



City of Fenton

301 South Leroy Street · Fenton, Michigan 48430-2196 • (810) 629-2261 • FAX (810) 629-2004

COUNCIL WORK SESSION AGENDA

Monday, April 4, 2011

City Hall Conference Room

301 South Leroy Street

7:30 PM

1. Call to Order.
2. Roll Call.
3. Citizen Comments: Request by citizens to speak on specific agenda items.
4. Presentation by the Fenton Regional Chamber of Commerce regarding their upcoming goals and projects.
5. Discussion on Mosquito Control for the City of Fenton.
6. Community Development Block Grant Projects for the City of Fenton.
7. Discussion on the Silver Parkway Lighting Project.
8. Discussion on the Fenton Art Walk.
9. Call to the Audience.
10. Adjournment.

IF ACCOMMODATIONS ARE NEEDED DUE TO A DISABILITY, PLEASE CONTACT THE CITY CLERK'S OFFICE.

Memorandum



THE CITY OF
FENTON

DATE: March 25, 2011

TO: Lynn Markland, City Manager

FROM: Daniel Czarnecki, Public Works Director

RE: Mosquito Control II

I contacted Loren Cunningham from Central Life Sciences, the company that makes Altosid XR. According to Mr. Cunningham, the Altosid XR product is not a restricted use product. The State of Michigan website says we need to obtain an applicator's license from them only for using restricted use products. Since the product is not restricted, I believe City of Fenton personnel could apply the Altosid XR product to our catch basins. However, from there it gets more complicated.

Basically, there are issues with using any type of pesticide product in the vicinity of a body of water. In 2006 the EPA issued a ruling that confirmed the EPA's past operating approach that pesticides legally registered under the Federal Insecticide, Fungicide, and Rodenticide Act (which Altosid XR is registered) for application to or near aquatic environments, and legally applied to control pests at those sites, are not subject to NPDES permit requirements. In 2007 this interpretation was challenged in the U.S. Sixth Circuit Court of Appeals. The appeals court ruled the EPA interpretation was wrong and vacated the EPA rule. Parties had until April 2009 to seek a rehearing. While a rehearing was not requested, a request was made to give the states two years to develop permits and to provide outreach and education to the regulated community. On March 3, 2011, the EPA requested an extension from April 9 to October 31, 2011, to allow more time for the permits to be developed and obtained. A decision on this extension request by the 6th Circuit Court has not yet been made.

If the extension is granted then our staff should be allowed to utilize Altosid XR in accordance with the product's label requirements for this year. If the extension is not granted and a permit is required we will not be able to apply the product ourselves. My review of the states permitting process indicates at least two and possibly three exams would need to be passed by the individual who would be performing the work. I do not believe we would be able to have someone pass the exams in time to apply the products this summer. In that instance it would be in our best interest to hire Advanced Pest Management to perform this work as part of their overall pest control proposal.

Memorandum



THE CITY OF
FENTON

DATE: February 23, 2011

TO: Lynn Markland, City Manager

FROM: Daniel Czarnecki, Public Works Director

RE: Mosquito Control

I talked to Mr. Mullins from Advanced Pest Management about the City performing the catch basin treatment for the upcoming season. According to Mr. Mullins the Altosid XR briquet product costs \$3.67 per briquet and they come in cases of 220. For our approximately 2050 basins we would need 10 cases at a cost of \$8,074. If the DPW were to perform this work we could save \$5,702 (bid price \$13,776 minus material cost \$8,074).

The installation of the briquet into the catch basin is as simple as throwing them into the basin. While the briquet does not kill the mosquito, it does prohibit it from developing past the larvae stage. The product is design to continue working throughout the mosquito season. Mr. Mullins is checking on any permitting requirements the State of Michigan may have for the use this product. According to the Altosid website information, the product is labeled an irritant and use of safety glasses and gloves should limit exposure, however, I cannot find if the product is considered restricted and would need a license to apply. I have emailed the supplier for this information. If special licensing is not needed, then this would be a good job assignment for the DPW in the first half of June.

