New Orleans Mosquito & Termite Control Board

Accomplishments under the Marc H. Morial Administration

January, 2002

1. Capital Facilities Improvement Program:

   During the Morial administration our board received two backhoes, one dump truck, had two operations buildings re-roofed, had our Administration building renovated (ongoing), and received funding to build a new Vector/Rodent Control building.

2. Inception of Termite Control Division:

   In 1997 the title of the "New Orleans Mosquito Control Board" was changed to the "New Orleans Mosquito and Termite Control Board." This was the result of a $100,000 Community Development Grant secured by the Administration. The program was developed to allow the City to treat its own buildings with the latest state-of-the-art control measures. A Termite Entomologist was hired along with two technicians. This program was an immediate success, and by its second year was responsible for bringing in large grants from industry and the federal government. The program is responsible for the development of numerous new control measures (baits, non-repellent barriers) and detection devices. This is the only such public program in the country.

3. City Spared of Encephalitis Activity During 2001 Epidemics:

   The City of New Orleans had no bird, mosquito, horse or human encephalitis activity during 2001. North Louisiana experienced the largest St. Louis Encephalitis (SLE) outbreak in the State's recorded history. The outbreak in Ouachita Parish (Monroe) may have been the largest on record in the United States on a per population base. Closer to New Orleans, SLE and Eastern Equine Encephalitis (EEE) was detected in St. Tammany Parish. Jefferson Parish recorded EEE in a horse and became the first place in the

state of Louisiana where West Nile Virus (WNV) was detected (birds and one human case). If any one of these types of encephalitis had occurred in New Orleans, public perception would have had a major effect on tourism.

4. Federal, State and Private Grants Greatest in City's History:

During Mayor Morial's Administration, through the recognition and diversity of New Orleans Mosquito and Termite Control Board programs, which includes mosquitoes, termites and rodent control, Federal, State and private grants have been the greatest in City of New Orleans history. The NOMTCB has been instrumental in acquiring extensive revenue for the City through grants and contracts in both mosquito and termite control. The City has benefited from funding provided by the U.S. Environmental Protection Agency, Rockefeller Foundation, the National Center for Preservation Technology and Training, the U.S. Fisheries and Wildlife, Centers for Disease Control, U.S. Department of Agriculture, and Louisiana Department of Agriculture. Cooperative projects are ongoing with Louisiana State University, Tulane University School of Public Health, Xavier University, University of New Orleans, local groups and businesses, pest control operators, and intergovernmental agencies. In addition, cooperative agreements have been established with large chemical companies, including Dow AgroSciences, Cheminova, Bayer, Aventis, FMC and Syngenta Corporation. The City of New Orleans has received worldwide recognition through magazine, television, video, and newspaper coverage.

Mayor Morial and his administration have been continuously supportive of the New Orleans Mosquito and Termite Control Board and its many programs. The benefits to the City of New Orleans by the assistance from federal and state government agencies, as well as private industry for development of research and control of Formosan termites in City buildings and trees have been monumental for protection, restoration and preservation of city-owned buildings, trees and historic structures. The worth of these ongoing preservation endeavors to the City of New Orleans cannot be measured in monetary terms.

Through the efforts of Mayor Morial, his staff and NOMTCB, federal legislation was passed to conduct research for the control and management of the Formosan termites in the United States. In 1996, the Mayor issued an executive order to create the Mayor's National Formosan Control Initiative

Task Force. Many positive improvements in control methods have been accomplished through these years, and the City of New Orleans is now recognized as the Center of Excellence for the Study and Control of Formosan Termites.

5. New Aircraft Engines:

The NOMTCB purchased a new twin engine Britten-Norman Islander aircraft in 1981. This insecticide spray airplane has served New Orleans flawlessly for 20 years, averting mosquito pestilence and disease.

In 2001, the time limitations ran out on the engines, even though the City has maintained them in excellent condition. In January 2002, these engines were replaced using a $100,000 operational budget line item expenditure.

6. Program Hosts Louisiana Mosquito Control Assoc. Convention:

The 43rd Annual Meeting of the Louisiana Mosquito Control Association was hosted in New Orleans at the Pontchartrain Hotel. Participants represented local, State and Federal agencies involved in public health, universities and private industry. The program included speakers from the Centers for Disease Control in Atlanta, and speakers from Florida, Texas, Louisiana and Nebraska. While discussion focused mainly on mosquito control in Louisiana, papers on emergency preparedness, bioterrorism and malaria control in Africa were also presented.

7. Termite Control in City Trees:

Hurricane and storm activity in the early 1990s damaged numerous City live oak trees revealing extensive termite infestations in them. Further studies indicated that as many as 50% of our mature oaks could be infested with native and Formosan subterranean termites. Left unchecked, our oaks would likely have been decimated in 10-20 years. The NOMTCB initiated efforts to secure several million dollars in State grants to apply termiticides to every City-owned tree in New Orleans.

