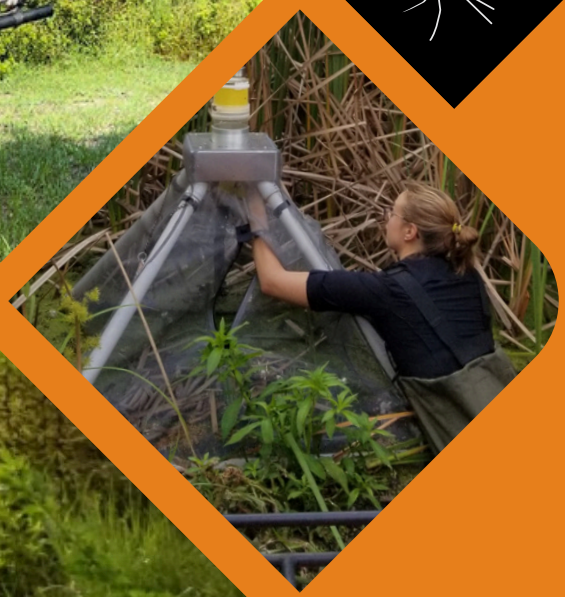
Pasco County Mosquito Control District

Strategic Plan



2024-2025

PASCO COUNTY MOSQUITO CONTROL DISTRICT

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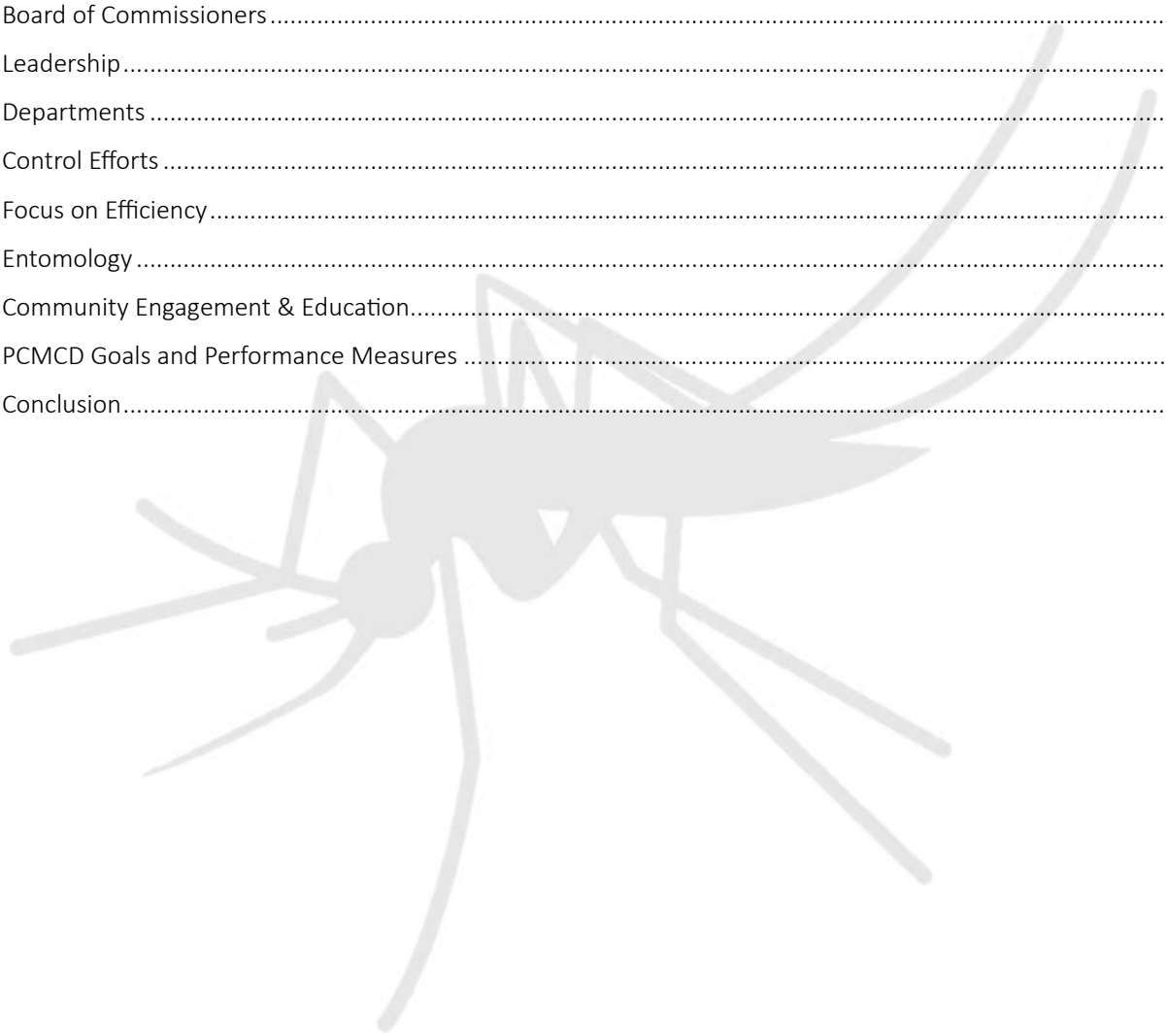


Introduction

Welcome to the strategic plan for the Pasco County Mosquito Control District (PCMCD) for the 2024-2025 Fiscal Year. As stewards of public health and environmental responsibility, we embark on this journey with a clear vision: to protect our community from the threats posed by mosquitoes while fostering a sustainable and harmonious coexistence with nature. This strategic plan serves as our roadmap, guiding us towards innovative solutions, enhanced collaboration, and continuous improvement in our efforts to safeguard the well-being of Pasco County residents and visitors.

In the face of evolving environmental challenges and public health concerns, the PCMCD stands as a beacon of proactive defense. With a rich legacy of service and a commitment to excellence, we recognize the critical importance of our mission in protecting public health in our community.

This strategic plan represents our collective dedication to adaptability, innovation, and collaboration. By harnessing the power of science, technology, and community engagement, we aim to not only mitigate the immediate risks posed by mosquitoes but also to address the root causes of vector-borne diseases and ecological imbalances.

As we navigate the complexities of mosquito control in the 21st century, we remain steadfast in our values of integrity, accountability, and public service and education. Together, let us forge a path forward that prioritizes the well-being of every individual and the sustainability of our shared environment.

The PCMCD has a storied history of innovation and excellence in safeguarding the health and well-being of its residents. Since its inception, PCMCD has been at the forefront of mosquito control, pioneering techniques and strategies that have set benchmarks in the industry. Our commitment to rapid, high-quality customer service has earned us a stellar reputation, ensuring the community's trust and reliance on our expertise to combat mosquito-borne diseases effectively.