ADVANCED PEST MANAGEMENT

PO Box 125

Fenton, MI 48430

(810) 735-8731 Toll Free (877) 276-4714

February 16, 2011

Mr. Lynn Markland, City Manager
& The City of Fenton Council
301 South Leroy Street
Fenton, MI 48430

Dear Mr. Markland;

Advanced Pest Management is pleased to submit a comprehensive proposal to the City of Fenton for contractual mosquito control services for the 2011 season. The enclosed proposal represents the most complete, comprehensive, and environmentally sound municipal mosquito control program that is available anywhere. APM is aware of the budgetary constraints of the City of Fenton and has held our pricing at the 2008 levels the past two years. You will notice a slight increase (2%) in application rates for 2011. APM is a strong proponent of prevention and feels that larviciding is an important component in reducing mosquito populations and the necessity of spraying. APM is prepared to negotiate the catch basin treatment if the City of Fenton desires to do their own treatment.

Our objective is to continue the comprehensive, state-of-the-art mosquito control program for the City of Fenton, as well as, continue to enhance upon what we do. Advanced Pest Management is dedicated to using the latest methods and materials in its integrated mosquito management programs. All of the methods and materials proposed are consistent with the American Mosquito Control Association (AMCA), the Michigan Mosquito Control Association (MMCA), and all of today's mosquito control industry standards. All materials used in mosquito management program are registered and approved for mosquito control by the Environmental Protection Agency (EPA), and the Michigan Department of Agriculture (MDA).

If you have any questions on the enclosed information, please feel free to contact me at 810-735-8731 (office) or 586-292-1070 (cell). We look forward to the opportunity of continuing to provide our services to the residents of the City of Fenton.

Sincerely,



Charles D. Mullins
General Manager
Advanced Pest Management

**PROPOSAL FOR:
2011 CITY OF FENTON
MOSQUITO CONTROL PROGRAM**

FEBRUARY 16, 2011

ADVANCED PEST MANAGEMENT
Advanced Outdoor Spraying Company
P.O. Box 125 Fenton, MI 48430
Contact: Chuck Mullins
(810) 735-8731

**PROPOSAL FOR:
2011 CITY OF FENTON
MOSQUITO CONTROL PROGRAM**

ADVANCED PEST MANAGEMENT
P.O. Box 125 Fenton, MI 48430
Contact: Chuck Mullins
(810) 735-8731

CONTENTS

	Page No.
Cover Letter.....	1
Contents.....	2
Introduction to Environmental Mosquito Management.....	3
EMM Surveillance & Monitoring.....	4
EMM Larval Mosquito Control.....	5
"Prescription Oriented" Larvicides & Control Agents.....	6-7
EMM Adult Mosquito Control.....	8-9
SERVICES SUMMARY	
I. General Services Description.....	10-11
II. Larval Control Services Description	12
III. Adult Control Services Description	13
Attachment "A" Contractual Service Cost Summary.....	14
Attachment "B" Contractual Service Agreement.....	15
References.....	16
Risk Benefit Information.....	17-18

Introduction to Environmental Mosquito Management

To control insect pests during the 1960's and 70's, pest control operators and farmers in both urban and agricultural environments leaned heavily toward the use of chemical insecticides. Pesticides have resulted in many astounding successes in controlling human insect-borne diseases, in the dramatic increase in food production worldwide, and in improving the quality of life for billions of people. However, this heavy reliance on chemicals has also spurred major concerns about the safety of these chemicals toward man and the natural environment. These sometimes real, and sometimes perceived environmental concerns have led to a major practical and philosophical shift toward the concept of Integrated Pest Management (IPM). There are several accepted definitions for IPM, here are two of the best:

Integrated Pest Management:

"A process consisting of the balanced use of cultural, biological, and chemical procedures that are environmentally compatible and economically feasible to reduce pest populations to a tolerable level"

"To control insect pests in a efficient, and economic manner while preventing damage to humans, wildlife and the natural environment"

Recent developments, as well as proven methods and techniques in mosquito control, include biological larvicides, ultra-low volume (ULV) application of adulticides, computer technologies, and field control strategies which have provided the necessary tools to allow the implementation of a true Integrated Pest Management Program in The City of Fenton.

By combining these tools with data that has been gathered in the City, Advanced Pest Management can continually refine an IPM approach, called Environmental Mosquito Management (EMM). The EMM process places an emphasis on survey and mapping, population monitoring, and intensive larval mosquito control using computer technology to target the use of biological controls. The adult mosquito control component will involve the careful and strategic application of rapidly biodegradable, ultra-low-volume materials when population thresholds are reached.