8. Operation Full Stop: French Quarter Termite Control Project:

Mayor Marc Morial created the "Mayor's National Formosan Termite Control Initiative Task Force in 1996 and the seeds that grew into Operational Full Stop were sown. A Ten Year Plan for a National Formosan Termite Control Initiative was drafted and Mayor Morial organized a group of citizens, educators, business people and staff to go to Washington to begin the process. The United States Department of Agriculture, Agricultural Research Service, Southern Regional Research Center became involved in 1996 and 1997. The USDA Technical Advisory Committee was formed and the plans for action were drawn. Phase one of the French Quarter Project was begun in 1998 and completed in 1999. Phase one is the area bound by Decatur, Bourbon, Conti and Dumain Streets. Following the successful treatment of this area, phase two is set to begin in spring of 2002. Phase two will expand the treatment area to include phase one and move out one block to now cover the area bound by the Mississippi River, Dauphine, Bienville and St. Phillip Streets.

With a unique partnership among the City of New Orleans, United Department of the Interior, LSU, the State of Louisiana and the United States Department of Agriculture and several other major participants, we have been able to direct up to $12,000,000 a year into research and the control of Formosan termites in the City of New Orleans. Operation Full Stop has expanded beyond the City of New Orleans and is truly a national program and should continue to be the national and international leader in Formosan research and control.

9. NOMTCB Assumes Rodent Control Operations:

In 1998, the New Orleans Mosquito & Termite Control Board assumed the operations of the City's Vector and Rodent Control Program. The Administration considered the duties of that program to be more compatible with those of our program rather than the Health Department, where they

had been since their inception. There were no personnel changes, and the merge has worked well since the beginning.

10. Develops and Patents Unique Termite Bating System for F.Q., Historic Districts and Commercial Structures:

On July 27, 1999 a City employee with the NOMTCB was issued a patent entitled "Tamper Resistant Bait Cover and Bait Access System." Subsequently, the patent was offered to the City coincident with an ordinance allowing all future city employees to invent, patent, copyright etc. and share the profits with the City. The bait cover was essential in allowing placement of termite baits in the French Quarter and other structures with limited soil access around them. These bait covers have made it possible to protect commercial, historic and residential structures worldwide that might not have been protected otherwise. By 2002, several hundred thousand of the patented bait covers had been sold worldwide.

11. NOMTCB Receives Grant from NCPTT to Control FST in Cabildo and Presbytere:

Treatment of the Cabildo Museum, the Presbytere Museum and Madam John's Legacy Museum was originally funded in 1996 by the National Center for Preservation Technology and Training, in cooperation with Dr. Nan-Yao Su of the University of Florida in Ft. Lauderdale. The research conducted in these buildings helped develop the use of an above-ground bait station to combat infestations not easily accessible from the soil.

The continued monitoring of the Sentricon bait system by NOMTCB personnel in these buildings has suppressed the Formosan subterranean termite activity to almost non-existing levels.

12. NOMTCB Works with Dow AgroSciences to Develop the use of Baits to Control FST in Pontalbas and Jackson Square:

The New Orleans Mosquito and Termite Control Board (NOMTCB) initiated a baiting program in the Upper Pontalba apartments and in Jackson Square in a cooperative study with Dow AgroSciences (formerly DowElanco) in 1995. The purpose of this study was to determine the

effectiveness of the Sentricon* *Termite Colony Elimination System* in eliminating Formosan subterranean termites in areas where liquid termiticide technology had failed.

One of the most important developments of the study in the Upper Pontalba apartments was the placement of the Sentricon termite bait stations through the slate and concrete in the hallways leading to the apartments where there was no available surface soil. Previously, termite baits had not been used to access subterranean colonies through the concrete.

Because of the success achieved in the Upper Pontalba apartments, several historically important buildings in the French Quarter in close proximity to Jackson Square were placed on the Sentricon System. The buildings treated and monitored by the NOMTCB included the Cabildo Museum, the Presbytere Museum, Madam John's Legacy Museum, the Lower Pontalba apartments, the Vieux Carre Commission building and the Pharmacy Museum.

This research demonstrated that the new bait technology could be successfully used to control termite infestations in historical multi-story, brick buildings with shared-wall construction with no soil access. We have seen a dramatic reduction in the termite activity and swarming adults in the Jackson Square area. The maintenance crews in the museums now only occasionally do repairs and these are usually from old termite damage.

