

Lee County Mosquito Control District, why so big and expensive?

Lee County Mosquito Control District (LCMCD) is the largest single county mosquito control program in Florida and probably the United States because Lee County Florida has the largest mosquito control problem in Florida. Sanibel holds the record for the most mosquitoes collected in a New Jersey Light Trap in one evening which was over 365,000 mosquitoes. Mosquitoes have been a significant factor in the development history of Lee County and getting them under control has allowed the County to grow and prosper. Lee County has approximately 56,000 acres of salt marsh habitat, which is significantly more than any other county in Florida except Monroe which includes the Everglades. Salt marsh mosquito species can hatch in tremendous numbers and have a significant flight range which allows them to move from the coastal marshes inland and over the entire county at times. Additionally, there are many acres of pastures, ditches, cypress swamps and wooded areas of Lee County that can become flooded in the rainy season and also from water flowing south (sheet flow) from northern counties. These areas are prime breeding grounds for freshwater mosquito species. The amount of salt marsh and other habitats combined with tidal activity, rain and a flat topography make Lee County the biggest mosquito breeding ground in Florida (except for the Everglades) and has resulted in the need for a large mosquito control program to meet the expectations of the population of Lee County. The only way to get adequate control in Lee County is with the use of aircraft, and operating and maintaining an aviation fleet is expensive. Additionally, pesticides are also very costly and it may surprise many to know that a single aircraft mission in one evening will cost the District in excess of \$20,000. On some evenings the District may operate several aircraft as well as spray trucks and can expend over \$60,000 in one night of spraying. When comparing the total acres treated by air of all Florida mosquito control districts each year, Lee County Mosquito Control does over one third of the total aerial larviciding acres state-wide and one sixth of the state-wide aerial adulticiding acres.

There are two approaches to mosquito control which are used by LCMCD. Mosquitoes can be controlled in the immature stages in the water before they emerge (larviciding), or as adults after they leave the water (adulticiding). The District's first priority is to try and control the mosquitoes in the immature stages while still in the water which will prevent emergence as adult mosquitoes. Many of the coastal habitats are inaccessible by ground vehicle and require a helicopter to gain access. Salt marsh mosquitoes can develop from egg to adult in as few as 4 or 5 days so there is a very narrow window of opportunity to find them and treat them before emergence following a rain or tide event. The number of aircraft used by the District is the minimum needed to find and treat all the breeding areas before emergence. It is a very difficult task to accomplish but can be very effective in reducing the need for adult mosquito spraying. There are many acres of State managed lands in Lee County which are restricted to larval mosquito control only and no aerial adulticiding is allowed. The cost of doing aerial larviciding is significant when compared to adulticiding and can be as much as seven times more expensive per acre for pesticides alone.

Lee County Mosquito Control District is a recognized leader in aerial mosquito control technology because the District does more flying and aerial spraying than most other districts. The District hosts an annual training meeting for aerial spray sponsored by the Florida Mosquito Control Association which is attended by most Florida mosquito control districts with aerial spray programs as well as other districts

from around the U.S. and overseas as well. There is also usually participation by the U.S. Air Force and Navy. On several occasions the State of Florida has called upon Lee County Mosquito Control District to assist others in times of crises with aerial assets that are not available anywhere else. The District has provided State directed assistance following numerous hurricane events and other emergency situations including med fly control in central Florida and State sponsored West Nile virus control in the Florida panhandle following the introduction of the virus in 2001. Lee County Mosquito Control District served as the base of operation for the state wide mosquito control response following the numerous hurricanes that crossed the state in 2004 and included teams from the Florida Department of Health, Department of Agriculture and Consumer Services, and the Federal Centers for Disease Control. The District has also provided assistance to other states including Virginia and North Carolina following flooding events. Having this ability to assist other local, state, and federal governments is an advantage in flexibility of a special district. The cost for this assistance was not paid for by Lee County taxpayers. It was all reimbursed by state or federal agencies requesting the assistance and in general the District came out a little ahead on funding after all payments were received.

Lee County Mosquito Control District takes the protection of public health against mosquito borne viruses serious and is the only District in the state currently doing local testing of sentinel chickens to detect virus circulating in the local environment. All other Districts that are conducting virus surveillance are sending their samples to the state lab and must wait up to a week for results. LCMCD can and does get same day results and respond with rapid adult mosquito control in an area when positive virus is found in the sentinel flocks.