The objectives of the 2011 City of Fenton EMM Program are to reduce nuisance mosquito populations to a pre-defined acceptable level, and to reduce the potential for the transmission of mosquito-borne disease, thereby improving the comfort, health and overall quality of life for the residents of Fenton. Obviously, there can be no guarantees of eliminating the mosquito or mosquito borne diseases.

EMM Surveillance and Monitoring

Defining the distribution, density, and species makeup of a target mosquito population in relation to human populations is essential to the success of a program that is attempting to control nuisance and/or disease carrying mosquitoes. Several tools and techniques exist and are used within the City of Fenton Program.

New Jersey Light Trap Network. A major tool in any mosquito control program is a mosquito trapping device called a New Jersey Light Trap. This trap was developed in the mid-1930's and has been the standard tool for monitoring mosquito population levels, density, and species makeup for almost sixty years. Two traps are operated within the City as part of a local network of 12 traps.

Aedes vexans Brood Prediction. The *Aedes vexans* mosquito is the primary nuisance mosquito throughout the Midwest. It is commonly called the floodwater mosquito because the female lays her eggs on dry ground, in flood prone areas. When a heavy rainfall occurs, the eggs become immersed, and this triggers the eggs to hatch. Unhatched eggs can lie dormant for several years. A period of heavy rains can cause a major hatch of millions of eggs all at the same time, leading to a population explosion and severe human annoyance. Another problem with these mosquitoes is their ability to migrate 15 to 20 miles in search of a blood meal. Advanced Pest Management uses rainfall and temperature data to accurately predict outbreaks of these mosquitoes. APM can then utilize this prediction, confirmation from the Light Traps and citizen input, to precisely time adult mosquito control operations.

Mosquito-borne Disease Monitoring. In 1975 a massive epidemic of St. Louis Encephalitis occurred in the United States in which nearly 2,000 cases were diagnosed, and 142 deaths were reported. Michigan reported 93 cases with 3 deaths. During the summers of 1997 and 1998 one fatality was reported as a result of (EEE). During the summers of 1991 and 1993 large outbreaks of Eastern Equine Encephalitis (EEE) occurred in south central Michigan. Numerous horse cases have been confirmed as well as several deaths. The latest disease to hit Michigan is the West Nile Virus (WNV). 574 positive cases were documented in Michigan in 2002, of which 48 were fatal. The primary carrier of WNV is the *Culex* mosquito, however there have been positive pools of *Aedes vexans* as well. The potential for mosquito-borne encephalitis certainly exists in the state. Advanced Pest Management communicates regularly with MSU, Bay, Midland, Saginaw, and Tuscola, Counties, other state agencies and with the Centers for Disease Control for updates on the potential for mosquito-borne disease transmission. This is a service recommended if community leaders would like to know if local mosquito populations are infected with West Nile virus, or other encephalitis diseases. This service is designed to monitor disease in given area and an indicator if other mosquito control activities should be implemented or enhanced upon.

Weather Monitoring. Climatological data and daily weather conditions are critical factors in the monitoring and control of mosquitoes. As discussed earlier, rainfall and temperatures play a vital role in the hatch and development of *Aedes vexans* and other mosquitoes. Daily wind patterns, precipitation and temperatures have a great impact on operational activities. For these reasons APM keeps in close contact with the local National Weather Service Office for weather updates, predictions and climatological statistics.

EMM Larval Mosquito Control

The foundation and focus of the City of Fenton EMM Program is the environmentally sensitive control of mosquito larvae within the community's boundaries. Effective control of larvae will prevent their development into adult mosquitoes, and therefore, reduce the need for adult mosquito control activities. The key to environmentally oriented larval control is the organization and classification of active and potential larval development sites.

Initially APM performs a survey to systematically map all potential mosquito development sites within a community. For each mapped site, the acreage is determined, and a reference number and habitat type are assigned. The community's site information is then input into a database to establish one of two fundamental CMMS files. The second file contains a detailed breeding History for each site. The historical database includes information on which sites have actually produced larvae, the time of the season, the frequency of larval occurrence, and the species found in each site. Over the period of database development, the site history file is filled with all the information gathered during routine site inspection and larviciding services. After history development period, using an interaction between the site information file and the site history file, APM can produce a field inspection and control strategy for each site within the community. The sites are split into two categories; non-breeding and targeted. The non-breeding sites are considered a low-priority, and monthly inspections will maintain the database for these sites. The sites with a history of producing mosquitoes will be targeted for intensive field inspections and subsequent appropriate larval control measures.