13. <u>NOMTCB Publishes First Identification Guide for the Termite Species of Louisiana:</u>

In August 2001, the first pictorial termite identification guide for Louisiana was published, entitled "The Termite Species of Louisiana: An Identification Guide." The guide was designed to help pest management professionals, termite researchers, and state extension personnel identify any termite species currently found in Louisiana, which includes four subterranean and four drywood termite species. High-quality, detailed pictures were taken of each species to allow a novice termite technician or researcher to correctly identify any species. The information on the distribution and swarming activity of these eight species was gathered during the first statewide termite

survey conducted by NOMTCB with samples from the pest control industry of Louisiana from 1999 through 2001. The results from the statewide termite survey will be published in a scientific journal in early 2002.

14. NOMTCB Discovers a new Species of Dry Wood Termite in Louisiana:

On June 9, 1998, drywood termite alates (swarmers) were collected from a tree next to Perseverance Hall in Louis Armstrong Park. The alates were identified as western drywood termites, *Incisitermes minor*, which is considered one of the five most economically important and destructive termite species in the U.S. The naturally occurring *I. minor* populations are generally found along the west coast. This was the first report of *I. minor* in Louisiana and the first report of a non-endemic drywood termite species infesting non-structural wood. Since the initial discovery in New Orleans, *I. minor* alates and soldiers have been collected from the following cities in Louisiana in the past two years: Gretna, Schriever, Lafayette, Natchitoches, Cameron, De Ridder, Morrow, and Vidalia. The presence of *I. minor* in these cities suggests that this species can easily be transported inside furniture and structural lumber to new areas within Louisiana and throughout the U.S.

15. New Orleans is now Established as the Center of Operational Research for the Study of FST:

In the early 1990s, the New Orleans Mosquito Control Board realized that Formosan subterranean termites might well be as big or a greater problem than mosquitoes. In 1993 Hurricane Andrew damaged numerous City live oak trees. At least 50% of the broken limbs and trunks were a result of termite damage. The Board applied for and received a State grant of $100,000 to investigate and characterize the extent of this problem. Since this first grant, the Board changed its name to the New Orleans Mosquito "and Termite" Control Board. We have since received millions of dollars in State, Federal and industry grants to study and control the subterranean termite problem. New Orleans is now the number one preference for industry, government and university field research.

16. List of Publications, Cyclops Rearing Manual and Termite publications:

Our 20 year old Biological Control Program had made much progress during the past eight years. Our development of predaceous copepods for eliminating mosquito larvae is the only stand-alone mosquito biological control method in the world. The following publications from our staff highlights this accomplishment:

G.G. Marten, W.Y. Che, and E.S. Bordes. 1993. Compatibility of cyclopoid copepods with mosquito insecticides. J. Am. Mosq. Control Assoc. 9:150-154.

G. Borjas, G.G. Marten, E. Fernandez, and H. Portillo. 1993. Juvenile turtles for mosquito control in water storage tanks. J. Med. Entomol. 30 943-946.

G.G. Marten. 1993. Biological control in C.L. Meek and G.R. Hayes (eds.). Commercial Pesticide Applicator Mosquito Control Training Manual. P. 57-61. Louisiana Mosquito Control Assn. New Orleans, LA

E. T. Schreiber, W.L. turner III. A.M. Lopez, C. F. Hallmon, and G.G. Marten. 1993. Evaluation of two cyclopoid copepods for Aedes albopictus control in the panhandle of Florida at low introduction rates. J. Florida Mosquito Control Assoc. 64: 73-77.

G.G. Marten, E.S. Bordes, and M. Nguyen. 1993. Operational use of cyclopoid copepods at the New Orleans Mosquito Control Board. J. Florida Mosquito Control Assoc. 64: 129-131.

G.G. Marten, G. Borjas, M. Cust, E. Fernandez and J.W. Reid. 1994. Control of larval Ae. Aegypti (Diptera culicidae) by cyclopoid copepods in peridomestic breeding containers. J. Med. Entomol. 31: 36-44.

J.W. Reid and G.G. Marten. 1994. The cyclopoid copepod (Crustacea) fauna of non plank habitats in Louisiana and Mississippi. Tulane Studies in Zoology & Botany 30: 39-45.

G.G. Marten, E.S. Bordes, and M. Nguyen. 1994. Use of cyclopoid copepods for mosquito control. Hydrobiologia 292/293: 491-496.

G.G. Marten, M.F. Suarez and R. Astaiza. 1996. An ecological survey of Anopheles albimanus alarval habitats in Colombia. J. Vector Ecology 21: 122-131.

V.S. Nam. N.T. Yen, B.H. Kay, G.G. Marten and J.W. Reid. 1996. Eradication of Aedes aegypti from a village in Vietnam using copepods and community participation. Am. J.Trop. Med. Hyg. 59:657-660.

G.G. Marten. 1999. Cyclopoids, mosquitoes, and dengue hemorrhagic fever. Monoculus 38: 21-27.

G.G. Marten, M. Nguyen, B. Mason, and G. Ngo. 2000. Natural control of Culex quinquefasciatus larvae in residential ditches by the copepods Macrocyclops albidus. J. Vector Ecology 25: 7-15

G.G. Marten. 2000. Dengue hemorrhagic fever, mosquitoes and copepods. J. Policy Studies (Japan) 9:131-141.