As Pasco County experiences unprecedented human population growth, the challenges of mosquito control become increasingly complex. The burgeoning population not only amplifies the demand for our services but also heightens the urgency to expand and enhance our operations to combat emerging disease threats in a more urbanized environment. This strategic plan outlines our roadmap for scaling our capabilities, adopting cutting-edge technologies, and fostering community engagement. Our goal is to protect public health, maintain our leadership in mosquito control, and continue our legacy of innovation and exceptional service and education in this dynamic and evolving landscape.

The execution of this strategic plan will require smart and thoughtful planning, clear and concise communication, and capable staff. This plan should be flexible to account for changes in the economic landscape and practicality of completion.

Adriane N. Rogers

Mission Statement

The Pasco County Mosquito Control District (PCMCD) is committed to protecting the health and well-being of the citizens of Pasco County through the prevention and control of mosquitoes and mosquito-borne diseases. Our goal is to control both pestiferous and disease carrying mosquito populations to a tolerable level in the safest, most economical manner, while using a variety of methods in such a way as to minimize potential effects on people, wildlife, and the environment.

Vision Statement

At the Pasco County Mosquito Control District, our vision is to uphold a community where integrity, accountability, and unwavering commitment to public service and quality education form the cornerstone of our operations. We are dedicated to upholding the highest standards of ethics and transparency in all our endeavors. Guided by a profound sense of environmental stewardship, we work to protect and preserve our natural ecosystems for future generations. Together, we forge ahead, embodying these principles in every action we take to safeguard public health and enhance the quality of life in Pasco County.

Core Values

Integrity

Integrity, as a core value, represents our commitment to act with honesty, transparency, and strong moral principles in every situation. Integrity fosters trust, accountability, and reliability, ensuring that decisions and actions are guided by ethics and respect for others. In our organization, integrity is foundational for building credibility, maintaining positive relationships, and ensuring long-term success.

Accountability

Accountability, as a core value, represents taking ownership and responsibility for our actions, decisions, and their outcomes. It involves being transparent about successes and failures, admitting mistakes, and making a genuine effort to correct them. Accountability fosters a culture of trust, reliability, and commitment, where individuals and teams are answerable for their roles and obligations.

Public Service

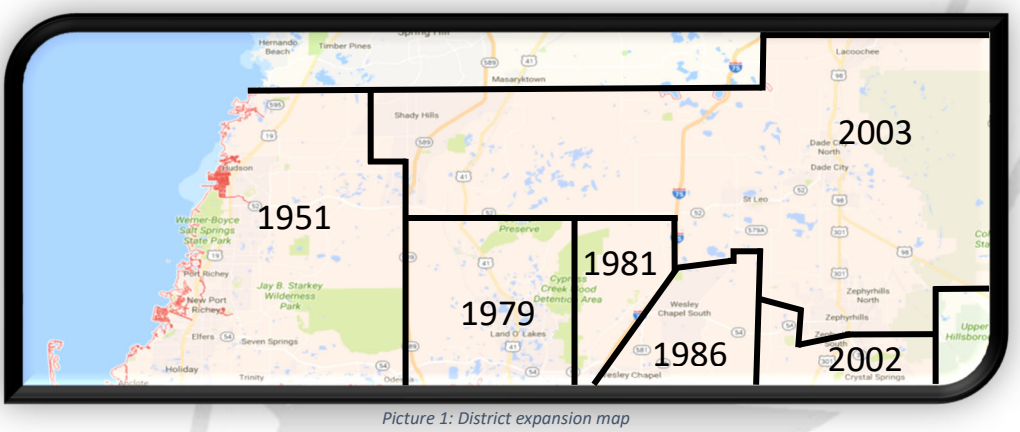
Public Service, as a core value, emphasizes our commitment to serving the community and contributing to the well-being of others. It involves placing the needs of the public above personal interests, ensuring that actions and decisions are made with the greater good in mind. Public Service fosters a sense of duty, compassion, and responsibility, encouraging individuals and organizations to work toward positive, lasting impacts on society.

Education

Education, as a core value, represents our commitment to continuous learning, growth, and the sharing of knowledge. It emphasizes the importance of fostering curiosity, critical thinking, and informed decision-making. Education promotes lifelong learning, empowerment through knowledge, and the belief that an informed society is key to progress and innovation.

History

The Pasco County Mosquito Control District (PCMCD) was created by the Pasco County Board of Commissioners as the result of a referendum vote in the summer of 1951 and established as the West Pasco County Mosquito Control District. The District expanded five times since its establishment. On each occasion in 1979, 1981, 1986, 2002, and 2003, the expansion process was initiated by petition at the grass roots level by the residents within a voting precinct that was adjacent to the District. Petitions were first presented to the 3-member Mosquito Control Board for approval and then to the Pasco County Board of County Commissioners for authorization via public meetings.



Picture 1: District expansion map

Originally, District personnel included three Commissioners plus one individual who drove a truck which was used to spray for adult mosquitoes. Within a few years, the District soon began applying pesticides to mosquito larvae and the Florida State Board of Health was providing the operation engineering and entomological support so that staff could ditch many of Pasco's coastal salt marshes and several nearby freshwater sites. Improvements were made to drain standing water, thus preventing mosquito production. Ditching and subsequent ditch cleaning was one of the District's major control efforts up through about 1990.

During the past 30 years, the District has continued to develop larvicide and adulticide capabilities, and has focused on new technologies that use GPS guidance, improved formulations, and customized software to assist in efforts to achieve the mission. There is also a focus on used tire removal and aquatic weed control, as they are both associated with producing mosquitoes.

The PCMCD employs over 50 cross-trained employees with an additional 10-15 part-time, seasonal staff. District employees are very busy during the summer months, conducting inspections, collecting, and identifying mosquitoes from over 100 surveillance traps maintained throughout the county, and controlling both larval and adult mosquitoes when found in sufficient numbers. During the drier, winter months there is a strong focus on training, continued education, equipment maintenance and repair, and site detection and access.

The PCMCD is currently one of the recognized leaders in the mosquito control industry, and often called upon for advice and assistance by other mosquito control programs.

Board of Commissioners

PCMCD is an Independent Taxing District governed by a board of three elected Commissioners. These positions are non-partisan, without political affiliation, and the Commissioners are elected "at large," meaning they are not representative of specific regions within Pasco County. Each Commissioner serves a four-year term, with two seats elected simultaneously and the third seat elected two years later. In the event of a board vacancy, the Commissioner of Agriculture from the Florida Department of Agriculture and Consumer Services (FDACS) will appoint a replacement to serve the remainder of the term.