Just as no one medicine is prescribed for all illnesses, no one larvicide is suitable for the control of all mosquito species in every type of habitat. The CMMS system allows APM to do "prescription larval control" for each individual site. This strategy is based on habitat type, and species history. Permanent water targeted sites are marked for stocking with *Gambusia affinis* (mosquitofish) for biological control. Intermittently wet/dry prolific breeding sites can be targeted for pre-hatch applications of Abate 5% pellets that offer a 30 day residual, and the balance of targeted sites that are listed as potentially requiring larviciding at some point during the season can be addressed with Bti granular. The community's CMMS is updated and fine-tuned continuously throughout the entire mosquito season.

APM's Computerized Mosquito Management System (CMMS) provides a cost-effective, site specific, "Prescription-Oriented" plan that prioritizes field operations and reduces costly inspections and unwarranted insecticide use. The CMMS system allows the mosquito control program to become much more environmentally sensitive, because the use of biological control is encouraged, and only minimum doses are required to maintain good control.

APM's "Prescription Oriented" Larvicides

Effective larval control can be achieved within the EMM framework by using only the most environmentally-sound and cost-effective materials currently available.

1. *Bacillus thuringiensis israeliensis* (Bti) is an organic biological insecticide derived from a naturally occurring soil bacteria. Bti is a species specific material that will only affect mosquito and black fly larvae. Activated by the specific pH in the gut of the larvae, the bacterially produced crystalline spore of Bti will, after being eaten by the larvae, destroy the digestive tract and kill the larvae, thus precluding development through the pupal stage to adulthood. The Bti product is formulated on a corn cob granular carrier and is applied at the label rate of 5 lbs. per acre.

2. *Bacillus sphaericus*, (Vectolex) is an organic biological insecticide derived from a naturally occurring soil bacteria. Vectolex is a species specific material that will only affect mosquito and black fly larvae. Activated by the specific pH in the gut of the larvae, the bacterially produced crystalline spore of Bti will, after being eaten by the larvae, destroy the digestive tract and kill the larvae, thus precluding development through the pupal stage to adulthood. Vectolex is very similar to Bti, however it is able to live longer than Bti and is typically used in more polluted breeding sites with higher organic content.

3. *Abate 5% Pellets & Abate 1% Granular*, (temephos) are newer formulations of a low-toxicity organophosphate larvicide that has been designed to provide long-term, 30 day larvicidal action (5% pellets only) in prolific breeding sites, sites with a high organic pollution content and sites with large flood prone margins subject to major *Aedes vexans* larval development.

4. *Altosid IGR Briquets and pellets* (methoprene) are products with the active ingredient methoprene which is an IGR (insect growth regulator). Altosid is an analog of the mosquito's juvenile growth hormone. Altosid interferes with normal metamorphosis, thus preventing the immature mosquito from emerging as an adult. Due to their relatively high cost the briquets are used primarily in open street catch basins. Open street catchbasins are considered to be the primary source of *Culex* mosquitoes in residential areas. *Culex* mosquitoes are the vectors of West Nile virus, St. Louis and other Encephalitis type diseases. In the EMM program all open catchbasins in the community will be treated using Altosid XR 150 day Briquets one time during the mosquito season, mid May to mid June depending on beginning of breeding cycle, to suppress *Culex* mosquitoes during the key encephalitis virus amplification period.

5. *Source Reduction Recommendations*. As a part of our routine visual site inspections, APM inspectors will often note such areas as clogged ditches and streams, neglected swimming pools, and illegal tire and trash dump sites which are potential public health hazards. APM will outline these problems in our monthly reports, and is always available to assist local code enforcement officials in the location and identification of these sites.

EMM Adult Mosquito Control

The adult mosquito management portion of the EMM Program consists of two phases: Harborage Site Adulticiding and General Residential Adulticiding. The goal here is to concentrate control efforts in adult mosquito harborage areas with high humidity gradients such as stream or river valleys, margins of thick woodlots, and densely vegetated parks and recreational areas, away from the human population. The dispersal of the adult mosquito population into residential areas can be greatly reduced by applying adulticide materials into the harboring areas where adult mosquitoes congregate. As a result, general residential adulticiding can be limited to periods of excessively high annoyance, or during a public health emergency.

