrated on golf courses fairways, and in ponds and bodies of water without outlets. This impact should be evaluated (see The New York State Attorney General's Report which discusses this issue). (6,32,62)

Response: The potential for adulticides to accumulate in bodies of water will be included in the DEIS.

Comment 129: Our ecosystem was adversely affected by last year's spraying. Within forty-eight hours there were 1,500 or more sunfish found dead in Clove Lake Park on Staten Island. Dead birds and insects and squirrels were found immediately after the spraying, paint was taken off someone's car. Were malathion and other pesticides sprayed at a concentration level that was too high? (3,12,26,52,66)

Response: The DEIS will include a discussion of the latest findings from investigations performed by the NYSDEC on any fish kills that were possibly related to pesticides, and a discussion of the amounts of adulticide products used in the control of the West Nile virus in 1999 and 2000.

SCREENING LEVEL RISK ASSESSMENT

Comment 130: NYCDOH must not eliminate classes of natural resources, which would end further consideration of those classes, until after the risk assessment has been conducted. (32)

Response: The purpose of the screening level Tier I risk assessment is to eliminate groups of organisms from further consideration if they would not be adversely affected by the pesticides even under extreme exposure conditions. The next step in the risk assessment (Tier II) will then focus on groups of organisms that might be affected by the pesticides.

INFRASTRUCTURE

Comment 131: We are concerned about spraying over the reservoirs which puts our water supplies at risk. (3,6,58)

Response: While the pesticide labels do not permit spraying directly into water bodies, such as reservoirs, the potential for drift of adulticide products and potential deposition of such material into the New York City water supply will be assessed in the DEIS.

Comment 132: It isn't clear that the drinking water exposure pathway will be complete for NYC residents although including the possibility in the DEIS is a good idea. (56)

Response: Comment noted.

Comment 133: On page 29 of the Draft Scope of Analysis, in Task G, "Water Quality", the last sentence states, "If no New York State or Federal standards or criteria exist for any of the adulticides, other water quality benchmarks that have been used elsewhere will be identified along with water quality information." The preparers of the DEIS should make note of the New York State Department of Health's drinking water standards which establish standards for all organic chemicals based on chemical structure. (56)

Response: The Infrastructure section will compare projected pesticide concentrations in drinking water supply reservoirs with Safe Drinking Water Act guidelines, as well as existing toxicological benchmark concentrations. This comment is more applicable to the Infrastructure section, and the Final Scope of Analysis has been revised to reflect this comment.

WATER QUALITY

Comment 134: On page 29 of the Draft Scope of Analysis, in "Task G, Water Quality," the last sentence reads, "Where available, results of past studies that monitored adulticide spraying will be examined." Such monitoring results can be sensitive to local conditions that govern the transport and accumulation of residues, particularly in sediments. Also, comparisons to monitored results are not mentioned for other compartments. Data such as those described above would be valuable for model validation and calibration. (56)

Response: The DEIS will review and incorporate data from water quality monitoring studies where available and appropriate.

HAZARDOUS MATERIALS/CONTAMINATED MATERIALS

Comment 135: City workers (i.e., police, fire, sanitation) involved in the spraying initiatives must wear protective gear when involved with the spraying initiative. This was overlooked during the 1999 spraying initiative. (32)

Response: Although not required for the technical analyses for the DEIS, a discussion of what steps NYCDOH took to inform City Workers of safety and health precautions will be included in the DEIS.

Comment 136: What emergency plans have been created to address an accident associated with the transport, use, storage, and disposal of the chemicals used? (62)

Response: The DEIS will discuss how the City would deal with an accidental pesticide spill.

Comment 137: How are pesticides being stored? Who is responsible for storage, transportation, application, and disposal of pesticides (i.e., adulticides)? Where and how will waste be disposed of? (20,32,62)

Response: The DEIS will further elaborate on the storage, transport and disposal of insecticides. Other sections of the DEIS will explain the chain of responsibility for the application of insecticides.

ALTERNATIVES

Comment 138: Assess the potential and impact of a more aggressive routine control program to control adult mosquitoes (21,46)

Response: While the No Action scenario represents an aggressive routine control action, an alternative for an even more aggressive routine control action will be included in the DEIS.

Comment 139: There are herbally-based bug repellents available at hiking and health food stores, and in gardening and household catalogues. Avoid the ones with penny oil if you are pregnant. Lavender blossoms either hung around your windows or dried and burned repel flying pests. Where it is appropriate, the Parks Department could build bat boxes. (17,29)

Response: The DEIS will include alternatives to the proposed action, including some that would not include the use of adulticides.

Comment 140: What alternatives are available in the event that the pesticides prove to be a threat to public health? (6)

Response: The DEIS will include alternatives that do not include the use of adulticides.

Comment 141: We recommend that focused backpack spraying of specific breeding sites on a careful, limited scale will handle problems if they arise. This is a similar approach to focused larvicide application. (66)

Response: The DEIS will include alternatives to the proposed action, including those that would not include the use of truck or aerial spraying of adulticides.

Comment 142: There are life style alternatives. The best thing you can do for yourselves is to strengthen your immune system, get out and exercise, eat organic food, and be a positive person. That would be the best thing all of us could do to protect ourselves from these few infected mosquitoes that might bite us, rather than getting sprayed with something that's toxic and that's going to harm our immune systems and stress us. (20)

Response: Comment noted.

Comment 143: Significant research should be performed to examine non-toxic alternatives (e.g., organic, holistic and natural, CO2 mosquito magnets) to chemically toxic, synthetic pesticides (e.g., pyrethroids). Let Staten Island be the testing ground for these new

non- toxic technologies successfully used by the United States Coast Guard in New England and Florida. (3,4,7,11,13,20,24,29,57,58,65)

Response: Significant research on alternatives is beyond the scope of the DEIS, however, the City is using Mosquito Magnets® and mosquito eating fish and their usefulness will be evaluated in the long term program. The DEIS will include a discussion of alternatives to pesticides for the control of adult mosquitoes.

MITIGATION

Comment 144: Reports on mitigation measures must be made available to all who ask for them. These reports should also be made public in the media. (32)

Response: The DEIS will recommend mitigation measures where significant adverse project impacts have been identified. The DEIS will be issued as a public document and will be distributed to all Community Boards, Borough President's offices and elected officials. An electronic version of the DEIS will also be available through NYCDOH's website: www.nyc.gov/health. The mitigation measures outlined in the DEIS will be taken into consideration in the development of NYCDOH's long term Comprehensive Arthropod Surveillance and Control Plan.