



November 13, 2024

INTRODUCTION

The following is a response to a request by the Thibodaux City Government Administration to provide a comprehensive program of mosquito abatement for the City of Thibodaux, (City). It is offered by Vector Disease Control International (VDCI) to deliver a program of integrated pest management of mosquitoes as described in the official manual of the Louisiana Mosquito Control Association (Fourth Edition 2007).

The program described is designed to utilize scientific and environmentally sound techniques of mosquito control including: Inspection & Surveillance, Larviciding, Adulticiding, Physical Control, Encephalitis Virus Surveillance, Public Education and Encephalitis Virus Suppression. The program is based upon our extensive experience gained in the more than thirty years during which VDCI and its affiliated entity Mosquito Control Services (MCS) has provided integrated mosquito abatement services to Parishes and Municipalities in Louisiana.

We wish to thank the City of Thibodaux for the opportunity to respond to its request for a mosquito control program proposal. This response begins with a summary highlighting the capabilities and work performed by Vector Disease Control International and Mosquito Control Services.

Sincere Regards,

Steven G. Pavlovich
Entomologist
Director of Field Operations

FIRM OVERVIEW

Vector Disease Control International (VDCI) and its associated local entity Mosquito Control Services (MCS) are committed to providing the best possible service to our customers. We strive to improve the quality of human life in communities through education, surveillance and the control of mosquitoes and other disease vectors. We are also committed to research and the use and support of application technologies. VDCI is a company built on the foundations of public health, ethics, professionalism, and technical expertise. Many of our staff come from the field of public health and have experience with public mosquito control districts all over the country. At all times, we will conduct business through partnerships with our customers in a manner that protects the environment and the welfare of local residents.

VDCI has operations in 25 states across the country. Starting with the simple idea to provide government entities with the products and services needed to run effective mosquito control programs, VDCI/MCS now has over 30 years of experience. VDCI will strive to continue to provide the most efficacious and scientifically sound mosquito surveillance and integrated control programs possible within each program that we provide for our customers.

Because it is often impossible to eradicate all mosquitoes given their behavior patterns, resilient nature and enormous breeding potential, our goal is to manage mosquito populations within tolerable levels and simultaneously help prevent possible outbreaks of mosquito-borne diseases. To achieve this goal, we use a combination of the most effective methods of controlling mosquitoes including surveillance, biological control and the use of insecticides. Inspection of the treatment area coupled with collections from mechanical traps enable us to determine which species of mosquito are present, their population size and locations. This information is critical for determining when, where, and how often larvicides and adulticides need to be applied.

The employees of VDCI/MCS recognize and readily accept the special considerations that often surround the use of larviciding and adulticiding practices to abate mosquito populations during a mosquito control program. As a private entity working for you, VDCI looks forward to a close working relationship with all appropriate officials, and, as such, will work with and support you in all surveillance and application decisions. With a fleet of over 250 trucks and 12 aircraft, we are able to provide both aerial and ground applications in any situation nationwide.

VDCI is eager to submit this proposal for comprehensive mosquito control services. We take great pride in the ability of our programs to protect the public's health from mosquitoes and the diseases they may transmit and to provide a quality of life improvement in the control area. As such, we have a long history of establishing fully integrated programs combining all aspects of the American Mosquito Control Association (AMCA) and Centers for Disease Control and

Prevention (CDC) guidelines for a quality mosquito control program such as education, surveillance, larval mosquito control and adult mosquito control.

From consulting to basic contingency aerial applications, to full service integrated mosquito management programs, VDCI's employees strive to create a true partnership with government agencies, communities, and citizens.

We invite you to review our proposal for our full and comprehensive mosquito control services. We are confident that you will see that our qualifications, commitment to excellence and prior experience will allow for a successful and cost-effective partnership between our company and the City of Thibodaux.

PROPOSAL SUMMARY

Background: Vector Disease Control International and its associated company Mosquito Control Services, LLC have more than 30 years concentrating exclusively on Mosquito Control and Public Health. VDCI is on the cutting edge of technology and expertise in the Mosquito Abatement Industry and operates a fleet of more than 250 fully equipped spray trucks and 12 twin-engine aircraft. Two Medical Entomologists, two Field Biologists, and a Laboratory Biologist are involved in the daily operations of each VDCI program.

Liability Insurance: Our program offers significant insurance coverage which shifts liability from Thibodaux to VDCI. We carry more than 5 million dollars in General Liability Coverage, Excess Automobile Coverage, Contractors Pollution Coverage and 5 million in Aviation Liability.

Spray Equipment: Our proposal provides for the routine use of Four fully equipped spray trucks and at least one similarly equipped extra vehicle to be available for use as a spare or in emergency response. *The sprayers offered are equipped with on board computers, speed guided flow control, and GPS mapping of all relevant spray data.* VDCI/MCS has access to a significant amount of additional equipment and trained personnel if needed in the City of Thibodaux. These assets could be relocated within hours and are often essential following severe weather events and/or encephalitis activity. VDCI offers the truck based adulticiding treatment of a minimum of 150,000 acres per year and the ground based larviciding of 10 million to 20 million square feet per year.

Calibration and Droplet Testing: Since the size of the chemical droplets generated by sprayers is critical, we provide an AMES DCIII/ DCIV computer device that collects, measures, and reports important aspects of the chemical cloud to assure effectiveness of the spray on the mosquito population.

Aerial Application: VDCI can provide multiple twin-turbine aircraft equipped to deliver any EPA approved adulticide at ULV rates. We utilize two licensed pilots equipped with military grade night-vision goggles rather than just a pilot and an observer for every spray mission. These pilots have extensive experience in low altitude spraying over urban areas. Although our proposal does not provide for routine aerial application, this service is provided as an option to the City in response to mosquito borne disease activity or extreme pest populations resulting from storm activity.

Additional Services: Our program provides City of Thibodaux with two unique services, termed “Barrier Spraying” and “Woodland Fogging”. VDCI offers the use of special truck mounted equipment to apply a “barrier” around festivals, sporting events, and other gatherings the day before the event to repel mosquitoes from the site. We also propose to use an ATV mounted ULV sprayer that is capable of targeting adult mosquitoes in adjacent woodlots and other sites inaccessible to road-based vehicles.

Virus Surveillance and Suppression: VDCI and MCS have had considerable first-hand experience in disease surveillance and suppression. In response to this, we provide a detailed encephalitis surveillance and suppression plan to the City of Thibodaux as part of our routine operations. This surveillance is part of a protocol examined and reviewed by two state Medical Entomologists and includes a detailed plan to counter virus activity. The protocol includes access to our own purpose built and one of the only privately operated laboratories devoted exclusively to the detection of West Nile encephalitis and other mosquito-borne viruses. This has allowed VDCI and MCS to process samples in one to two days compared to the near week required by state laboratories.

Public Education Programs: VDCI provides a means of informing the public of what it can do to reduce mosquito problems around the home and what is being done for them by the City. The program provided herein includes such methods as radio announcements, printed literature, door to door education, and presentations at civic associations.

Efficacy Testing: One important aspect of any mosquito abatement program is the scientific monitoring of the chemical effectiveness on the local mosquito population. Accordingly, all pesticides as well as application techniques used in the City of Thibodaux program will be tested at least once annually. Tests include both laboratory and field trials using laboratory reared or wild captured mosquito larvae and adults to assure effective control efforts.

Price and Value: Vector Disease Control International and Mosquito Control Services have always strived to bring true value to our clients through the services provided in our Mosquito Abatement Programs. Our combined company is able to perform mosquito abatement services at

significantly lower rates than in-house/other programs due to our regional presence. VDCI's large footprint allows for greater purchasing power, the ability to spread fixed costs across several programs, and affords each of our operations access to additional equipment, vehicles and personnel if needed to respond to hurricane or encephalitis emergencies. We are confident that the reader will find this to again be evident after review of the attached proposal.

COMPETENCY OF VECTOR DISEASE CONTROL INTERNATIONAL

Vector Disease Control International with Mosquito Control Services, LLC and its associated companies have operated since 1985 with the philosophy that a professionally staffed company could provide mosquito control services more efficiently than a government operated program. That proven philosophy remains intact today as we continue contract work in cooperation with our associated companies across the diverse gulf south ecosystems of Louisiana, Georgia, Alabama, Florida and Mississippi that range from freshwater swamps to saltwater marshes to densely populated suburban and urban areas.