Michael Cox
2021-Current

Randy Evans
2020-Current

Matthew Abbott
2007-Current

Leadership

Adriane N. Rogers - Executive Director

Agne Prasauskas – Research and Surveillance Director

Jose Freundt – Finance Director

Karen Mojica – Public Education Specialist

Lindsay O'Reilly – Administrative Manager

Maria Johnson – Community Engagement Director

Michele Donagrandi – Human Resources Director

Wayne Daniels – Aerial Operations Director

Nick McFaul – Operations Director

Brett Hicks – Aquatic Herbicide Supervisor

CJ McCutcheon – Fleet Supervisor

Kirk Shepard – ULV Supervisor

Stelios Kalimnios – Larvicide Supervisor

Vinny Dourado – Facilities Maintenance Supervisor

Walter Michalski – Special Projects & Field Supervisor

Departments

Collaboration among all departments is crucial for achieving effective and comprehensive mosquito management. Each department—from operations and entomology to fleet maintenance and public education—contributes specialized expertise that enhances the district's overall efforts. By working together, these departments create a coordinated and efficient approach, ensuring that every aspect of mosquito control is addressed, from prevention and surveillance to treatment and public engagement. This collaboration maximizes resource use, reduces the spread of mosquito-borne diseases, and ultimately protects public health.

Administration

The Administrative department handles daily operations, communications, compliance, and record-keeping. They manage internal and external communications, public inquiries, and support strategic planning. They ensure legal compliance, manage office functions, and provide logistical support to all departments, ensuring the district's efficient mosquito control efforts.

Aerial Operations

The Aerial Operations department manages aircraft for wide-area mosquito control, applying larvicides adulticides, and aquatic herbicides over large or inaccessible areas. They plan and execute missions based on surveillance data, coordinating with other departments to optimize treatment impact and minimize environmental effects while ensuring aviation regulations and safety standards are met.

Aquatic Herbicide

The Aquatic Herbicide department manages water bodies to prevent mosquito breeding by treating habitats like lakes, ponds, and marshes. They monitor water quality and vegetation, focusing on controlling aquatic plants that can harbor mosquitoes. By managing these environments, the department reduces mosquito breeding, protects public health, and preserves local ecosystems.

Community Outreach & Public Education

The Community Outreach & Public Education department engages the public on mosquito-borne disease prevention through educational programs, workshops, and campaigns. They use social media, community events, and public forums to raise awareness about mosquito control and prevention. By educating residents and fostering involvement, the department supports mosquito control initiatives and encourages community action for health and environmental protection.

Entomology

The Entomology department is key to the mosquito control strategy, conducting research and surveillance to track mosquito species, habitats, and population trends. They collect and analyze samples to identify high-risk breeding areas, monitor for resistance development and collaborate with the operations department to implement targeted control measures. This data-driven approach helps reduce mosquito populations and the risk of mosquito-borne diseases.

Fleet Maintenance

The Fleet Maintenance department ensures the district's vehicles and equipment, including trucks, boats, ATVs, and mission equipment are in optimal condition for mosquito control operations. They perform regular inspections, preventive maintenance, and repairs to minimize downtime and support efficient treatments. By ensuring equipment reliability, they help the district respond quickly and effectively to mosquito populations.

Finance

The Finance department manages the district's financial resources, overseeing budgeting, accounting, and financial reporting to ensure funds are properly allocated. They handle purchasing, contract management, grants, and funding, while ensuring compliance with regulations and best practices. By providing financial analysis and forecasts, the department supports decision-making and helps maintain the district's fiscal responsibility and operational sustainability.

Information Technology

The Information Technology department supports the district's operations by managing computer systems, networks, and software, ensuring they are secure and up to date. They handle data management, cybersecurity, and provide technical support, enabling effective mosquito control strategies and enhancing organizational efficiency.

Human Resources

The Human Resources (HR) department manages the district's workforce, handling recruitment, hiring, onboarding, employee benefits, and performance evaluations. They oversee staff training, ensure compliance with labor laws, address employee relations, and promote a positive work environment. By supporting the district's personnel needs, HR helps maintain a skilled and motivated team dedicated to mosquito control and protecting public health.

Operations

The Operations department identifies mosquito breeding sites and implements control measures and treatment plans, such as larviciding and adulticiding, to reduce mosquito numbers. They handle public service requests, address concerns, and coordinate with other departments to ensure timely and targeted mosquito control. Their efforts are key to reducing mosquito populations, preventing disease spread, and protecting community health.

Picture 2: Field surveillance

Control Efforts

The PCMCD implements an Integrated Mosquito Management (IMM) program that is a well-balanced, scientific approach to controlling mosquitoes. PCMCD reduces mosquito populations by various means, including source reduction aquatic plant management, the use of biological controls, and insecticides. Mosquito populations can increase rapidly depending on rainfall, tidal flows, and general weather conditions. Mosquito populations must be monitored consistently to determine which species are found in a particular area and to assure that control is carried out in the most efficient and effective manner.

There over 45 mosquito species in Pasco County and some of those species differ in habitat, behavior, and preferred bloodmeal source. Organized mosquito control is necessary because mosquitoes are not only a nuisance as biting insects, but are also involved in transmitting diseases to humans and other animals.

Controlling mosquitoes in the larval stage (larviciding) is the District's preferred method of control because the larvae are often concentrated in large numbers in various aquatic habitats. If the larvae are successfully controlled in these confined areas, this prevents a major emergence of flying and biting adult female mosquitoes. Larviciding is conducted by Field Technicians with the use of trucks, ATVs, lightweight equipment, and sometimes by hand unless access is limited, the area is hard to reach or too large to effectively treat by ground, or the timing of treatment is critical. In such cases, it is often necessary to use helicopters to inspect and treat for larvae. Larval control is one of the main aspects of the District's integrated approach to effectively manage mosquito populations.

Ultra Low Volume (ULV) trucks are generally used in areas with good road access for targeting adult mosquitoes during the evening while the mosquitoes are most active. Staff actively pursue pestiferous adult mosquito applications during the summer rainy season. Additionally, Wide Area Larvicide Spray (WALS) applications are performed in the early morning hours to target larval mosquitoes around people's homes. The WALS combines high volumes of air with low volumes of liquid materials to treat a wide variety of larval habitats and access cryptic habitats of vector mosquitoes more efficiently.

Picture 3: Larvicide truck spraying a ditch showing in-house design modification

Mosquitoes are not only a nuisance as biting insects, but are also involved in transmitting diseases to humans and other animals.