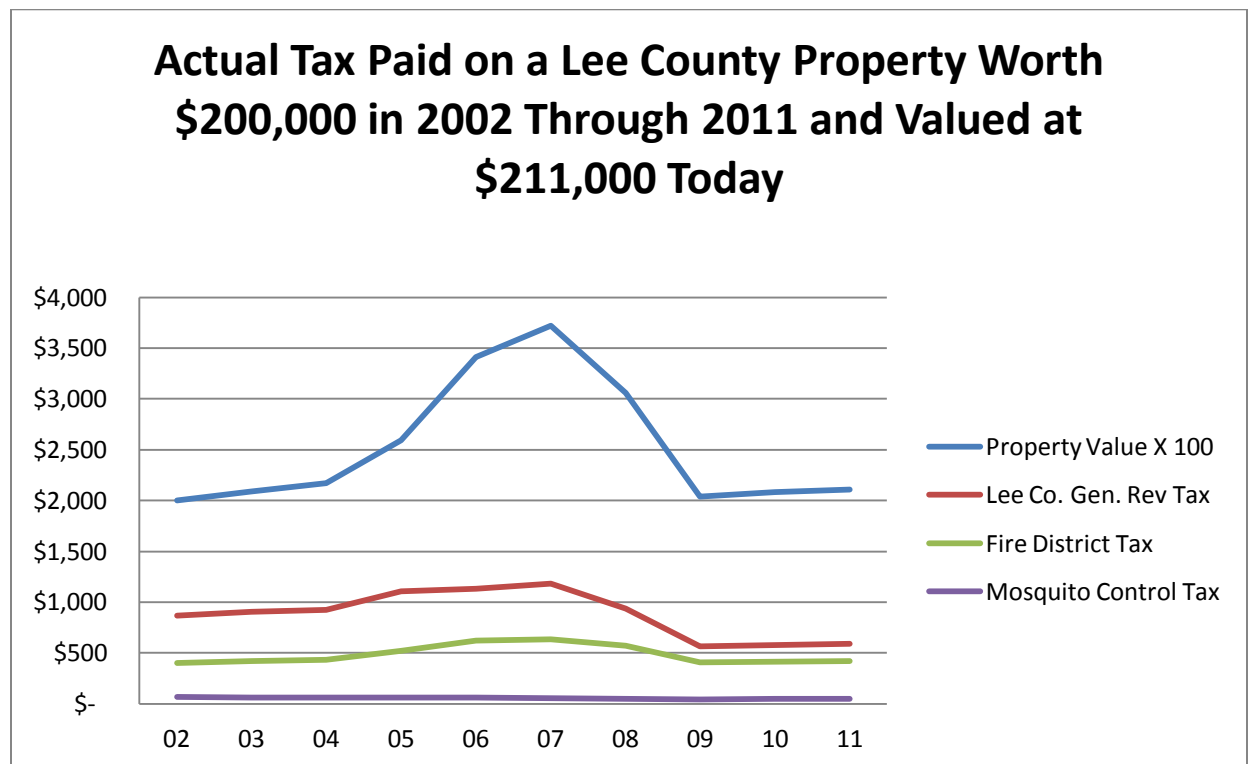
Lee County Mosquito Control and Lee County Hyacinth Control Districts have just completed a 33,000 square foot facility which replaces current facilities consisting of numerous trailers and aging out of code buildings which are over 40 years old. The new facility has been planned over the last ten years and has been completed and paid for without borrowing any money at a construction cost of less than \$150 per square foot. This is very reasonable cost for commercial construction. These new facilities include new laboratories for mosquito borne virus testing and water quality testing. There is still a need to provide adequate protection for aircraft with a hangar which is planned for in the future and is reflected in the reserves for capital outlay.

The Mosquito Control District has endeavored to increase operational efficiency and reduce maintenance costs by reducing the number of older aircraft and upgrading the fleet to more modern equipment. In the last five years the operational fleet has been reduced from 24 aircraft down to 15. The old radial engine DC-3s are being replaced with newer turbine conversion DC-3s with two currently in the inventory. The modern turbine engines provide a much better level of reliability and reduced maintenance cost over the radial engines. All radial engine aircraft are planned to be phased out by next year.

Mosquito control requires a unique blend of highly skilled and trained employees. It is a highly regulated environment under the FAA, EPA, FDEP and FDACS. The staff consists of scientists, pilots, aviation mechanics, GIS and IT personnel, inspectors, truck drivers, facilities and vehicle maintenance personnel, and other administrative employees. All employees are certified in Public Health Pest

Control and are capable of applying pesticides for mosquito control if needed. Aerial missions are flown with satellite navigation systems using GIS and GPS to map and record all applications. All jobs have position descriptions, are classified into the Districts' pay system and job evaluations have been done for pay comparisons with like jobs in government and commercial industries. A significant number of the staff has over 20 years of experience in their jobs.

The cost of mosquito control to the taxpayer over the last ten years has actually declined slightly even with the significant fluctuations of land prices and the rise and fall of other tax assessments. The Board has endeavored to take roll back most years and keep cost to the taxpayer fairly consistent. A Lee County homeowner with property valued at \$200,000 in 2002 paid about \$66 for mosquito control. A Lee County homeowner today with a property valued at \$200,000 will pay \$48 for mosquito control next year.



All special districts are audited annually and evaluated for financial condition. Certain levels of reserves are necessary for the operation of a special district. At a minimum, two months of operating expense should be in reserve due to the time lag between tax assessments and collections and to protect against the need to reduce service levels or raise taxes and fees due to temporary revenue shortfalls. Without reserves, a special district could be required to temporarily borrow money to fill the gap. The Florida Government Finance Officers Association recommends a reserve "ranging from 7 to 20 per cent" of the operating budget as a prudent cushion. Additionally, Lee County Mosquito Control District has elected to be self-insured for workers compensation and other liabilities and reserves are kept for this reason. Also, planning for future capital needs is an ongoing process and money is set aside in advance for these

anticipated future expenses. It is basically saving up for future expenses instead of borrowing the money later.

A difficulty faced by mosquito control districts is the variability in mosquito numbers from year to year as demonstrated this current year in which twice the normal acreage has been treated by many districts. This has resulted in significant unplanned expense that must be covered by budget contingency funds and reserves when necessary. Hurricanes are also a fact of life in Florida and can create unplanned expense that needs consideration when planning for the future.