Our main Louisiana headquarters office, laboratory, and shop facility is located in Metairie, LA (Jefferson Parish). Facilities of our associated companies are maintained in the Parishes of St. Charles (Luling, LA), St. John the Baptist (Reserve, LA), Lafourche & Terrebonne (Houma, LA), Pointe Coupee (New Roads, LA), St Bernard (Violet, LA), Lafayette (Scott, LA) as well as in the Mississippi County of Jackson (Gautier, MS), the Georgia County of Glynn (Brunswick, GA) and the Florida County of Clay (Green Cove Springs, FL).

The VDCI technical staff that will be directly associated with the City of Thibodaux program includes two members with Master of Science degrees in Entomology, two graduate Biologists; and an operations manager with more than twenty-five years' experience. In addition, the technical staff of our associate companies includes several other graduate Biologists and pest control professionals that may be used to supplement abatement efforts if needed. Each Entomologist and Biologist holds a valid certification by the State of Louisiana in Category 8d (Mosquito Control Supervisor) and each is a Certified Pesticide Applicator. Additional certifications include Category 8a, Mosquito Control Applicator, Category 8b; Rodent Control; Category 3, Ornamental & Turf Pest Control; Category 5a, Aquatic Pest Control; Category 6, Right-of-Way & Industrial Pest Control; General Pest Control and Commercial Vertebrate Control. Inspectors assigned to the Parish program have been tested and approved by the State of Louisiana in Category 8a (Mosquito Control Applicator) and are also Certified Pesticide Applicators.

Employee Training:

Employee training is an integral part of VDCI's philosophy. Management personnel spend considerable time with field and laboratory staff to ensure that mosquito biology, control options and company policy is well understood. After completion of our training program, all inspectors are sent to the state for examination and certification. Inspectors are routinely sent to attend area conferences on mosquito abatement in order to keep their skills and certification current. Spray-truck drivers are given more than 25 hours of training in proper spray techniques, equipment operation, and reaction to emergency situations. Many of our employees are annually trained and certified through third-party OSHA Spill Response Programs so that VDCI can properly and safely handle a spill should one occur.

Contractual experience of VDCI's associate company Mosquito Control Services during the last (3) years includes:

Jefferson Parish, LA* –Lafourche Parish, LA* –St. Charles Parish, LA* –
 Jackson County, MS* –MS- St Bernard Parish, LA* –
 Acadia Parish, LA*- Lafayette Parish, LA*
 Chevron Chemical Company –Town of Gramercy–
 St. John the Baptist Parish, LA* – City of Thibodaux, LA –
 Town of Grand Isle, LA – Universal Studios – Glynn County, GA* –
 St. James Parish, LA*- Terrebonne Parish, LA*
 Clay County, FL*

*Please note that all current Parish and County contracts listed are area-wide agreements, and most all are comparable in size and complexity to that proposed for the City.

Services performed for county/parish and municipal clients are: Mosquito Inspection & Surveillance, Control of Larval Mosquitoes (via biological & chemical means), Encephalitis Virus Surveillance, Control of Adult Mosquitoes with Ground Equipment, Control of Adult Mosquitoes using Aircraft, Encephalitis Virus Suppression, Public Education and Control of other Pests of Public Health Importance. Services provided for our Corporate Clients generally include Mosquito Inspection and Surveillance, Control of Adult Mosquitoes with Ground Equipment, and the Control of Larval Mosquitoes.

In addition to the evidence supporting of the competency of VDCI/ MCS given herein, we offer the fact that this company provided mosquito abatement services to Parishes in Louisiana for more than 30 years and performed routine Mosquito Abatement work for the City of Thibodaux since 2004. As a result, VDCI and its affiliated entities currently have and maintain all necessary permits and licenses to perform all the work detailed in this proposal.

Contact information for VDCI and MCS Louisiana Headquarters is as follows:

Name: Vector Disease Control International
c/o Mosquito Control Services, LLC

General Manager: Steven G. Pavlovich

Address: 1000 Labarre Road
Metairie, LA 70001

Telephone: (504) 366-0084
(800) 256-1784
(504) 368-2512 Fax

***References with which VDCI's affiliated entity Mosquito Control Services has contracted in the last three (3) years as the primary contractor to provide mosquito control services of comparable size and complexity to that offered to City of Thibodaux include the following. Please note that each of the Parish/County operations below represents a current contract and that each is a multi-year program.**

***Jefferson Parish, LA**

1985 to Present
Full Integrated Program
4901 Jefferson Hwy
Jefferson, LA 70121
Katherine Costanza, Env. Director
(504) 731-4612

***St. Charles Parish, LA**

1990 to Present
Full Integrated Program
P.O. Box 302
Hahnville, LA 70057
Matt Jewell, Parish President
(985) 783-5000

***Lafourche Parish, LA**

2004 to Present
Full Integrated Program
P.O. Drawer 5548
Thibodaux, LA 70302
Rita Riviere, EOC Director
(985) 562-9569

***St. John Parish, LA**

1989 to Present
Full Integrated Program
1801 W. Airline Dr.
LaPlace, LA 70069
Jacklyn Hotard, Parish President
(985) 446-8427

***Jackson County, MS**

1993 to Present
 Full Integrated Program
 P.O. Box 998
 Pascagoula, MS 39568
 Brian Fulton, County Adm.
 (228) 769-3089

***St Bernard Parish, LA**

2016 to Present
 Full Integrated Program
 8201 W Judge Perez Drive
 Chalmette, LA 70043
 John Lane, Chief Administrator
 (504) 278-4200

***St. James Parish, LA**

2013 to Present
 Full Integrated Program
 5800 LA 44
 Convent, LA 70723
 Eric Deroche, EOC Director
 (225) 562-2265

*** Glynn County, GA**

2014 to Present
 Full Integrated Program
 1725 Reynolds Street
 Brunswick, GA 31520
 Larry Little, Public Works Manager
 (912) 554-7701

PAST PERFORMANCE

Since 1985, Vector Disease Control International and its associated companies have been providing fully integrated mosquito abatement programs that are both operationally successful and cost effective. We employ a staff of skilled professionals that design and manage our programs utilizing state-of-the-art technology/ equipment and a highly trained staff. As a result, we have been very successful in retaining contracts with our clients over multiple terms. As the reader will notice from the list above, VDCI and MCS have been able to continue providing mosquito abatement services to many of our clients through multiple contract periods and bid situations.

MANAGING AND TRACKING INFORMATION

In our county/ parish wide programs, VDCI implements the use of several methods to manage and track the information acquired during each phase of mosquito abatement. VDCI begins this management and tracking by designing hard copy and digital forms for data entry and recording of applications. Our forms have been designed to include all relevant surveillance and application data including those items required by the Department of Agriculture. We have developed a proprietary database that tracks and totalizes such things as surveillance/trap data, truck and aerial application data, and requests for service. VDCI then uses industry developed hardware and software to precisely record and store data that is collected from the customer request/ response, surveillance, larviciding and adulticiding programs. Many of our current

programs use the Vector Management Systems to database requests and their responses, record and analyze surveillance data and through the use of hand-held GPS units map larviciding sites and detail inspector applications. Our truck-based programs use the state-of-the-art flow control modules as a supplement to our ULV sprayers. This equipment and software precisely regulate the application of chemicals regardless of speed and accurately records and databases all necessary information. Our aerial operation is mapped and guided by the Wingman® Flight Control System which uses a very precise GPS and real time wind information to direct the aircraft application on the assigned polygon. The Wingman program records all application information for analysis and reporting with a map overlay. All of the aforementioned data collection and recording methods are then compiled to produce our weekly, monthly, and yearly reports.

TECHNICAL PROPOSAL OF MOSQUITO CONTROL SERVICES, LLC

ADMINISTRATIVE PERSONNEL LIST

Technical personnel who will perform the administration of the contract include the following:

VDCI's and MCS's Louisiana based senior staff consists of a medical entomologist with managerial experience of more than twenty-five (25) years in conducting area-wide mosquito abatement. Other Entomologists, Biologists and Field Managers work under the direct guidance of the entomologist and discuss the mosquito situation on a daily basis. Field managers assign routine tasks to Inspectors and based on data reported by the Inspectors and other information, formulate appropriate responses to mosquito problems with senior staffers.

EXPERIENCE, QUALIFICATIONS AND KEY PERSONNEL LIST

Technical personnel who will perform the administration of the contract include the following...