Focus on Efficiency

The PCMCD takes pride in delivering mosquito control services to Pasco County residents in a cost-effective and self-sufficient manner, with minimal reliance on external sources. This approach has enabled the district to be highly responsive to residents' needs while achieving substantial cost savings over time. The following sections will showcase key areas of efficiency within PCMCD that have greatly enhanced its operations and contributed to its overall success.

Materials and Equipment Procurement

The PCMCD has a long-standing practice of purchasing equipment and supplies at substantial savings through Florida State Contract pricing, military surplus facilities like Starke, and government rates for computer and office supplies. Mosquito control chemicals are acquired through competitive bidding to ensure the lowest cost for taxpayers. Vehicles are also purchased using state contract pricing, resulting in considerable savings. The district typically retires vehicles once they reach 100,000 miles and frequently receives a high return at auction. Due to the excellent care PCMCD provides for its vehicles and equipment, they are often seen as prime auction purchases, yielding better-than-expected returns.

Equipment Design and Modification

The PCMCD is widely recognized as an innovator in the development of equipment for larvicide and adulticide applications. Instead of purchasing costly, off-the-shelf equipment from distributors, the district designs and builds much of its own equipment in-house for daily use on trucks, ATVs, watercraft, and more. This custom-built equipment has proven to be more reliable and allows for quicker repairs, ensuring rapid return to service. Numerous mosquito control programs across the U.S. have visited PCMCD to observe the equipment in hopes of replicating it for their own use. Additionally, PCMCD stocks critical parts and supplies that are prone to wear and tear, enabling immediate replacement without waiting for purchase approval or delivery. This approach often allows equipment to be repaired and back in operation on the same day.

Larvicide Trucks

The larvicide trucks are engineered to maximize the efficient use of both the cab and utility body. The utility body holds a 250-gallon spray tank, and uses an injection system all designed in-house by staff. This system injects a precise amount of insecticide into the water as it flows through the hose or boom system mounted on the truck's front grill. The boom system allows the inspector to spray standing water for larval control without requiring additional personnel. The inspector can safely drive the truck while adjusting the spray nozzle to the desired position using an internal switch and actuator arm system. This setup is ideal for treating roadside ditches and other areas that can be safely navigated by the driver.

Picture 4: PCMCD Larvicide truck

Aerial Application

Helicopter hoppers significantly enhance the efficiency of treating adult mosquito populations by enabling rapid and precise aerial application of granular insecticides over large or challenging areas. These specialized hoppers are mounted on helicopters, allowing for effective treatment of extensive or hard-to-reach habitats such as wetlands, marshes, and floodplains. The integration of an auto-loading system further improves efficiency by automating the loading of insecticide material into the hopper. This system speeds up the refueling process, minimizes manual handling, and ensures a consistent and uninterrupted application of chemicals. Together, the helicopter hoppers and auto-loader streamline mosquito control operations, allowing for swift and thorough coverage while reducing operational downtime and environmental disruption.

Picture 5: Autoloader dispensing treatment material

Picture 6: Treatment material filling hopper on helicopter

Auto and Aviation Fuel Tanks

The PCMCD has installed both automobile and aviation fuel tanks to enhance operational efficiency, reduce fuel costs, and increase independence from local suppliers. By storing fuel on site, the district can purchase in bulk, lowering overall expenses. This setup eliminates the need for staff to spend valuable time transporting fuel to helicopters, which also reduces helicopter run time. Additionally, having a secure fuel supply on site provides a reliable resource during natural disasters, such as hurricanes, or other emergencies that might disrupt fuel availability elsewhere. In such situations, the district's fuel reserves could be shared with local emergency services, including Emergency Management, or the sheriff's department, if needed

Picture 7: Fuel tank for fleet

Picture 8: Fuel tank for helicopters

ULV Spray Equipment

The PCMCD has custom-designed and built most of its Ultra Low Volume (ULV) spray equipment for adult mosquito control. To construct these ground ULV sprayers, only the blower, engine, and nozzle assembly are purchased, while the frame, insecticide tanks, and riser tubes are welded in-house, leading to significant cost savings. The flow control system is designed to automatically adjust the insecticide output based on the vehicle's speed, ensuring the correct application rate. These ULV units have been standardized across the PCMCD fleet, making them highly reliable and easy to service, ensuring long-term, efficient use.

ATVs play a crucial role in treating adult mosquito populations, especially in areas that are difficult to access by larger vehicles. Equipped with custom-built ULV spray systems, these ATVs can navigate through rough terrain, such as swamps, forests, and rural areas, where mosquitoes often thrive. The ULV system, mounted on the ATV, disperses a fine mist of insecticide to effectively target adult mosquitoes. The agility and compact size of ATVs allow inspectors to cover a wide range of terrain while ensuring thorough treatment in areas that are otherwise inaccessible, contributing to the overall effectiveness of mosquito control efforts.

Picture 9: ATV application

Airboats are a key component in treating adult mosquito populations, particularly in large or challenging aquatic environments such as marshes, swamps, and floodplains. These boats are equipped with specialized spray systems that allow for the effective application of insecticides over extensive water surfaces and vegetation where mosquitoes breed. The unique design of airboats, with their shallow draft and powerful propellers, enables them to navigate through shallow and obstructed waters where traditional boats cannot reach. By using airboats, mosquito control efforts can cover large areas efficiently, applying insecticides to target adult mosquitoes and reduce their populations in critical habitats.

Picture 10: Airboat application

Amphibious machines are versatile all-terrain vehicles used to treat adult mosquitoes in rugged or uneven landscapes. With custom ULV spray systems, they access hard-to-reach areas like wetlands and dense vegetation, thanks to their low ground pressure and amphibious capabilities. The spray system disperses insecticide in a fine mist, allowing for effective mosquito control in challenging environments. Technicians also use the watercraft to perform aquatic weed control, which ultimately contributes to mosquito control.

Picture 11: Amphibious machine conducting surveillance

The PCMCD staff have converted weed eaters into cost-efficient handheld ULV sprayers for treating adult mosquitoes in hard-to-reach areas. Each conversion costs $450, compared to approximately $4,000 for a commercial unit. With 14 sprayers in use, that translates to a $49,700 cost savings. They provide targeted, portable insecticide application around homes, gardens, and campgrounds, improving mosquito control in inaccessible locations and enhancing overall efforts.

Picture 12: Handheld ULV spray application

Laptop Computers / Program Software

The PCMCD has integrated tablets into inspectors' vehicles, utilizing data management software to enhance efficiency. This software allows inspectors to access resident service requests and log information gathered during surveillance inspections. It also tracks vehicle locations, ensuring efficient response times and accountability. Additionally, the software aids in pre-planning helicopter applications and provides post-application analysis to verify that the correct areas were treated.