1. **Harborage Site Adulticiding.** Harborage areas can be defined as cool, humid spots where adult mosquitoes congregate during sunny, dry periods during daylight hours, before undertaking localized feeding flights at dusk. Species of mosquitoes with short flight ranges, such as *Ochleratatus stimulans*, *Culex pipiens* and others, may be permanent residents of these harborage areas, while other species with longer flight ranges, such as *Aedes vexans*, often use these harborage areas as daytime stopovers during migration.

The treatment of harborage areas can be accomplished in several ways using either residual or non-residual adulticides. **Residual Treatment.** The treatment of harborage areas with residual materials has previously been called perimeter barrier application. The treatment of dense harborage vegetation with residual materials not only gives immediate control of existing adult mosquitoes but will prevent the rapid reinfestation of the harborage and adjacent residential areas. This type of application is usually accomplished by power backpack or truck-mounted mistblower sprayers. The material of choice here is a emulsifiable pyrethroid insecticide such as Tempo. **Non-residual Treatment.** Harborage site adulticiding can also be accomplished using truck-mounted ULV equipment to apply non-residual aerosol materials such as Biomist or Kontrol. However, residual treatments offer the considerable advantage of reduced reinfestation.

2. **General Residential Adulticiding.** During the course of a normal mosquito season, numerous large broods of *Aedes vexans* floodwater mosquitoes will periodically migrate into a community and override the local larviciding and harborage control efforts. In these cases General Residential ULV Adulticiding is the only effective means to reduce the local mosquito populations below an acceptable level. The decision to spray will be based only on the adherence to 20 females per trap per night, and/or the recognition of a severe nuisance problem generated by citizen complaints. To obtain the optimum effectiveness, the scheduling of the ULV application will depend on appropriate weather conditions, light trap counts, and resident input. The material of choice will be either, Anvil, Biomist, Duet, Kontrol, Mosquitomist or similar insecticides. Mosquitomist is an organophosphate insecticide which has been used in the Fenton program effectively for over twenty years. Anvil, Biomist and others listed are synthetic pyrethroid insecticides offering, low odor, rapid biodegradation, and excellent mosquito mortality. Biomist has been used in Fenton for over fifteen years. These materials will be applied using ultra-low-volume (ULV) techniques and are registered for mosquito control with the U.S. Environmental Protection Agency (EPA), and the Michigan Dept. of Agriculture.

Pre-Spray Operational Procedures. Prior to starting a General Residential Adulticide Application, APM will contact those community residents that have health, environmental or philosophical concerns about the spraying and have requested that they be notified. A minimum of three attempts to reach each of these residents will be made between the hours of 12 noon and 9 P.M. prior to the spray application. Also, upon request, addresses will be staked, and marked on APM's operational maps, and the ULV insecticide will be "shutoff" in front of, and upwind from, these properties.

ULV Equipment. Advanced Pest Management uses the latest, state-of-the-art electronic flow-controlled Clarke ULV sprayers. The efficiency of ULV spraying depends upon the proper droplet size output. All APM ULV sprayers are routinely calibrated and tested for proper operation. A recent management tool implemented by APM was the installation of GPS systems in all of our ULV trucks. Through use of the Clarke Data Master II software, we are able to verify by date and time the location of our trucks, the route, the actual mileage of roads fogged, the speed of the vehicle, any shutoff zones in the area, whether the insecticide is "On or Off" and record catch-basin treatments.

Quality Control. All adult mosquito control operations will be monitored by various methods including; New Jersey light, Dry ice baited CDC, trapping results, and detailed monitoring of insecticide usage through equipment calibration and inventory depletion.

General Services Description

All General Services are quoted for the 2011 seasons at no charge, and are included as part of the total service package.

1. GENERAL LIABILITY/AUTO/WORKER COMPENSATION INSURANCE COVERAGE

Comprehensive \$1,000,000 (\$1 Million) per occurrence General Liability, Claims-made policy. Including chemical and pollution coverage. The City of Fenton will be named as additionally insured. (See attached certificate). APM also includes \$1 Million Auto Liability Coverage and standard Workers Compensation coverage on all employees.

2. MOSQUITOLINE CUSTOMER RESPONSE SYSTEM

Twenty-four hour customer access telephone number for reception of mosquito annoyance complaints and information requests. This local access number will be advertised frequently throughout the summer in the local newspapers. **810 735-8731.**

3. IMMEDIATE RESPONSE SYSTEM

Guaranteed 24 hour response/resolution time to all mosquito annoyance complaint calls, weather permitting. Includes monthly reporting of all pertinent call information and the steps taken to resolve each problem.