Steven Pavlovich, Director of Field Operations – Master of Science / Medical Entomologist – Mosquito Abatement Experience: 30 years -Coordinates abatement efforts with Biologists and Operations Managers. Provide assistance for Services, purchasing, public relations, aerial assignments and technical expertise.



Samuel Stines, Chief Biologist – Bachelor of Science Biologist– Mosquito Abatement Experience: 20 years– Supervises managerial and Biological Activities, Implement County-wide IPM service strategies. Assist in abatement applications and efficacy testing.

Tommy Heurtin, Operations Manager – Mosquito Abatement Experience: 32 years; 21 with MCS/VDCI- Responsible for all aspects of an abatement program including... identification of larval and adult mosquitoes; Receiving, investigating, and resolving requests for service within two work days; Ensuring that all vehicle and equipment maintenance is completed according to schedule; Performing encephalitis surveillance tasks such as gravid and CDC trap placement/ collection; Evaluation of subordinates performance; Delegation of larviciding assignments to inspectors; Assignment of truck based adulticiding operations; Performance of post treatment inspections for evaluation of insecticide; Ensuring that appropriate amount of chemicals are dispersed; Maintain records as required by Department of Agriculture; Calibration of spray equipment; Responsible for making sure that chemicals are mixed properly; Responsible for ensuring that field inspectors and night drivers are properly trained to perform their duties; Familiarization with all subordinates jobs and have ability to perform these duties as needed; Performance of work as given by the contract and General Managers.

Jennifer Riley, Experimental Entomologist– Bachelor of Science – Mosquito Abatement Experience: 3 years- Perform and record bottle bio-assay tests for each chemical used in each VDCI Parish; Evaluate and make recommendations on the placement of district surveillance equipment; Compile and report all disease surveillance activity to the appropriate state agencies; Perform cage and/or Pre and Post tests for the purpose of evaluating the efficacy of adulticides used; Evaluate the breeding sites/ potential breeding sites associated with each County; Design and perform efficacy tests on all larviciding products used by each company agency; Aid in the organization and implementation of disease response activities; Assist districts in the droplet testing and calibration of spray equipment; Review pre and post treatment data received from districts; Aid in the completion of disease response protocols.

UNDERSTANDING OF PROJECT REQUIREMENTS

The intent of the mosquito control program herein is to aid in the comfort and protect the well-being of the citizens of Thibodaux. Based on our knowledge and experience in the field of mosquito abatement, we shall follow an integrated pest management protocol initiated by our company in 1985 and continually enhanced throughout the years in order to remain on the forefront of mosquito abatement techniques and technology. As a result of an extensive survey and analysis of the conditions in Lafourche parish and in the City of Thibodaux, our protocol has been modified and tailored to meet Thibodaux's specific needs.

The first step in solving any problem is to define the problem. To that end we have spent considerable effort in trapping and identifying mosquito species native to Thibodaux. Both CDC and Gravid Traps were placed in representative locations throughout the City as part of a study for the City of Thibodaux and operated daily for a several day period. The data produced gave

further insight to the mosquito types, conditions and challenges to be encountered during a typical mosquito season. The species collected included; *Cx. quinquefasciatus*, *Cx. pipiens* and *Aedes albopictus* in urban/suburban areas; *Ae. vexans*, *Cx. nigipalpus* and *Anopheles quadrimaculatus* in suburban areas; as well as *Psorophora ferox*, *Ae atlanticus* and *Ps. columbiae* in woodland areas; and *Cq. perturbans* in areas with heavy aquatic vegetation. These mosquitoes species and others identified in the attached report are consistent with those observed in the surrounding area as well as in several other parishes we currently serve, and will be combated as illustrated in the scenarios below:

The entire city will be under constant surveillance by Inspectors operating sampling devices such as New Jersey Light Traps, CDC Light Traps, Gravid Traps, Landing Rate Counts, Rain Gauges, and by using data from the inspection of mosquito breeding sites and citizen service requests. The information gained will help direct Inspectors to areas most likely causing mosquito problems and provide the basis and direction for control pressure responses.

Larviciding is the first line of defense and the most efficient of the control efforts. Sites found to be active within an urban/suburban area will be addressed using residual and non-residual liquid or granular insecticides. In permanent or semi-permanent water (areas that will likely remain flooded for some time) breeding habitats, the top water mosquito fish (*Gambusia affinis*) can be relocated to the site to serve as biological control agents. The exact location of each breeding area will be recorded and stored electronically so that they may be revisited to evaluate treatment effectiveness and to monitor for re-infestation of the site.

It is impossible, of course, to eliminate all the larvae before they are able to become adults. Therefore, the next step in our protocol is to precisely track the adult mosquito population. This is done through the use of several trapping devices, Landing Rate Counts and citizen's request for service. New Jersey Light traps are an industry standard and capture a wide variety of mosquito species. These traps are positioned throughout the city and are automatically operated three or more nights each week. The following morning, Inspectors collecting the trap samples take Landing Rate Counts at each trap site and record the results. These collections are returned to the laboratory for counting, identification, and evaluation. Analysis of this data results in patterns emerging in near real time showing the location and density of specific mosquito species and their movement. Since some species are easily attracted to a light source and others show only a moderate response to light, the numbers must be interpreted to determine the threat suggested by the data.

Based on this information, a plan is formulated to first address the most aggressive mosquito species or, in the case of a health threat, the most likely vector species. (Note: The mosquitoes involved in many mosquito-borne human and animal diseases in our region are *Culex quinquefasciatus*, *Aedes albopictus*.) Typically, several spray vehicles are assigned to treat and

envelop the target area(s) in question. If the infestation is expansive or the mosquito species involved is coming from inaccessible marsh or the mosquito population is extremely large, aerial application will be used – often in combination with ground spraying vehicles. Treatment areas are further prioritized based on need as indicated by the data analysis and supplemented as needed by maintenance spraying. Ultimately, the response is determined by the mosquito population density, species involved, health issues and extraneous factors such as events or holidays when people are expected to be outdoors and need protection.

Spot treatment of adult mosquitoes is often necessary in areas that are inaccessible to truck mounted Ultra Low Volume units. Thick woodland areas often require the use of ATV mounted spray units in order to address mosquitoes such as *Ps. ferox* which tend not to be effectively controlled by road-based spray applications. Dense urban areas often require the use of drain system fogging with specifically designed equipment to address resting *Cx. quinquefasciatus* and other anthropophilic mosquito species. Lastly, the use of barrier equipment around public gatherings can reduce the infestation of a wide variety of mosquito species when used in combination with ground adulticiding applications.

KNOWLEDGE OF LOCAL CONDITIONS

The methods and protocols described in this proposal are based on the experiences of our affiliated companies and as a result of a Mosquito Control Services survey of the City. We are confident that the reader will find this gives VDCI and MCS a unique understanding of the local needs and conditions existing in the City of Thibodaux.

BASED ON OUR EXPERIENE AND ASSESSMENT OF THE CONDITIONS IN THE CITY OF THIBODAU, VDCI SUGGESTS THE FOLLOWING CONTROL STRATEGY DETAIL:

VDCI warrants compliance of all applicable laws and regulations regarding the use of pesticides and container disposal; that all power equipment used to apply chemicals shall be certified by the Louisiana Department of Agriculture and Forestry (LDA&F) and that it will maintain a full time staff member assigned to the City certified in category 8d by the LDA&F. Furthermore, VDCI shall follow the Occupational Safety and Health Administration (OSHA) and Environmental Protection Agency (EPA) requirement to maintain a safe work environment. The mosquito surveillance and abatement program offered by VDCI herein follows the integrated pest management approach as described in the Official Louisiana Mosquito Control Association Training Manual (Fourth Addition 2007).

INSPECTION & SURVEILLANCE

The purpose of inspection and surveillance in a mosquito control program is to define the problem in terms of type, extent, and location. Since the problem is biological, it is dynamic, and requires an almost constant input and analysis of data. This information gathering effort is directed to both mosquito larvae and adults, but while the techniques and objectives employed in tracking these life forms differ considerably, VDCI/MCS has the professional and technical expertise to perform these duties.



(a) Mosquito Larvae

The object of our larval inspection program is to locate, map, and catalog active mosquito breeding sites. Although it is an ongoing process, the long range goal of this program phase is the location and record of all major non-marsh breeding sites in the City. This information then makes it possible to quickly return to breeding sites following a rainfall event and effect control. It is, quite simply, a technique that makes the overall program more effective and efficient.