Picture 13: In-house truck modification for field data entry

The software is also used in daily planning meetings, where field inspectors review recent rainfall, weather conditions, mosquito trap data, resident requests, tidal information, and upcoming treatments. This tool has proven invaluable for sharing critical information and enabling the team to respond swiftly and effectively to public needs. Residents have praised the district for its rapid, high-quality customer service, and PCMCD continues to uphold that reputation.

Employee Cross Training

The PCMCD's team of over 50 full-time employees is cross trained to handle multiple tasks, which boosts operational efficiency across the 765 square miles of Pasco County. Instead of assigning staff to a single role, employees are frequently reassigned to different tasks and areas as needed. Many staff members juggle multiple responsibilities, keeping them actively engaged in all aspects of district operations. During the winter months, field employees assist with equipment repairs and other projects in the shop, for example. This multi-departmental approach ensures that the limited workforce is used effectively across various functions to accomplish the mission.

Picture 14: Morning briefing to review field data

Entomology

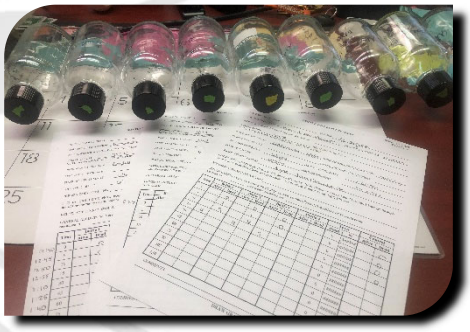
Research & Development

The PCMCD employs entomologists and biologists who collaborate with state universities, private industry, and government agencies to advance mosquito control technologies. Partners include the University of Florida, Florida A&M University, the University of South Florida, the USDA, the Navy Entomology Center of Excellence, and the World Health Organization. The district's research and development programs focus on practical research to enhance control strategies. This includes evaluating new commercial products, application techniques, and equipment, as well as developing innovative insecticide and herbicide delivery systems. Many insecticides and techniques now used globally were initially tested or developed by PCMCD. The district also assists pesticide manufacturers in field evaluations to gather data for market introduction, ensuring it remains at the forefront of new technologies and methods.

Picture 15: Bloodfed Culex mosquito

Disease Monitoring

The PCMCD is responsible for monitoring arboviruses, which are viruses transmitted by mosquitoes. Currently, the district monitors for West Nile Virus, Eastern Equine Encephalitis, and St. Louis Encephalitis using sentinel chickens. Throughout most of the year, staff collect weekly blood samples from sentinel flocks housed in coops across the county. These samples are analyzed at the Florida Department of Health (FDOH) laboratory to detect any infections from disease-carrying mosquitoes. If a virus is found, the affected area is thoroughly inspected to locate and eliminate mosquito breeding sites and adult mosquitoes associated with the virus.



Picture 16: Monitoring mosquitoes for resistance development

In addition, the PCMCD collaborates closely with the Pasco County Health Department and the FDOH to monitor other arboviruses not detectable through sentinel chickens, such as Zika virus, dengue fever, chikungunya virus, and malaria. Adult mosquitoes are collected and sent to the Bronson Animal Disease Diagnostic Laboratory (BADDL) for testing. With increasing urbanization and globalization leading to more travel-related mosquito-borne disease cases, it is crucial for PCMCD staff to stay informed and implement effective mitigation measures to prevent local transmission.

Picture 17: Sentinel chicken program

Picture 19: View of the mosquito insectory

Picture 18: Mosquito collection from light trap

PCMCD entomologists perform routine surveillance of mosquito species throughout Pasco County using traps to assess mosquito presence, abundance, and behavior. Mosquitoes collected are identified to species in the laboratory, providing crucial data for targeting larvicide applications and guiding ULV adulticiding missions. To ensure the effectiveness of control materials, PCMCD monitors mosquito populations for resistance through bioassays. This involves collecting mosquito eggs and larvae from the environment, rearing them to maturity, and treating them with known insecticide concentrations. Field-caught mosquitoes are compared to lab-reared populations to determine susceptibility and identify any developing resistance, helping to adjust dosages and maintain effective control.

Picture 20: Suction trap used to collect adult mosquitoes

Surveillance Tools

As one of many different surveillance tools used to determine the number of mosquitoes in a given area, PCMCD staff use passive suction traps that are designed and built in-house and have been in use for over 30 years. These traps have been replicated by other agencies such as the USDA and other mosquito control programs for use in their surveillance and research programs. Monitoring trends in trap collections throughout Pasco County over time provides an indication of the changes in the mosquito populations. They are very inexpensive to build and maintain.

Picture 21: Rotator trap to identify times of peak mosquito flight activity

Aquatic Herbicide

The PCMCD's Aquatic Herbicide program, does not perform herbicide applications to control aquatic weeds for beautification purposes. Staff focus control efforts targeting invasive, non-native weeds that harbor certain mosquito species, or to thin out areas such as floating plant mats where growth is so thick that natural mosquito predators like minnows can't access the immature mosquitoes.

Picture 23: Water Lettuce

Aquatic herbicide equipment includes herbicide trucks with a hose reel, airboats, amphibious vessels, and helicopters. The increased development of residential housing in formerly unpopulated areas of the District results in a continuously increasing aquatic weed control effort.

Picture 22: Water Hyacinth

The district's primary efforts include the control of two exotic floating weeds: Water Hyacinth (*Eichornia crassipes*) and Water Lettuce (*Pistia stratiodes*). These plants support the development of *Mansonia dyari* and *Mansonia titilans* mosquito species. A third mosquito, *Coquilletidia perturbans,* is also associated with aquatic weeds. It is found on a number of types of rooted plants along the edges of lakes, ponds, canals, and ditches but is best known to be associated with Cattails.

Arboviral Detection

In the event of arboviral detection, additional surveillance and control efforts are launched, mosquito advisories and alerts are communicated to local agencies and authorities, warning residents to be aware of the risks and to take the proper precautions to avoid being bitten by mosquitoes.

Picture 24: Entomology staff taking blood sample from chicken

Picture 25: Analyzing blood sample

Picture 26: PCMCD in the news warning citizens of the potential for mosquito-borne disease transmission

Community Engagement & Education

Community Outreach

We engage with the community through events like public gatherings, homeowner association meetings, clubs and societies, civic organizations, county fairs, workshops, and even state and national conferences. These interactions offer residents valuable insights into mosquito control and prevention.