4. C.M.M.S. (COMPUTER-ASSISTED MOSQUITO MANAGEMENT SYSTEM)

Use of APM's comprehensive computer data-base and reporting system to target specific larval mosquito control methods to historically active development sites. This method provides effective control and reduces the high cost of routine "hit & miss" site inspection.

5. COMPLETE WEATHER MONITORING SERVICE

Daily monitoring and recording of local weather conditions in our computer data-base for use in mosquito annoyance prediction, effective operational scheduling and efficient reporting.

6. MOSQUITO ANNOYANCE PREDICTION SERVICE

A computerized population and annoyance prediction system designed to give early warning of severe annoyance from the floodwater mosquito, *Aedes vexans*. This system is used to effectively schedule larviciding and adulticiding operations as well as to give the public advanced notice of severe situations.

7. REPORTS

Periodic updates on mosquito populations, work in progress, calls received via *MosquitoLine* System, *ImmediateResponse* analysis, budget analysis, etc.

8. PUBLIC RELATIONS

A. Maintenance of a complete and continuously updated SHUT-OFF File and map system which identifies all properties that have requested that the adulticide spray be shut-off in front of, and up-wind from their property. All Shut-off properties will be marked prior to any spray application.

B. A continuously updated NOTIFICATION File which lists those residents that desire advanced notification of adult control spray applications.

C. Complete access to all APM technical literature including Material Safety Data Sheets for all insecticides used in the program.

D. News releases will issued to the local media when deemed appropriate and necessary, in cooperation with the City Manager.

Larval Control Services

The following larval mosquito control service items are quoted on an individual, per application basis, with an accompanying full season cost estimate. Seasonal costs may vary due to environmental conditions such as rainfall, temperature and length of the mosquito season. **The seasonal cost will not be exceeded without the expressed approval of the City Manager.**

10. C. M. M. S. SITE INSPECTION SERVICE

- A. *Pre-season* Inspection of 55 computer targeted larval mosquito production sites for detection and control of Spring *Aedes* mosquito species at a cost of \$ 8.68/site \$ 477.40
- B. *Complete* Site Inspection covering all 55 potential mosquito production sites. Six rounds per season, at a cost of \$ 8.68/site\$ 2,864.40

11. LARVICIDE APPLICATION

- A. Pre-season power backpack application of Vectobac G Bti granular larvicide at labeled dosage rates, to an estimated 50.0 acres found breeding during site inspection, at a cost of \$ 32.29/acre \$ 1,614.50
- B. Power backpack application of Vectobac G Bti granular larvicide at a dosage rate of 5.0 lbs. per acre, to an estimated 125.0 acres throughout the season at a cost of \$ 32.29/acre\$ 4,036.25

12. CATCHBASIN TREATMENT

- Treatment of approximately 2050 open street catch basins with Altosid XR Briquets or Vectolex CG pellets, for control of larval mosquitoes at a cost of \$ 13,776.00

13. LARVAL SERVICE QUALITY CONTROL

- Twenty-four hour elapse time spot check of the previous day's inspected and treated sites. \$ No Charge

Sub-Total Larval Control Services for 2011 Season \$ 22,768.55

Adult Mosquito Control Services Description and Costs

The following adult mosquito control service items are quoted on an individual per application basis, with an accompanying full season cost estimate. Seasonal costs may vary due to environmental conditions such as rainfall, temperatures and length of the mosquito season. The seasonal cost will not be exceeded without the expressed approval of the City Manager.

14. LIGHT TRAP MONITORING SERVICE

Seasonal New Jersey light trap service for adult mosquito population monitoring. Two traps will be operated 2 nights per week, with catches retrieved, sorted to sex and species, with the resulting data recorded for computerized analysis
At a seasonal Cost of \$1,125/Each.....\$ 2,250.00

15. Mosquito-borne Disease Surveillance Monitoring

Setting of dry ice baited CDC traps to specifically target the predominant species that are historical transmitters of WNV and EEE. Samples collected, sorted, Identified and submitted MSU for disease testing.
One trap per week for eight weeks.
At a cost of \$215.25/Each.....\$ 1,722.00