(1) Identify Sites: The inspection for and mapping of mosquito breeding sites outside of marshes will be aided by Global Positioning System (GPS) technology. Hand-held GPS's will allow crews to precisely record breeding locations and will guide the return visit and re-inspection of the site. This system combined with breeding site capacity information will be used to create a database of mosquito breeding sites. The resulting data will then be used in determining larvicide and adulticide needs as well as in evaluation of said treatments.



(2) Inspection: Inspection of known or suspected mosquito breeding sites will be conducted on a routine basis as directed by rainfall, tidal, and mosquito activity. Inspections will be conducted using standard mosquito survey techniques. Representative samples will be collected and identified to genus; fourth instar larvae will be identified to species whenever practical. Records

of these inspections will show larvae density as a series of ranges per dip. Additional data such as water depth, water type, larval genus, developmental stage and treatment type will also be recorded when pertinent. Resulting data will be used in determining needed larviciding and adulticiding response.

Since rainfall is a major factor in hatching floodwater mosquito eggs, data on rainfall events is very important. This information, used to guide Inspectors to mosquito breeding areas most likely to be flooded, will be collected two to three times each week from rain gauges located in representative sites throughout the City.

Supplemental larval surveillance direction may be provided by observing plant type as an indicator of both positive and potential mosquito breeding locations.

(b) Mosquito Adults

The New Jersey Light Trap, an industry standard, will be the primary adult mosquito surveillance tool utilized by VDCI. New Jersey Light traps will be installed in representative locations throughout the City. It is further suggested that these traps be operated two to three times each week during the mosquito season. The traps will remain in the same or similar locations from one year to another in order to preserve the resultant historical data. Mosquitoes collected by said traps will be identified to species and reported as to the number of males/females of each pest species per trap location per trap night. A trap night is defined as the period from approximately dusk to dawn when a light trap operates.

Data on adult mosquitoes will also be collected by Landing Rate Counts, a technique that records the number of mosquitoes attracted to an Inspector within a specified time interval. Observations will be made near light trap locations when light trap samples are collected. Reports on this technique will illustrate the landing rate of mosquitoes per minute, and their identity to species. This method is particularly useful when dealing with salt marsh and other flood water mosquito species that can be very common in the low lying areas of Thibodaux. Data collected using this technique will be used to supplement the information gathered by the light traps and aid in determining optimum spray responses for particular mosquito species.

CDC (Center for Disease Control) Light Traps will be employed to supplement available adult mosquito surveillance data when needed. These traps are portable, battery powered sampling devices that can be baited with Carbon Dioxide and used in areas where electricity is not available, or when information is needed from specific sites not already sampled by New Jersey Light Traps. These CDC traps will also be used to supplement the use of Gravid Traps (West Nile Traps) in collecting mosquitoes for encephalitis and other disease testing.

Little Black Jars (LBJ's), also called Ovitrap, will be used to assess the adult populations of container breeding mosquitoes. These devices, which capture the eggs of several *Aedes* mosquitoes and act as a supplemental surveillance technique for those mosquitoes not readily attracted to light traps. These mosquitoes are of particular interest as potential vectors of the Zika Virus

(c) Encephalitis Surveillance



VDCI shall provide surveillance for the mosquito borne viruses of West Nile virus, encephalitis and other mosquito borne diseases as may be needed. Samples of adult mosquitoes will be collected with use of Gravid Traps and CDC Traps once or twice a week based on environmental conditions and vector mosquito populations during the period of March through October and may be expanded if conditions warrant. As a result of VDCI's experience in the City, we suggest the routine use of a mixture of four Gravid Traps and CDC Traps for

mosquito-borne disease surveillance. Resultant samples, taken from representative areas of the city, will be tested for the presence of virus activity by the Louisiana Animal Disease Diagnostic Laboratory. When necessary, samples collected outside the peak encephalitis period described above will be tested in VDCI's laboratory using the RAMP or VecTOR testing systems.

The plan submitted herein is in keeping with long standing virus monitoring efforts and contains provisions for a multi-level approach to surveillance of suspected vectors. Since SLE and WN are the two viruses likely to cause the greatest problems, particular attention will be paid to the prime vector, *Culex quinquefasciatus* (the Southern House Mosquito), and the potential vector, *Aedes albopictus* (the Asian Tiger).

Expanded Encephalitis Surveillance

VDCI shall provide surveillance for the mosquito borne viruses of St. Louis Encephalitis (SLE) and West Nile virus (WNV) as needed upon directive from the City of Thibodaux. The plan submitted herein is in keeping with long standing virus monitoring efforts and contains provisions for a multi-level approach to surveillance of suspected vectors. **The plan was developed by VDCI and its associated company MCS, submitted to, and subsequently acknowledged by Several State Health Departments as being a very thorough and effective means of surveillance for mosquito borne diseases in this area.** Since SLE and WNV are the two viruses likely to cause the greatest problems, particular attention will be paid to the prime

vector, *Culex quinquefasciatus* (the Southern House Mosquito), and the potential vector, *Aedes albopictus* (the Asian Tiger). (The term “vector”, for the purpose of this document, shall reference the Southern House Mosquito and the Asian Tiger Mosquito.) While the Asian Tiger has been shown to be an efficient vector of WNV in the laboratory, it has not been implicated in an actual transmission in nature. Nevertheless, both mosquito species will be targeted by this plan. Surveillance is divided into three major categories: Inspection, Sampling, and Efficacy Testing (Spray Effectiveness) and will begin the first day of March, provided that the testing of samples is a service provided by the Louisiana Animal Disease Diagnostic Laboratory (ADDL). Otherwise, Mosquito collecting for testing will commence on the first day of May and end on the last day of October each year unless otherwise noted.

I. INSPECTION

Southern House Mosquito Inspections:

Efforts will center on habitats typical of these mosquitoes including: septic roadside ditches, catch basins, and artificial containers.

- A. Septic Roadside Ditches:** Septic roadside ditches will be revisited routinely during the mosquito season to locate specific ditch sites that are actively breeding.
- B. Catch Basins:** There are two types of storm water catch basins found in the city; one has an open or slotted grate while the other has a solid cover with only side access. The open grate basins are relatively easy to inspect, however, raising each grate would be impractical for sampling. Those basins with solid covers present a totally different problem because it is often not possible to determine if they contain water without lifting the cover, a time consuming and potentially dangerous effort. Since each type is constructed with a relatively deep debris trap that usually contains water, it will be assumed that such basins are positive for mosquito breeding and addressed accordingly when they are located within five blocks of a Gravid Trap that indicates a critical vector mosquito level.

The area and frequency of inspection of storm water catch basins will be determined by the adult vector population as indicated by Gravid Traps. Said efforts will be initiated when the adult vector population reaches the critical level of 100 Southern House Mosquitoes, or 25 Asian Tigers collected by a Gravid Trap in a 12 to 24 hour trapping period when baited with a mixture of water and emulsified fish oil. These are the population levels considered critical by the Center for Disease Control.

- B. Artificial Containers:** Sanitation enacted around the home and workplace by residents is the only solution to the control of container breeding mosquitoes. We

shall solicit the help of residents by distributing pamphlets through local vendors, door-hangers on individual homes and other means of communication during routine operations and in response to a confirmed case of a mosquito borne disease in a human, animal or mosquito.

II. SAMPLING/ ARBOVIRUS SURVEILLANCE

- 1. Gravid Trap:** The Gravid Trap is a sampling device designed to attract female mosquitoes that have already had a blood meal. Specimens will be collected, identified and numbers will be tracked as to date and location(s) to plot trends. In addition to providing population data, *Culex quinquefasciatus* specimens may be frozen and subsequently tested for SLE and WN virus by ADDL and/or in-house testing as detailed above.
- 2. CDC Trap:** This trap performs a similar function to the Gravid Trap except it collects mosquitoes that are seeking a blood meal as well as those that are searching for an oviposition site. Resulting specimens may be processed in the same manner as those collected by Gravid Traps.
- 3. Mosquito Testing:** Mosquitoes collected by Gravid Traps will be tested for the presence of SLE and WN virus by ADDL. Should ADDL continue to provide testing at a nominal charge, VDCI will continue to submit samples each month throughout the mosquito season, weather permitting. Otherwise, mosquito collections should begin on the first day of May and end on the last day of October each year by means of testing performed in the VDCI/MCS Laboratory. In the event that ADDL/DHH confirms that a mosquito pool, animal, or human is positive for SLE and/or WN, VDCI will begin testing mosquito pool samples collected in the vicinity of the positive sample in our laboratory to insure a rapid turn-around for results.