Picture 27: Pasco Fire Rescue HAZMAT crew enjoying a tour of the facility

Online Service Requests

The PCMCD online service request form offers significant benefits to the public by providing a quick, convenient, and accessible way for residents to report mosquito problems and request assistance. This digital platform allows users to submit service requests at any time, without needing to make a phone call or visit in person. It streamlines the communication process by allowing residents to provide specific details about mosquito activity in their area, enabling the district to prioritize and respond efficiently. Additionally, the website includes a real time map giving the public transparency on the status of treatments across the county. By making the service more accessible, the district can improve its ability to address mosquito-related concerns promptly, ultimately enhancing the effectiveness of mosquito control efforts in the community.

Educational Trailer

The PCMCD educational trailer is a mobile, interactive learning hub designed to engage the public in mosquito control awareness and prevention. Equipped with displays, videos, and hands-on activities, the trailer provides valuable information about mosquitoes, their life cycles, and the risks of mosquito-borne diseases. Visitors can learn about integrated mosquito management (IMM), including surveillance methods, the importance of eliminating breeding sites, and how different control strategies like larviciding and adulticiding work.

Picture 28: Educational trailer

The trailer often features exhibits such as live mosquito larvae, equipment demonstrations, and informational panels on how residents can protect themselves and their communities. The mobile nature of the trailer allows it to be brought to public events, schools, fairs, and community gatherings, making education accessible to a broader audience.

District Tours

Tours offers a behind-the-scenes look at how the district operates to protect public health and manage mosquito populations. During the tour, visitors learn about the science of mosquito control, including the IMM approach, which combines surveillance, biological control, chemical treatments, and public education.

Participants see how technicians collect and identify mosquito species in the lab, view equipment used for ground and aerial treatments, and discover how cutting-edge technology, such as drones and GIS mapping, is used to track and manage mosquito populations. The tour also highlights the district's research efforts, including how resistance to insecticides is monitored through bioassays and how new mosquito control products and methods are evaluated. Visitors leave with a better understanding of the district's role in controlling mosquito-borne diseases and how they can contribute by reducing breeding sites around their homes.

Picture 29: Public touring the fleet maintenance shop

School & Summer Programs

The PCMCD offers a free educational program to all Pasco County schools, designed to teach students and educators about mosquitoes. Through interactive presentations and hands-on activities, students have the chance to identify mosquitoes, learn about their life cycle, and observe organisms that prey on mosquitoes. They also gain insight into the various mosquito control methods used throughout Pasco County.

Picture 30: Providing education in the classroom

One of the key goals of the program is for students to share what they've learned with their families, helping to spread awareness about mosquito prevention and control. During the summer, the program is fully customizable, allowing PCMCD to visit libraries, outdoor camps, school-based camps, and more, bringing mosquito education to a wide range of community settings.

PCMCD Goals and Performance Measures

These goals and performance measures will guide the PCMCD in maintaining its integrity, ensuring accountability, and delivering superior public service and education, all while effectively controlling mosquito populations in an environmentally conscious manner and minimizing the risk of mosquito-borne disease transmission in Pasco County, FL.

Goal 1: Optimize Mosquito Surveillance and Control Applications

Performance Measures:

1. Surveillance Coverage:
    - Expand mosquito surveillance to cover emerging high disease-risk areas due to population growth.
        a) **Measure:** Evaluate effectiveness of all adult mosquito surveillance locations based on historical surveillance data. Optimize and reorganize sites, trap types, and surveillance schedules to ensure adequate surveillance and comprehensive county-wide coverage.
    - Establish a baseline and strive to achieve a 95% accuracy rate in species identification of mosquitoes collected in the field within one year through rigorous training and proficiency testing for entomology and field staff.
        a) **Measure:** Perform assessment tests quarterly to ensure a high level of adult mosquito identification accuracy in entomology staff.
        b) **Measure:** Perform assessment tests bi-annually to ensure a high level of larval mosquito identification accuracy to *Genus* level for field staff.
        c) **Measure:** Conduct weekly mosquito-of-the-week species biology, behavior, and identification training with all entomology and field staff.
2. Control Efficacy:
    - Continue to evaluate new (to PCMCD) mosquito control products, equipment, and treatment methodologies.
        a) **Measure:** As new mosquito control products, mission equipment, and methodologies become available, perform science-based evaluations to determine their effectiveness and potential integration into the PCMCD integrated mosquito management regime.
    - Enhance the effectiveness of control applications through innovation and use of advanced technologies and methodologies.
        a) **Measure:** Perform regular in-house assessments of novel and cornerstone control strategies to bolster innovation and refinement of existing practices.
    - Continue District's long-standing trend of creating equipment innovations and operational efficiencies.
        a) **Measure:** Optimize use of the auto-loading system used for helicopter applications.
        b) **Measure:** Build second helicopter support trailer with autoloader for use at remote landing zones.
        c) **Measure:** Enhance and optimize ULV spray equipment.
        d) **Measure:** Continue to optimize the use of the District's *On-The-Right-Track system* and build system into 2 additional trucks to be become multi-use vehicles.
        e) **Measure:** Add 2 new service trucks to ULV ground adulticide fleet within one year.
        f) **Measure:** Purchase electric ground ULV spray systems and optimize for use in fleet.
    - Ensure all control equipment is properly calibrated annually and complies with all associated pesticide label requirements and federal and state laws, ensuring equipment is operating economically and effectively.
        a) **Measure:** Perform flowrate, deposition, and droplet characterization, and any additional maintenance-related testing on all hand operated, vehicle-mounted, and

helicopter-mounted control equipment once annually at minimum. Modifications to or repairs of equipment may require additional calibration testing as needed.

- Further Develop and Refine efforts to combat domestic mosquito vector species.
    a) **Measure:** Identify areas with high densities of domestic mosquito species, *Aedes aegypti* and *Aedes albopictus*.
    b) **Measure:** Optimize use of liquid larvicide applications targeting domestic mosquito vectors and increase frequency of applications by 10% compared to FY 2023/2024.
    c) **Measure:** Build out the capacity to perform wide-area liquid larvicide applications via helicopter. Evaluate and optimize equipment to begin operational use.
- Continue to monitor for and identify resistance to pesticides in various mosquito populations.
    a) **Measure:** Evaluate mosquito population resistance profiles for all adulticide products currently used based on mosquito species and geographic locations annually.
- Implement an in-house UAS/Drone Program to reduce and eventually eliminate reliance on contracted services.
    a) **Measure:** Create job description for Drone Pilot and fill position vacancy.
    b) **Measure:** Purchase drone, create training program, obtain appropriate state/federal approvals and licensure, and implement use policies.