15. GENERAL RESIDENTIAL ADULTICIDE APPLICATION (MOSQUITOMIST)

Ten ULV applications via truck-mounted spray unit along 65.0 miles of streets with Kontrol 4+4, Biomist 4+4 or similar insecticide at labeled dosage rates when temperatures are above 55°F and wind speeds are 10mph or less.
At a cost of \$42.13/mile..... \$ 27,384.50

16. ADULT MOSQUITO CONTROL SERVICE QUALITY CONTROL

Monitoring of all adult mosquito control operations by various methods including; truck mounted recording devices, New Jersey light trapping, and detailed monitoring of insecticide usage through equipment calibration and inventory depletion. No Charge

Sub-Total Adult Control Services For 2011 Season \$ 31,356.50

**ADVANCED PEST MANAGEMENT
ATTACHMENT "A" February 16, 2011
2011 CONTRACTUAL SERVICE COST SUMMARY**

City of Fenton 2011 Environmental Mosquito Management Program

The following service item prices are quoted on an individual per application basis, with an accompanying full season cost estimate for the 2011 season. The complete seasonal cost will not be exceeded without the written approval of the City Manager. This program is offered by APM as a comprehensive integrated larval and adult mosquito control program, specifically designed for the City of Fenton as a strategy against local, severe mosquito annoyance. These proposed prices are offered with the inclusion of a price adjustment clause. Said increases are subject to negotiation between The City of Fenton and APM in the event the industry experiences an inordinate and unexpected increase in material, labor or insurance costs. The City of Fenton understands that APM cannot be held responsible in the event humans or animals contract mosquito borne diseases. This is not a disease prevention program, program simply reduces risks. Please see the previous cost and services description pages for more detailed information.

I. General Services.....	Included at No Charge	
1. \$1 Million General Liability/Auto/Workers Compensation Insurance Coverage		
2. MosquitoLine Customer Response System		
3. ImmediateResponse System		
4. C.M.M.S. (Computer-assisted Mosquito Mgmt. System)		
5. Complete Weather Monitoring System		
6. Mosquito Annoyance Prediction Service		
7. Monthly Reports		
8. Public Relations		
II. Larval Mosquito Control Services		
10. C.M.M.S. Site Inspection Service	\$	3,341.80
11. Larvicide Application	\$	5,650.75
12. Catchbasin Treatment	\$	13,776.00
13. Larval Service Quality Control		Included
III. Adult Mosquito Control Services		
14. Light Trap Monitoring Service	\$	2,250.00
15. Disease Surveillance Monitoring.....	\$	1,722.00
16. General Residential Adulticide Application.....	\$	27,384.50
17. Adult Service Quality Control		Included
 2011 Mosquito Control Program Total	\$	54,125.05

**ADVANCED PEST MANAGEMENT
Advanced Outdoor Spraying Company
ATTACHMENT "B" February 16, 2011
2011 CONTRACTUAL SERVICE COST AGREEMENT**

For The City of Fenton for the 2011 season only;

Signing and returning the attached copy of this contractual agreement will authorize ADVANCED PEST MANAGEMENT to perform the service items contained in Attachment "A" February 16, 2011 within the stipulated limits for the 2011 season. These proposed prices are offered with the inclusion of a price adjustment clause. Said increases are subject to negotiation between The City of Fenton and APM in the event the industry experiences an inordinate and unexpected increase in material, labor or insurance costs. The City of Fenton understands that APM cannot be held responsible in the event humans or animals contract mosquito borne diseases. This is not a disease prevention program, program simply reduces risks.

For acceptance of Attachment "A" February 16, 2011 for the 2011 season only, sign here:

Name _____ Title _____ Date _____

For Advanced Pest Management

Name  Title General Manager Date February 16, 2011
Charles D. Mullins

=====
Invoices should be sent to:

Name _____ Title _____

Address _____ Phone _____

City Zip _____

Retain This Copy For Your Files

ADVANCED PEST MANAGEMENT
Advanced Outdoor Spraying Company
ATTACHMENT "B" February 16, 2011
2011 CONTRACTUAL SERVICE COST AGREEMENT

For The City of Fenton for the 2011 season only;

Signing and returning the attached copy of this contractual agreement will authorize ADVANCED PEST MANAGEMENT to perform the service items contained in Attachment "A" February 16, 2011 within the stipulated limits for the 2011 season. These proposed prices are offered with the inclusion of a price adjustment clause. Said increases are subject to negotiation between The City of Fenton and APM in the event the industry experiences an inordinate and unexpected increase in material, labor or insurance costs. The City of Fenton understands that APM cannot be held responsible in the event humans or animals contract mosquito borne diseases. This is not a disease prevention program, program simply reduces risks.