III. EFFICACY TESTING

Efficacy testing will be performed by making pre and post spray evaluations of the free-range vector mosquito populations through the use of Gravid Traps. Additionally, tests will be conducted using laboratory reared or field captured adult vector mosquitoes placed in cages and subjected to acceptable testing techniques that generate a susceptibility base-line as a reference point for further testing. Both types of testing will be conducted a minimum of once each calendar year on each chemical routinely used by VDCI in the City of Thibodaux to control adult mosquitoes.

CHEMICAL CONTROL

Chemicals used in the performance of the proposed contract will be limited to those approved for the control of mosquitoes by the Federal Environmental Protection Agency. Applications will be made in accordance with label directions, as will the handling and disposal of empty pesticide containers.

(a) Adult Mosquito Control

Control measures directed against adult mosquitoes will include spraying with several types of ground-based equipment and the optional use of aircraft. This multi-faceted approach can be considered essential, due to problems presented by residential expansion into prolific mosquito breeding areas and response to emergency situations resulting from severe storms or mosquito borne disease activity. Ground and/or aerial adulticiding applications will be made during the peak adult mosquito activity period consisting of just prior to dusk to approximately 3 (three) hours after dusk.



Ground Spray Operations

The primary means of applying chemicals from ground level to control adult

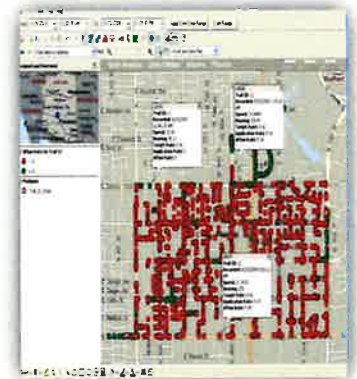
mosquitoes will be via vehicle mounted ultra-low volume (ULV) sprayers. Four to Five vehicles outfitted with heavy duty ULV sprayers equipped with flow control systems that use ground speed sensors to adjust the chemical flow rate to the

vehicle speed to programmed rates will be used. With the exception of ATV's and off-road vehicles, sprayers will be fitted with GPS control devices that will be linked to an onboard, in cab, computer system for operation and data recording. Each spray vehicle will be equipped with a map and tracking system to report time, location, speed and vehicle direction, as well as indicating when the sprayer was actively spraying and when it was not spraying. Records generated will be available for inspection by the city during normal business hours. These vehicles will also be outfitted with a communication system so the driver may contact the Night Supervisor and/or Program



Manager. All spray vehicles will be marked for identification with the company brand and unique identification numbering.

The exact area to be sprayed from the ground for control of adult mosquitoes must be determined by the extent and duration of the problem encountered as indicated by the surveillance phase of this program and the necessity to reduce their population to acceptable levels. As warranted by the mosquito population, but VDCI will schedule a weekly treatment of each zone in the City of Thibodaux during the Mosquito Season. Should State Declared Emergency conditions exist as the result of a storm event or disease outbreak and supplemental applications be requested by the City of Thibodaux, the cost for such services will be as defined in the section "Services Above the Normal Scope of the Contract". The pesticides used will be limited to those approved by Federal Environmental Protection Agency (EPA) and include products such as; CSI 30-30, Anvil 10+10, DeltaGuard, Permanone 30-30, Evoluer 30/30, Duet, Fyfanon and MosquitoMist 1.5. All Adulticiding products will be applied in accordance with label directions and will not be applied at a rate lower or higher than prescribed by the label. In addition to vehicle mounted sprayers, hand-held thermal and/or non-thermal sprayers will be employed for spot spraying when practical.



ULV truck mounted sprayers will be checked before each use for correct chemical application rate, and recalibrated if necessary. This will be accomplished by pre and post product weight comparisons as well as onboard computer analysis. In addition, a Droplet Spectrum Analysis will be performed routinely during the mosquito season to monitor droplet size generation. The analysis will be performed by an Ames DC-III/ DC-IV unit, a computer driven device developed by the U.S. Army to rapidly and accurately calculate droplet spectrums. Proof of calibration and droplet size

will be submitted to the city at any time upon request.

SPECIAL EVENTS

Adult mosquito problems associated with large gatherings of people such as festivals and fairs will be addressed with a technique known as a Barrier Treatment. When feasible to use, this method allows us to spray an area with a repellent/insecticide several days prior to the special event when people are not



present. We will use a specifically designed, truck-mounted, cage blower machine with a Rotary spray nozzle for this purpose. We have tested and used this technique extensively, and achieved excellent results. This effort will also be supplemented by using motorized backpack blowers for those areas that are inaccessible to vehicles. At the request of City officials, VDCI will apply Barrier Treatments for up to 10 public events.

AERIAL VECTOR CONTROL ACTIVITIES

Chemical control of adult mosquitoes can be used whenever and wherever it is determined that mosquito populations have reached unacceptable levels. Surveillance, source reduction, larviciding, and public education will all be used to reduce the amount, frequency, and areas that adulticides are needed. However, the end result of organized mosquito management is often the application of adulticides. Chemical adulticides should be as safe and as environmentally friendly as possible. Additionally, caution should be used to avoid developing resistance to pesticides in local mosquito populations. VDCI will apply only EPA and Louisiana registered public health pesticides labeled for mosquito control. At times, aerial mosquito control chemical applications have proven to be the most effective way to control mosquito populations. Partnering with VDCI gives the City the ability to quickly request aerial applications.

VDCI's aerial adulticide fleet is second to none. Our fixed-wing aircraft are capable of applying any registered adulticide over congested areas as required by the FAA. Our experience and success in mosquito spraying with aircraft is unsurpassed in the industry. VDCI provides the necessary ground support personnel for pesticide handling and loading. All ground support personnel are trained to meet or exceed safety requirements for transferring product(s) in compliance with Federal Environmental Protection Agency (EPA), State and local agencies as well as the ability to proactively contain any challenges associated with product spills.



Certifications/Aircraft Make and Model.

VDCI shall utilize FAA approved aircraft, equipped with systems for the dispersal of adulticides over rural and/or congested areas, in fulfilling the terms of the contract. No herbicides have been/will have been applied through any equipment VDCI will utilize for the execution of this contract. VDCI shall provide all labor, equipment, fuel, supplies, insurance, and any other requirements to complete the terms of the contract. The aircraft

used within the contract shall be certified by the Federal Aviation Administration (FAA), and comply with all requirements of FAR Part 137, Agricultural Operation. An approved FAA Congested Area Plan will be provided prior to commencement of operations. All log books will be made available for review by the City at any time. Copies of daily flight records will also be provided to the City.

Aircraft Maintenance.

VDCI has an accomplished, in-house maintenance staff continually performing routine and emergency maintenance on all our aircraft. All maintenance crewmen are FAA certified IA mechanics. All of our aircraft are in compliance with FAR 137. Prior to the start of the project, as defined by the ordering agency, VDCI will complete all flight tests and approvals required by the FAA and allow for inspection of all aircraft and equipment used in this project. VDCI will maintain an accurate daily flight record and furnish the Development Management with a copy upon request.

Spray System.

All aircraft used within the contract shall have a spray system able to produce droplets of pesticide within the specifications stated on the label, while applying at a label-approved rate. These leak proof spray systems are constructed so that all insecticide can be completely drained.



Operation Monitoring and Surveillance.

All aircraft will have the capability to produce a digital GIS map capable of “replaying” the aerial mission as it was flown using the flight recording software. Our GIS Specialist will also graphically display the flight path, spray switch status, air speed, date, time, positional GPS coordinates, meteorological variables, and spray cloud drift prediction data for each application. The AIMMS-20 weather system and Wingman™ GX application system allow us to not only apply the proper amount of product in the proper treatment area, but they also allow us to depict precisely where the product has drifted. Consequently,

pesticide application is maximized in the target area and the risk to adjacent, non-target areas is greatly minimized.

Spray System Calibration and Characterization.