Goal 2: Enhance Integrity in Operations and Decision-Making

Performance Measures:

1. Transparent Reporting:
    - Implement an annual reporting system detailing mosquito surveillance data, control activities, and outcomes to performance measures described in the District's Strategic Plan.
        a) **Measure:** Create report documenting pertinent information and seek approval from the Board.
        b) **Measure:** Publish report on the PCMCD website and distribute through local community partners by the set deadline of December 31st following the end of the fiscal year.
    - Refine PCMCD's Strategic Plan for fiscal year 2025-2026.
        a) **Measure:** Update PCMCD Strategic Plan to include priorities for the upcoming fiscal year. Seek Board approval for the FY 2025-2026 PCMCD Strategic Plan and publish on website by October 1st, 2025.
    - Enhance Board Meeting Packets by adding operational data and post Board Meeting Packets to PCMCD website prior to regularly scheduled Board Meetings.
        a) **Measure:** Use PCMCD data management system to create reports of pertinent data to share with the Board and public regarding District operations to enhance the comprehensiveness of the Board Meeting Packets.
        b) **Measure:** Ensure all regularly scheduled Board Meeting Packets are posted to the PCMCD website at a minimum of 48 hours prior to each regularly scheduled Board Meeting.
    - Enhance District website by featuring key mosquito control roles with mini biographies.
        a) **Measure:** Post on website key administrative and operational staff photos with mini biographies.

2. Ethical Standards Compliance:
    - Conduct annual ethics training for all staff members.
        a) **Measure:** Establish a baseline and strive to achieve 100% staff participation in ethics training sessions and monitor adherence through internal audits conducted once annually.
    - Digitize procurement policy and improve credit card purchasing process.
        a) **Measure:** Development and implement a paperless process for procurement within 6 months.
        b) **Measure:** Draft and seek approval for refined policy for newly created purchasing process within one year.
        c) **Measure:** Create updated credit card policy to increase accountability of staff. Implement new policy within one year.
        d) **Measure:** Draft and seek approval for refined credit card policy within one year.
    - Implement new banking institution to hold PCMCD funds.
        a) **Measure:** Publish RFP for new banking institution, select appropriate institution, and begin utilizing new institution for District banking needs.
    - Evaluate requirements for annual audit and select appropriate firm to conduct the audit.
        a) **Measure:** Publish RFQ to select new auditing firm to complete annual audit.
    - Create standard operating procedures (SOPs) for administrative processes following best management practices in Finance & Accounting, HR, IT, and Office Management.
        a) **Measure:** Draft and approve SOPs for monthly financial compliance and monitoring processes, onboarding employees, evaluating employee performance, managing district software and securities, and supply inventory within one year.
    - Create SOPs for entomology departmental processes following best management practices for bioassays, mosquito surveillance, mosquito identification, arboviral surveillance, calibrating and characterizing spray equipment, and field testing.
        a) **Measure:** Draft and approve SOPs for larval assays, adult bioassays, trap set up and collection, trap sorting and identification, preparation of attraction infusions, blood sample collection, mosquito pool cold-chain procedure, chicken coop maintenance, standard ULV field testing, aerial adulticide testing, swath characterization testing, droplet characterization testing for hand-held, truck-mounted, and helicopter-mounted equipment.
3. Increase operational training and safety procedures and continuing education for staff:
    - Ensure proper field training for new hires as appropriate based on department
        a) **Measure:** Provide guidance and education to prepare employees to obtain their Public Health Pest Control Applicator License through FDACS and additional licensure and certifications as needed, based on position.
        b) **Measure:** Ensure all employees receive appropriate continuing education units required to maintain appropriate licensure, based on position.
    - Cross-train employees of various departments to ensure optimal understanding of roles within the operational structure of the PCMCD and to provide adequate back-up.
        a) **Measure:** Perform cross-training across various departments during the winter months.
        b) **Measure:** Update Emergency Response Plan for Aviation to include use of autoloaders.

c) **Measure:** Update Emergency Response Plan for Operations to include use of electric ULV sprayers.

4. Increase employee retention and morale:
    - Optimize use of ADP for HR and people management.
        a) **Measure:** Create and implement new and comprehensive digital process for onboarding/offboarding employees.
        b) **Measure:** Create additional opportunities for employees to gain recognition through Employee Spotlights on social media.
5. Pursue capital projects:
    - Construct new operational campus.
        a) **Measure:** Obtain all local and state permits.
        b) **Measure:** Hire a qualified General Contractor through procurement using a pre-qualification process followed by a hard bid evaluation.
        c) **Measure:** Execute appropriate contracts, mobilize construction crews, and begin site work.
        d) **Measure:** Ensure cashflow of project and obtain necessary financing to complete the campus.
6. Leverage available business intelligence tools to enhance reporting and operational management
    - Optimize use of data visualization tools for presentation of operational information during morning field briefings and Board of Commissioner Meetings.
        a) **Measure:** Use data management reporting system to create pertinent visual aids to display data during morning meetings to create efficiencies and streamline meeting.
        b) **Measure:** Use data management reporting system to create pertinent visual aids to display data and insert charts into monthly Board Packets in preparation for monthly meeting of the Board of Commissioners.

Goal 3: Strengthen Accountability Across All Levels of the Organization

Performance Measures:

1. Performance Evaluation System:
    - Update and implement employee performance evaluation system for staff based on clear, measurable objectives.
        a) **Measure:** Complete bi-annual employee performance reviews and achieve a minimum of 90% of staff meeting or exceeding their target goals through enhanced guidance and progress monitoring.
        b) **Measure:** Update policy manual to reflect digital process for employee performance reviews and bi-annual review process.
2. Increase sustainability efforts and reduce environmental impact:
    - Foster a culture of sustainability for energy consumption, waste generation, and water usage.
        a) **Measure:** Implement energy efficiency measures, consider installation of solar panels and use of hybrid and/or electric vehicles.
        b) **Measure:** Reduce paper waste generated by transferring to digital processes and file-storage. Encourage staff to be cognizant of paper waste generation through education.

c) **Measure:** With the construction of new operational campus, enhance water conservation by installing water-saving fixtures and appliances. Encourage staff to be more cognizant of water use through education.
d) **Measure:** With the construction of the new operational campus, upgrade lighting. Use energy-efficient LED bulbs and install motion sensors to ensure lights are only on when needed. Encourage the increased use of natural light to reduce reliance on artificial lighting.