For acceptance of Attachment "A" February 16, 2011 for the 2011 season only, sign here:

Name _____ Title _____ Date _____

For Advanced Pest Management

Name *Charles D. Mullins* Title General Manager Date February 16, 2011
Charles D. Mullins

=====
Invoices should be sent to:

Name _____ Title _____

Address _____ Phone _____

City Zip _____

Return This Copy To APM

References

1. Fenton Township

Mrs. Bonnie Mathis, Township Supervisor
12060 Mantauwauka Drive
Fenton, MI 48430
(810) 629-1537

2. Village of Fowlerville

Mr. Joe Merucci, Village Manager
137 N. Grand Avenue
P.O. Box 677
Fowlerville, MI 48836
(517) 223-3771

3. City of Linden

Mr. Christopher Wren, City Manager
132 E. Broad Street
Linden, MI 48451
(810) 735-7980

Others available upon request

Risk Benefit Information

Introduction

Regulation 637, Pesticide Use, was promulgated under the authority of the Pesticide Control Act (Act 171, Public Acts of 1976, as amended). It became effective on October 29, 1993 and will be enforced by the Michigan Department of Agriculture (MDA), Pesticide and Plant Pest Management Division. Regulation 637 will impact all pesticide applicators, but most notably certified commercial applicators and commercial applicator firms. The following is a required addendum to this APM mosquito control proposal/contract in accordance with MDA Regulation 637.

Definition: Pesticide - a substance or agent used to kill pests such as insects, weeds, etc.

Pesticides are used to control undesirable, nuisance, and sometimes dangerous pests. Natural predators, disease and environmental conditions help to control pest populations. When natural controls are insufficient, pesticides are used to reduce the populations to acceptable levels.

One or more of the following pesticides are applied by APM per this proposal/contract to control mosquitoes representing the subfamilies Anophelinae and Culicinae.

Larvicides

Vectobac (Bacillus thuringiensis var. israelensis or Bti.) - A microbial insecticide which utilizes protein crystals cultured from bacterial spores. When ingested by mosquito larvae, the protein crystals cause lethal biochemical changes. Bti. granules are applied via power backpack to actively breeding sites at a rate of 2.5 - 5.0 pounds per acre. **CAUTION KEEP OUT OF REACH OF CHILDREN**

Vectolex CG, (Bacillus sphaericus Serotype(H-5a5b),strain 2362.)- A microbial insecticide which utilizes protein crystals cultured from bacterial spores. When ingested by mosquito larvae, the protein crystals cause lethal biochemical changes. Vectolex granules are applied via power backpack to actively breeding sites at a rate of 2.5 - 5.0 pounds per acre. **CAUTION KEEP OUT OF REACH OF CHILDREN**

Altosid (Methoprene) - A biochemical Insect Growth Regulator which causes a lethal disruption in the mosquito's metamorphic development. The application rate is one 150day residual briquet per catch basin. **CAUTION KEEP OUT OF REACH OF CHILDREN**

Adulticides

Anvil 2+2 ULV (Sumithrin 2% + Piperonyl Butoxide 2%) – A synthetic pyrethroid insecticide which inhibits neural transmissions in targeted adult mosquitoes. Anvil is applied via truck-mounted Ultra Low Volume equipment along rural and residential roads. The application rate is 1-3 fluid ounce per acre. **CAUTION KEEP OUT OF REACH OF CHILDREN.**

Biomist 3+15 ULV (Permethrin 3% + Piperonyl Butoxide 15%) - A synthetic pyrethroid insecticide which inhibits neural transmissions in targeted adult mosquitoes. Biomist is applied via truck-mounted Ultra Low Volume equipment along rural and residential roads. The application rate is 1-3 fluid ounce per acre. **CAUTION KEEP OUT OF REACH OF CHILDREN**

Biomist 4+4 ULV (Permethrin 4% + Piperonyl Butoxide 4%) - A synthetic pyrethroid insecticide which inhibits neural transmissions in targeted adult mosquitoes. Biomist is applied via truck-mounted Ultra Low Volume equipment along rural and residential roads. The application rate is 1-3 fluid ounce per acre. **CAUTION KEEP OUT OF REACH OF CHILDREN**