VDCI implements an active quality assurance system to ensure that all our work is performed to the highest possible standards of operational safety and efficacy. VDCI has a very stringent policy on maintaining the aircraft and equipment to the highest level. Throughout the season we routinely inspect and calibrate all application equipment. We have an understanding of the NPDES reporting requirements and keep records accordingly.

Support Equipment.

VDCI will be responsible for assisting in the loading and unloading of the aircraft. VDCI shall provide sufficient personnel with capabilities that meet or exceed safety requirements for transferring product(s) in compliance with the US EPA, state, and local agencies as well as the ability to proactively contain any challenges associated with product spills.

Loading personnel will follow all pesticide mixing and loading procedures as directed on the product label and ensure proper use of Personal Protective Equipment (PPE). Prior to operations each day, all connections and fittings will be checked to ensure they are properly secured. Spill kits will be on hand and available for use. All aircraft valves will set in the proper position and ready for loading.

A support truck and trailer will be available for each aerial mission. Equipment included on the support trailer shall include all equipment and supplies required to fully and efficiently allow for the successful loading, and possible clean-up, of all pesticides used during the aerial operation. All empty pesticide containers will be returned to the manufacturer by VDCI.

GPS Navigation System.

Each aircraft will utilize a Sat-Loc or equivalent for GPS navigation during the application flight. Each system will:

- a) Be capable of GPS (Global Positioning Satellite) guidance with gridline capabilities. The system shall have an accuracy of zero (0) to ten (10) feet and be used on *all* aerial spray missions.
- b) Will process onboard meteorology accurate within less than one (1) knot; a two (2) degree vector and less than one (1) degree in temperature to be used for optimization in real-time and detection of a temperature inversion.

VDCI will have each spray block's report available within 24 (twenty-four) hours of completion, our reports will include:

- Post-spray GPS maps of treated area. Our records will include:
 - Flight direction
 - Spray on and spray off
 - Flight path
 - Offset
 - Wind speed and direction
 - Altitude
 - Air speed of the aircraft
- The volume of pesticide applied (in OZ and or pounds per acre)
- The date and time of application
- The name of the pesticide applied
- Model and tail number of aircraft used for application
- Name of pilot(s) and State licenses number

Aircraft Communication.

VDCI aircraft have Nav/Com radios capable of direct communication to Air Traffic Control (ATC), ground crews, and VDCI control support during every VDCI aerial application mission.

Should emergency conditions warrant and aerial applications be requested by the City of Thibodaux, the cost for such services will be as defined in the section "Services Above the Normal Scope of the Contract".

(b) Larval Mosquito Control

Mosquito breeding sites found positive for larvae will be addressed, if feasible, with pesticides approved for such use (Altosid, Natular, CoCoBear Larvicide, BVA2 Larvicide Oil, Vectobac, Vectolex, Aquabac, Spheratax etc.) or through biological controls. Application will be made using truck-based larviciding rigs, ATV mounted rigs, power backpack blowers and hand operated



equipment suitable for the chemical being applied and in a manner consistent with label recommendations. Only pesticides approved for such use by Federal Authorities shall be used. Quick acting non-residual products such as the BTI products will be utilized in most floodwater habitats. Catch Basins and other semi-permanent water sites may be treated with the extended control formulations such as Altosid 30 day briquets and Vectolex or Spheratax (*Bacillus sphaericus*) 30 day granular products.



Ground Larviciding: Using ground application techniques, **VDCI shall larvicide the mosquito breeding surface water of the all spray zones each calendar month during the term of this agreement.** As in the case of adult mosquito control, the exact amount of larviciding will be determined by the mosquito problem encountered. However, minimums described above will be met unless unusually low mosquito populations prevail. Should such conditions arise, a reduction in the amount of

areas sprayed will be allowed only at the discretion of the city provided sufficient evidence is presented to justify said reduction and provided the city is in agreement with said evidence.

BIOLOGICAL CONTROL

Many mosquito breeding sites lend themselves to such biological control measures as insectivorous fish. Thus, whenever practical, the predatory minnow, *Gambusia affinis*, has been, and will continue to be used against mosquito larvae. This small fish is native to Louisiana and does not represent the introduction of a new life form to the area. Minnows will be maintained in a custom built holding/breeding tank for introducing as needed into suitable mosquito breeding sites where they can



continue to multiply, and affect control without the use of chemicals. In addition to stocking these fish in confirmed mosquito breeding sites, they will be made available to residents of Thibodaux upon request at no charge. In areas where the use of mosquito fish is not advisable, but where larviciding is practical, application of naturally occurring bacteria such as *Bacillus thuringiensis israelensis* (BTi), *Bacillus sphaericus* (BS H5a5b) and/or other biological agents will be used.

Expanded Transmission Suppression

Upon VDCI being notified by the Louisiana Department of Health and Hospitals (DHH) and/or the Louisiana Animal Disease Diagnostic Laboratory (ADDL), and/or the Louisiana Department of Epidemiology or other responsible state agency that a person within the contracted area of the City has been diagnosed with mosquito borne encephalitis/Zika and there is likelihood that this person contracted such while within said area, or notification has been given of a mosquito sample submitted by VDCI is positive for encephalitis/Zika, or notification that an animal is positive for mosquito-borne encephalitis/Zika in the referenced area, VDCI will notify the City and, upon authorization from the City, shall enact a transmission suppression plan in accordance with the protocol outlined herein:

- 1) In the absence of conflicting information, the vicinity of a case, trapping site, or animal location will serve as the epicenter from which inspection, sampling, and control efforts will radiate.
- 2) Personnel will be assigned to inspect the immediate area surrounding the epicenter and to continue outward for an approximate five city block area depending upon the geographic location, the topography, and the surrounding conditions. The purpose of the search will be to locate vector mosquito (the Southern House Mosquito and/or the Asian Tiger) breeding sites. Once located, the larvae will be addressed by releasing Mosquito Fish, if that is feasible, or treating with bio-larvicide, if that is feasible.
- 3) While the exact address of the infected person, trapping site, or animal location will not be divulged, residents in the area will be made aware that there is a heightened potential for encephalitis infection in their neighborhood and that personal protection and yard sanitation is required. This will be done by distributing door hangers and other informative literature within an approximate five city block radius of the epicenter.
- 4) During the evening hours, truck mounted sprayers will be assigned to spray the area radiating from the epicenter in an effort to reduce the vector population below the critical level as noted in the expanded surveillance portion this proposal.
- 5) The efficacy of this operation will be determined through the use of Gravid Traps. Specimens collected will be submitted to the ADDL for testing and/or tested in-house. If the reduction is not accomplished after three nights of truck spraying, aerial spraying will be considered as a supplement to the ground spraying efforts.

The aforementioned encephalitis response suppression plan is one that was designed by VDCI's affiliates in 2002 and acknowledged by the state health department as a comprehensive response. Since that time, this plan has been implemented as an encephalitis response in each of our area programs.

The City of Thibodaux recognizes that it is not possible for VDCI to warrant or guaranty that by utilizing the surveillance and/or the mosquito control services delineated herein for VDCI to eradicate any and/or all mosquitoes which may come within the city and/or which are bred within the city and which carry one or more virus, and/or other mosquito transmitted disease which may be injurious to the health of one or more residents of Thibodaux and/or any persons temporarily within the city and/or any animal in the City. Accordingly, VDCI, and any of its employees and/or agents and/or members and/or insured and/or contractors, shall not be responsible and/or liable to the City and/or any one acting through the city for any claims, and/or damages and/or liability and/or fines and/or penalties and/or causes of action arising out of and/or relating to and/or resulting from any and/or all viruses and/or sickness and/or illness which may be caused directly and/or indirectly and/or in conjunction with any other disease and/or virus and/or immune deficiency associated with any person which is attributable in any fashion from the results of one or more mosquito bites, whether the effect from such bites is immediate and/or results from the cumulative effect of mosquito bites obtained over time.

PHYSICAL CONTROL

The City of Thibodaux Public Works Department will be notified, at the discretion of VDCI, of mosquito breeding sites caused by such problems as clogged ditches, improper drainage conditions, and broken sewer lines, so that the City may consider repair or other permanent source reduction interventions. In addition, VDCI inspectors will perform physical control by emptying and/or removing breeding containers, if feasible, when found during routine or encephalitis response inspections.