3. Digital Asset Management:
   - Establish digital fuel tracking system to track usage more effectively.
     a) **Measure:** Upgrade from paper process to digital fuel-monitoring system.
     b) **Measure:** Update employee policy manual to reflect newly created digital fuel-dispensing and monitoring process within one year.
   - Create digital requisition system for purchasing to streamline administrative functions.
     a) **Measure:** Create digital purchase monitoring system to gain a comprehensive view of District-wide procurement and increase financial safeguards.
     b) **Measure:** Update employee policy manual to reflect newly created digital process within one year.
   - Create digital asset tracking system.
     a) **Measure:** Track assets assigned to employees through ADP bi-annually.
     b) **Measure:** Develop and implement a digital process for inventory management for each department.
     c) **Measure:** Update employee policy manual to reflect newly created digital process.
4. Stakeholder Collaboration and Feedback Mechanism:
   - Collaborate with Pasco County's Emergency Management (EM) to develop a Memorandum of Understanding (MOU) to share resources and facilities during an emergency activation.
     a) **Measure**: Draft and approve MOU to partner with EM to allow for the shared use of resources and District facilities.
   - Establish a feedback system to gather input from citizens, local health departments, and other stakeholders on PCMCD services.
     a) **Measure:** Collect and analyze feedback annually.
     b) **Measure:** Create SOP for responding to citizen reviews and feedback.
     c) **Measure:** Develop actionable improvement plans for areas with lower satisfaction ratings to improve customer experience.

Goal 4: Elevate Customer Service Quality and Responsiveness

Performance Measures:

1. Response Time to Service Requests:
   - Improve response time to mosquito-related inquiries by streamlining communication processes and enhancing staff training in customer service.
     a) **Measure:** Ensure communication is effective but succinct. The appropriate staff should be involved with the inquiry, depending on the nature of the inquiry.
     b) **Measure:** Perform annual customer service training for all staff.
   - Reduce the average response time for addressing resident mosquito complaints and service requests.

a) **Measure:** Achieve an average response time of 1 business day or less for service requests throughout the year, outside of disease response and disaster efforts.

2. Customer Satisfaction:
    - Implement a customer satisfaction survey to assess the quality of service and overall experience of interaction with mosquito control staff.
        a) **Measure:** Create and distribute citizen surveys for field staff evaluation. Analyze responses and reply appropriately to achieve a high level of customer satisfaction.
3. Mosquito-Borne Disease Response:
    - Rapidly respond to disease threats.
        a) **Measure:** Immediately respond to notifications of human or animal detections of mosquito-borne disease by ensuring initial contact with reporting agency.
        b) **Measure:** Collaborate with Florida Department Of Health, Pasco Health Department, and FDACS Animal Industries as appropriate for timely surveillance and control efforts.
        c) **Measure:** Proactively use technology and media to inform the public of relevant mosquito-borne disease situations, threats, and protective measures.

Goal 5: Proactively Address Mosquito-Borne Disease Risks and Increase Public Knowledge on Mosquito Control

Performance Measures:

1. Rapid Response Protocols:
    - Develop and maintain rapid response protocols for outbreaks of mosquito-borne diseases.
        a) **Measure:** Mobilize appropriate department staff for an initial response within 1 business day of disease presence notification and complete intervention measures as needed within 3 business days.
        b) **Measure:** Perform successful walk-through of impacted area with informative handouts, surveillance data, targeted treatment plans and executions in the area for prescribed number of weeks, specific to the disease and mosquito vector species.
    - Develop implementation plan to incorporate mosquito pool testing into entomological and disease surveillance to identify virus in mosquito populations.
        a) **Measure:** Draft, review, and finalize job description for PCR-trained laboratory staff needed to perform mosquito pool disease surveillance.
        b) **Measure:** Develop a plan to integrate PCR testing into PCMCD's Integrated Mosquito Management Plan by the end of the fiscal year, in preparation for hiring personnel once the laboratory facility at the district's new campus is completed.
2. Disease Prevention and Mosquito Control Outreach and Education:
    - Conduct public education campaigns on mosquito-borne disease and prevention strategies to increase citizen awareness of public health mosquito control practices.
        a) **Measure:** Implement at least four major campaigns annually on mosquito-borne disease awareness and prevention, with engagement metrics indicating reach and effectiveness (e.g., social media interactions, attendance at community events, etc.).
        b) **Measure:** Create messaging for dissemination specific to each mosquito-borne disease threat to maintain on file for future reference and implementation.
    - Enhance public outreach and education efforts on mosquitoes and integrated mosquito management.

    a) **Measure:** Conduct or participate in a minimum of 75 educational presentations, workshops, schools, or community events within one year, to increase awareness about mosquitoes and mosquito control.
    b) **Measure:** Increase the number of posts on social media by 18% over the number of posts made during the 2023-2024 FY.
- Create and maintain mock backyard static display at Safety Town.
    a) **Measure:** Draft plans for and build mock backyard at selected "homesite" in Safety Town.
- Create and maintain static display at Pasco County's Energy and Marine Center (EMC).
    a) **Measure:** Draft plans for and build educational display to post at the EMC.
    b) **Measure:** Review and update information on display bi-annually.
- Meet with Pasco County Legislative Delegates to inform them of District activities.
    a) **Measure:** Meet with 4 delegates either at the PCMCD headquarters or at the Legislature's office(s) to inform on PCMCD's public health and control efforts.

Conclusion

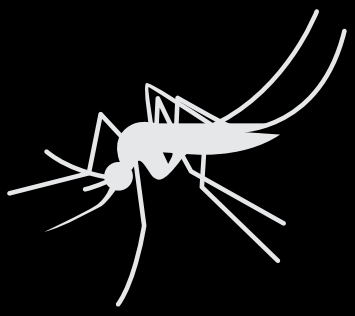
The Pasco County Mosquito Control District's Strategic Plan is a comprehensive roadmap designed to address the growing and evolving needs of our community. With a foundation rooted in our history of innovation, commitment to excellence, and reputation for rapid, quality customer service, this plan emphasizes our unwavering dedication to protecting public health. By focusing on integrity, accountability, public service, and education we aim to enhance our operations, ensuring that we remain at the forefront of mosquito control.

As Pasco County continues to experience rapid population growth, the challenges we face will require not only sustained mosquito control efforts but also continual adaptation and improvement to PCMCD's operational methodologies. Our outlined goals and performance measures provide a clear framework for advancing our mission, enhancing our capabilities, and fostering trust and engagement with the community we serve.

We are confident that by adhering to this Strategic Plan, the Pasco County Mosquito Control District will continue to lead in the fight against mosquito-borne diseases. Our commitment to integrity in ethical practices, transparent accountability, and responsive service will ensure that we meet the needs of our growing population while maintaining the highest standards of public health protection.

Together, with the support of our dedicated staff, community partners, stakeholders, and residents, we look forward to a future where the impacts of mosquito-borne diseases are minimized, and the health and well-being of Pasco County residents, their pets, and livestock are safeguarded. This Strategic Plan is not just a vision for the future but a call to action, affirming our pledge to serve with integrity, accountability, and unwavering commitment to excellent public service and quality education.

FIGHT THE BITE



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