Gerald Marten & Greg Thompson. 2000. Copepod Production & Application for Mosquito Control. Produced for NOM&TCB.

Greg Thompson, Ed Freytag & John Stennett. 1997. Mosquitoes Insectary Procedures Manual. Produced for NOM&TCB.

Messenger, M.Y., R.H. Scheffrahn and N.-Y. Su. 2000. First report of Incisitermes minor (Isoptera:Kalotermitidae) in Louisiana. Florida Entomol. 83: 92-93.

Su, N.-Y. and M.T. Messenger. 2000. Measuring wood consumption by subterranean termites (Isoptera: Rhinotermitidae) with digitized images. J. Econ. Entomol. 93: 412-414.

Messenger, M.T. 2001. The termite species of Louisiana: an Identification fuide. New Orleans Mosquito and Termite Control Board Bulletin No. 01-01. 12 pp.

Freytag, E.D., Carroll, M.K. and Bordes, E.S. 2000. Control of Formosan subterranean termites in Perseverance Hall in New Orleans, Louisiana. J. Preservation Tech. 31: 71-75.

Su, N.-Y., Freytag, E., Bordes, E.S. and Dycus, R. 2000. Control of Formosan subterranean termite infestations using baits containing an insect growth regulator. Studies in Conservation. 45: 30-38.

Freytag, E. 2000. Research on the Sentricon system at historical New Orleans sites. DowAgrosciences White Paper. 7 pp.

17. NOMTCB Initiates Buck Moth Control Program:

In 1989 we received State funding to control buck moths for that year and 1990, two of the worst years in memory. Since then, we have, in cooperation with Parks and Parkway, been monitoring the city's live oaks for buck moths and their caterpillars. We also advise the general public about controlling these pests.

18. Armstrong Park Project:

The Louis Armstrong Park project is one of the many projects included in the Operation Full Stop Program, which is led and funded by USDA-ARS SRRC in New Orleans. The goal of the project is to identify and characterize each subterranean termite colony and monitor the invasion by nearby established colony(s), or re-establishment of new colony(s) by alate (swarmer) pairs into vacated territory of colony(s) that have been eliminated using baits containing hexaflumuron.

Triple mark-recapture studies were initiated in May 1998 to identify and characterize every termite colony present in the park. There are currently 14 Formosan subterranean termite (FST) colonies in the park, in addition to six smaller native subterranean termite colonies. Three of the eleven FST colonies tend to forage predominantly in the surrounding neighborhoods and occasionally invade the park. These 14 colonies are monitored on a monthly basis using over 60 underground monitoring stations scattered throughout the park.

In September 2001, three FST colonies (#2, #3 and #9) in Armstrong Park were eliminated. Since September 17, there has been no activity in the Sentricon stations, underground monitoring stations, and previously infested trees present in the territory of each colony. Even before these three colonies were officially eliminated, two adjacent FST colonies moved into the borders of colonies #2 and #9. Also, a native subterranean termite colony is present again inside the territory of colony #2. The movement of the two re-invading FST colonies is currently being monitored and the vacant territory of colony #3 will be monitored for re-invasion by adjacent colonies. Beginning in 2002, Sentricon stations will be installed in the territories of the remaining colonies and bait will be applied during the summer to eliminate every termite colony. Finally, the park will be monitored for re-invading colonies from the surrounding area and/or alate pairs establishing new colonies in the vacant territories.

19. NOMTCB Assistant Director Worldwide Mosquito Control Consultant:

New Orleans has a long history of mosquito-borne diseases. From the mid 1600s through the mid 1940s New Orleans was plagued by such diseases as yellow fever, dengue fever and malaria. The City still has sporadic cases of encephalitis. The program's Directors and Assistant Directors have often been sought out as international consultants for mosquito and mosquito-borne disease control.

During the Marc Morial Administration, the Assistant Director consulted with the following governments: **Jordan** in 1998 and 1999 for general mosquito and rodent control and Rift Valley Fever; **Romania** in 1997 for West Nile Virus (appeared in U.S. in 2000); **Honduras** 1991-1994 for a survey and design of a mosquito control program in Puerto Cortez, Honduras and a program proposal for San Pedro Sula, Honduras.

20. Biological Control Methods used in Vietnam:

The City of New Orleans, through its mosquito control staff, provided direct assistance to Vietnamese scientists in setting up a mosquito and vector-borne disease program using copepods (small crustaceans that eat mosquito larvae). Several villages have eliminated 100% of their dengue using only copepods, a fete never accomplished by any other method, including

insecticides. The program has been so successful in decreasing the occurrence of dengue fever that it is being examined as a template for future control programs throughout Southeast Asia.