EFFICACY TESTING

Efficacy testing will be performed through the use of Caged Adult Mosquito Field Trials and/or pre and post spray evaluations of the adult mosquito populations through the use of CDC Traps, Gravid Traps (West Nile Traps), New Jersey Light Traps and/or Landing Rate Counts. Additionally, tests will be conducted using laboratory reared or field captured adult mosquitoes subjected to acceptable testing techniques that generate a susceptibility baseline as a reference point for further testing.



These tests will be performed using the **Center for Disease Control (CDC) Bottle Bioassay Protocol**. Both types of testing will be conducted at least once each calendar year on every chemical routinely used in the City to control mosquitoes.

PRODUCT ROTATION

Our insecticide testing program in our state of the art laboratory that examines each mosquito control product in our inventory and how well it is working with the local mosquito population. This data is used to guide the rotation of insecticides throughout the year as well as for treatments in response to the detection of encephalitis activity. VDCI will often change adulticiding products several times in a year in order to preclude insect tolerance. As part of our virus response procedure, VDCI implements an immediate change from the routine insecticide product so to address potential disease transmitting mosquitoes from a different angle.

APPLICATION RECORDS

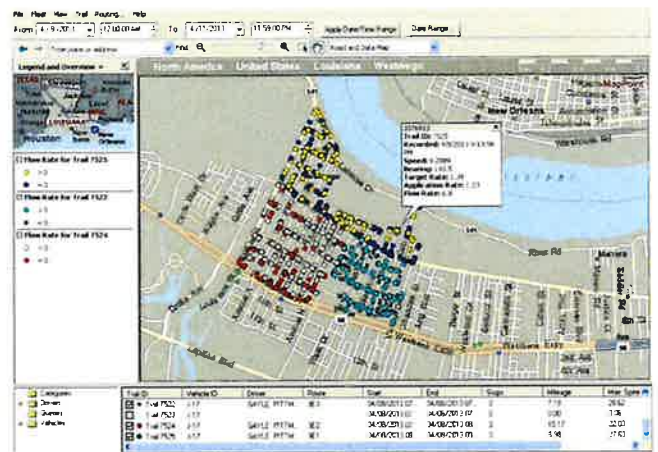
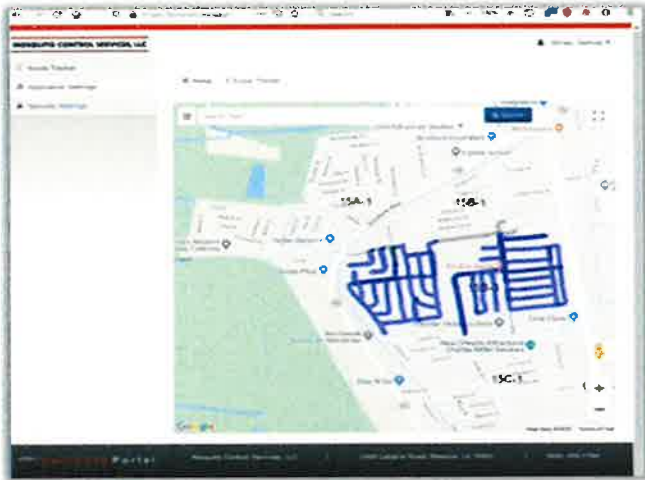
VDCI/MCS keeps extensive records on all ground and aerial insecticide applications. All records are in compliance with the standards set forth by the EPA Federal guidelines, i.e. Federal Insecticide Fungicide Rodenticide Act (FIFRA) sections 11 and 26(c). All VDCI/ MCS reports are retained for a minimum of three years and made available to Regulatory Officials upon request.

Ground Application Records

Application records are completed by the assigned inspector/applicator and the spray truck tracking system during treatment. After treatment, the GPS tracking information is uploaded and databased. These two systematic reports ensure an accurate account for the spray mileage, amount of chemical applied and the exact location of the application.

Sample Ground Adulticiding Documents:

Truck Tracking of Corresponding Adulticide Application Documents

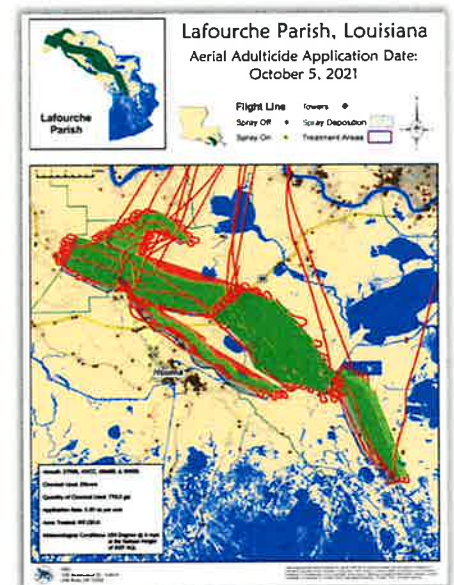


Aerial Application Records:

Aerial application records are developed by our inhouse aviation division and GIS Department. The Wingman Flight Management System allows for precision applications that incorporate weather and compensates for droplet drift accordingly. The reports are developed after each aerial application and promptly reported by VDCI.

REPORTING

All reports will be submitted in the manner described below:



Weekly Reports: VDCI will submit a weekly report detailing the following abatement activities: Light trap data will include location, species and number collected expressed as male/female for each species, and a comparison to the previous week’s collection of female adult mosquitoes. Female index report will include the location, number of trap nights, weekly totals, average per night and average per week. The weekly activity recap will include information on adulticide and larvicide activities including month to date and year to date totals, encephalitis monitoring results, light trap/landing rate data, and complaints. Ground adulticiding data will include the areas sprayed, total number of miles treated, truck nights, and name of chemical

used; aerial adulticiding data will show the area treated and the number of acres sprayed. Larviciding data reported will include the mosquito breeding areas sprayed expressed as square feet of surface water, and the name of the biochemical used. Service request/complaint report will show the numbers of each type of request (adulticide, larvicide, pools, and minnows) as well as a list of requests received and their response.

PUBLIC EDUCATION PROGRAM



Many of the mosquito problems encountered within the City of Thibodaux, as elsewhere, are the result of man-made mosquito breeding sites. Often these problems can be corrected with minimal effort by residents simply emptying standing water from flowerpots, boats, rain gutters, trash, etc. This is particularly true in the control of the Southern House Mosquito (*Culex quinquefasciatus*), an important disease vector, and the Asian Tiger Mosquito (*Aedes albopictus*), which breeds readily in almost any water holding container.

Through the use of several interactive PowerPoint presentations developed with the help of a public relations firm, VDCI has been able to effectively convey material to schools, civic associations, network television/radio, and general meetings. VDCI utilizes several group specific presentations to increase public awareness of mosquitoes, their breeding sites, and the diseases they transmit. Individuals with experience in the education field are employed to present our message to the public. When requested, VDCI shall conduct presentations at fairs, festivals, civic groups, public and private schools, and homeowners associations.



VDCI shall also prepare, on an as-needed basis, press releases, flyers and other written public information materials to be disseminated via distribution to media, civic associations, schools and/or inserts in City water bills. The cost of printing and postage will be covered by City. We shall also prepare Public Service Announcements and/or represent the City mosquito control program on radio/television broadcasts.

OPERATIONS

HOLIDAYS VDCI will observe the city holidays but will, however, perform the critical and essential duties on holidays or weekends during times of excessive mosquito activity. When complaints and mosquito population warrant, spray operations will be extended to weekends and holidays as required.

COMPLAINTS

VDCI shall respond to all complaints within 48 hours, weather permitting, excluding weekends and holidays and take whatever steps that are reasonably necessary to remedy the cause of a complaint, including treatment, recommendations to the property owner and/or the City. All complaints will be tracked and data-based recording the nature of the complaint, our response, and a map of the problem location.

PROMPT SERVICE

Several times each week, Inspectors will visit the sampling traps positioned throughout the City. The collections are returned to our laboratory where they are identified to species, counted and evaluated with respect to pest/vector potential. Thus, we have information updated in real-time on the mosquito population in terms of species and number per location. This data along with Landing Rate Counts taken at each trap is evaluated and a decision made as to the level of response and type of response required to combat the problem. In addition, portable Gravid (West Nile) Traps will be positioned in various sites to monitor the vector population. All of this information along with telephone requests for additional service allows VDCI to promptly respond to a mosquito problem. Please note that a telephone request for additional service is handled in a manner that responds to a specific problem because not all complaints are solved by simply assigning a spray-truck to the area. It is often necessary to dispatch an Inspector to the site to resolve certain difficulties. Such a response ensures customer satisfaction and we have often been told by City representatives that they appreciate our prompt attention to mosquito problems.

PROGRAM EQUIPMENT

VDCI will provide ¼ ton pick-up trucks for the application of larvicides and adulticides. **At least one additional spray vehicle will be available to act as a spare in case of a breakdown or to provide supplemental treatments as approved by the City.** All vehicles and other equipment will be kept in good repair, have a clean appearance and be in a sanitary condition acceptable to the City at all times. Each vehicle shall have appropriate spill kits and safety equipment and will be clearly identified as a mosquito control vehicle as per contract specifications. All power equipment will have a State certification number attached.

Each vehicle will be equipped with a two-way radio or cellular telephone to ensure communications with VDCI’s dispatcher. Non-ATV Spray vehicles used to apply adulticiding chemicals will have a map and tracking system to report time, location, speed and direction of the vehicle as well as when the sprayer was actively spraying and when it was not spraying. All spray vehicles will be marked as described in the request for proposals and each will have a unique three inch by two inch number for identification purposes.

A detailed list of other equipment is given below:

EQUIPMENT LIST *

Vehicles - (4-5) Toyota Tacoma or Chevrolet Colorado Spray Trucks equipped with:

Onboard Computer GPS tracking system,

- Communication devices,
- Rotating beacons,
- Hold-down safety chains,
- Chemical spill kits

(1) ATV vehicle equipped with ULV and Larval sprayers



Aircraft – Multiple Twin-Engine Aircraft equipped with: ULV spray system

- compatible with all chemicals approved by EPA for mosquito abatement,
- Wingman GPS application to assist spray system,
- Night vision goggles – military grade



Sprayers - Truck mounted, ULV sprayers five (5)

- Equipped with **GPS flow control systems**
- Hand-held ULV sprayers,
- Hand-held thermo-fogger- one (1),
- Electric larvicide sprayers – three (3),
- Back-pack sprayer, manual – three (3),
- Back-pack sprayer, power – two (2)



Laboratory: equipped as noted below:

- West Nile test kits
- Encephalitis Viruses test kits,
- Mosquito rearing paraphernalia,



Insecticide efficacy testing equipment, Computer driven DNA Thermal Cycler,
 Autoclave Sterilizer,
 Ultra Violet lighting equipment,
 Laboratory grade pipettors,
 Laboratory grade glass wear,
 Miscellaneous laboratory equipment,
 Computer w/laboratory software

Special Equipment:

Truck Mounted Low Volume A-1 Misters with rotary atomizer to apply Barrier Treatments.

AMES DCIV Droplet Testing Machines with associated operating computers



Miscellaneous:

Mosquito Management Database for recording

breeding sites & response to complaints,

Light traps, New Jersey type – fourteen (14),

Light traps, CDC type – seven (7),

Gravid Traps – fourteen (14),

LBJ/Ovitrap – fourteen (14),

Tanks, chemical storage and mixing,

Pumps, transfer type,

“A” frame hoist,

Mosquito Fish holding/breeding tank,

Microscopes two (2),

Microscope lamps,

Slide spinners, electric,

Personnel uniforms and IDs for easy identification by residents,

Personal safety equipment,

Computer systems,

Office equipment – various



*** Please note that in addition to the above equipment, VDCI and MCS has a considerable amount of extra vehicles, equipment, and trained personnel from our five surrounding locations that may be available if needed.**

OFFICE

VDCI will maintain an office, shop and chemical storage facility for the servicing of the City of Thibodaux Contract. Said office is the place to which all notices, directions, orders, requests and complaints shall be mailed, served or delivered. VDCI will provide a telephone number for the handling of resident service requests and will have a responsible person monitoring from 7:30 a.m. to 4:00 p.m. on Monday through Friday, excluding holidays as defined herein. If there is an excessive mosquito hatch, spray operations will be extended to weekends and holidays, if necessary. VDCI may elect to operate inspection and larviciding crews during the hours of 6:30 a.m. to 3:00 p.m. for increased larval control and the ability to perform surveillance activities during more optimal times.

Corporate Names: Vector Disease Control International
Mosquito Control Services, LLC

Management Contact: Steven Pavlovich, MS, BS, 8d

Services Manager: Brandy Billiot

Office Address: 1753 Grand Caillou Road
Houma, LA 70363

Telephone: (985) 580-1629 Office

INSURANCE

VDCI shall provide the following types of insurance within the limits specified below during the contract period.

Workers Compensation	Statutory
Employer's Liability	\$1,000,000
Automobile Liability and Bodily Injury and Property Damage Combined	\$1,000,000 each occurrence
Excess Auto and Employer's Liability	\$5,000,000
Commercial General Liability	\$5,000,000
Contractor's Pollution	\$5,000,000

COMPENSATION FOR SERVICES

VDCI shall provide the services described under this agreement for a monthly fee of \$10,995 subject to such adjustments as specified in this agreement. This amount shall be paid to VDCI in (9) Nine equal monthly installments during the performance period of March through November. Services will not be performed or billed during the Months of December, January or February unless requested by the City.

SERVICES ABOVE THE NORMAL SCOPE OF THE CONTRACT

VDCI will provide additional services with prior written approval of the City if events occur that require increased effort and associated cost beyond the normal scope of this Proposal (i.e., hurricanes, flooding, man-made catastrophes, mosquito borne disease suppression, services performed beyond the maximums outlined in this proposal.) Said costs are as outlined below:

Larviciding –VDCI shall charge the City \$ **.002** per square foot of larvicided surface water which includes all labor, chemicals, equipment, and materials. A report is to be provided with the billing that details the amount of larvicide applied, the locations of the application, and the date of the applications.

Truck Mounted Adult Mosquito Spraying - \$ **525.00** per truck assignment (One Spray Truck's Assignment of Zone(s) during One Normal Application) which includes all labor, chemicals, equipment, and material. A report will be attached to any billings to the City that details the date and time of the truck assignment, the zone sprayed, the pesticide used, the driver's names, and the boundaries of the areas sprayed if it is less than an entire zone.

Aerial Adult Mosquito Spraying – VDCI shall charge the City \$ **1.98** per acre which includes all labor, chemicals, equipment, and materials for every acre of the City that is sprayed by plane with approved pesticides. The aerial spraying shall be performed in minimum incremental blocks of 1500 acres and confirmed with an aerial spray record confirmation report that records the spray time and application rate of the plane along with the name of the chemical used. Additionally, the plane's flight path during the spraying shall be recorded with a global positioning system and a report is to be generated from this device that details the location of the plane while the pesticide is being applied.

In the event of any situations arise during the term of this agreement that require services other than specified herein the parties shall first reach an agreement as to the scope and cost for such services. Any agreement between the parties shall be first reduced to writing and made an

amendment to this agreement before it shall become effective; provided neither party shall be obligated to negotiate and/or contract with the other as to any such request for additional services.

LICENSES

VDCI shall at all times during the term of this agreement maintain all such necessary state and/or federal licenses and/or permits required for the storage and/or use and/or application of pesticides and/or other chemicals and/or substances regulated by any agency of the state and/or federal government.

TERM OF CONTRACT

It is proposed that a professional service contract as agreed upon be in effect for a three (3) year period commencing on March 1, 2025 and terminating on November 30, 2027. At the end of this initial period, the contract may be extended in its current form or altered as agreed by both the City and VDCI; for) additional periods of three (3) years.

SUMMARY

This proposal is offered to the City of Thibodaux for consideration as the framework for a professional service contract. Our proposal is not intended to be restrictive in any manner and is subject to alteration by City officials in drafting a final agreement. We appreciate our relationship with the communities of the City of Thibodaux and welcome the opportunity to be of continued service.

Respectfully submitted,

Steven G. Pavlovich
Entomologist
General Manager
Director of Field Operations

CONTRACT SIGNATURE PAGE

This agreement dated the ____ day of _____ 2024, between the City of Thibodaux, Louisiana and Vector Disease Control International dba Mosquito Control Services, LLC for mosquito abatement services as outlined in the proposal dated November, 13, 2024 for the cost of \$10,995 per month when services are provided.

Agreement and Authorization:

For the City of Thibodaux, Louisiana:

Signature: _____
Name: _____
Title: _____
Date: _____

For Vector Disease Control International

Signature: _____
Name: _____
Title: _____
Date: _____