

# Florida Flyer

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Courtesy of Marco Island Airport

*Terminal building and aircraft at Marco Island Airport.*

## Marco Island Airport

*by Robert Tweedie, C.M.*

Marco Island Airport (MKY) is located in eastern Collier County, approximately four miles northeast of the city of Marco Island and approximately 15 miles south of the city of Naples. Our airport serves the southwestern portion of Florida's "Paradise Coast."

The area is primarily a tourist destination known for its beautiful white sandy beaches along the southwestern Gulf Coast. Sport fishing, eco-tourism, and adjacent proximity to the Florida Everglades are also major attractions to the area. Several medium-sized to large-sized hotel resort properties are located along the shores of Marco Island, hosting business and corporate meetings and events throughout the year.

### Surrounded by mangroves

Marco Island Airport has one 5,000-foot by 100-foot runway (17/35) served by both non-precision VOR, GPS approaches, and GPS LPV (vertical guidance) approaches. The airport is surrounded by mangrove wetlands on all sides with a golf course/community located immediately adjacent to the northwest.

Two six-unit T-hangar buildings are owned by the Collier County Airport Authority and leased to individual aircraft tenants. The Collier County Airport Authority is the exclusive provider of aviation fuel (Jet A, Avgas 100LL)

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Aaron N. Smith  
State Aviation Manager

***“The Aviation Office  
is now officially  
the Aviation and  
Spaceports Office  
(ASO).”***

# MANAGER'S CORNER

## Aviation and Spaceports Office

First and foremost, the Aviation Office is now officially the Aviation and Spaceports Office (ASO). The change is a result of the department's further commitment, and the involvement and support of Florida's spaceports and the aerospace industry. Now that the space shuttles, formally called “Orbiters,” are all in museums around the country, the next phase of space travel is well underway. It's now time for the commercial space race. There are a number of space platforms either under development or in use which may lead the way for the U.S. to regain much of the ground lost to other nations over the past several decades. The sky is no longer the limit of our area of responsibility.

## Air Cargo Conference

Department staff from Tallahassee and Fort Lauderdale attended the 2013 Air and Sea Cargo Americas Conference held in Miami, November 6–8, 2013, along with attendees from over 65 nations including China, Columbia, Russia, Panama, Germany, Chile, Brazil, and the United Kingdom, to mention a few. As many of you may know, Miami International Airport accounts for 70 percent of Florida's air cargo tonnage, is ranked first in international air cargo in the U.S., and is ranked tenth in the world, with over two million tons of cargo each year. Much of the discussion centered on constraints at the federal level, and the inconsistent and various customs regulations amongst all the nations served by cargo carriers, air or sea. Security also remains a real issue. One other point noted was the lack of air cargo airport infrastructure in Latin America and how Latin American countries are beginning to address these challenges. If your interest is air or sea cargo, this is the conference for you (<http://www.aircargomericas.com>).

## Airport Leadership Development

On February 24, 2013, the Airport Leadership Development Program was launched. The Airport Leadership Development Program is a collaborative effort between the Florida Department of Transportation, the Florida Airports Council, and the Center for Urban Transportation Research at the University of South Florida. This three-and-a-half day training and education program provides participants with greater knowledge and skills they can apply quickly at their airports, and helps participants acquire tools and techniques to focus energy on leadership appropriate to the needs in their current airport environments. The program also helps participants expand their self-awareness and design a developmental roadmap to guide their leadership journey.

A total of three separate sessions were held this year with a total of over 60 airport leaders from throughout the state participating. Survey results indicated an overwhelmingly positive response to this course.

## Vu Trinh, Airport Engineering Manager, Retires

It is with a sincere sense of gratitude that I thank Vu Trinh for his dedicated service to FDOT over the last 35 years. As some of you already know, Vu Trinh will be retiring at the end of December. Over the past 14 years, Vu Trinh has capably managed our statewide airfield pavement management program. While we will miss him greatly, we wish him the best with his new adventure. Vu Trinh has honorably served the FDOT family with dedication and loyalty. Vu Trinh will be truly missed. Please wish him well.

# Airport Stormwater Management

Years of research and collaboration result in changes that benefit airports and enhance safety for the public

Over the past 10-plus years, the Aviation and Spaceports Office has been working closely with the Federal Aviation Administration, the Florida Department of Environmental Protection, and the Water Management Districts to address airport stormwater.

On October 1, 2013, the Florida Department of Environmental Protection successfully adopted Florida Administrative Code 62-330.449, General Permit for Construction, Operation, Maintenance, Alteration, Abandonment or Removal of Airport Airside Stormwater Management Systems.

The rule adoption is the culmination of over a decade of data collection, model studies, and administrative negotiations aimed at improving airport safety, effectively managing stormwater quality and quantity, speeding permit times, and reducing construction costs. The new rule represents success on all fronts and the results are being applied in other states and to other project types.

## Agencies work together

The Aviation and Spaceports Office of the Florida Department of Transportation (FDOT), with full support from the Federal Aviation Administration (FAA), formed a stakeholder group to address airport stormwater management in Florida. The stakeholder group, in addition to FDOT and FAA, included the Florida Department of Environmental Protection (FDEP) and the five state Water Management Districts.

The FDEP and Water Management Districts jointly work to protect Florida's water quality and to manage extremes of flood and drought through regulation and physical works. Together, the state transportation and environmental agencies selected a consultant team to study the challenges facing

the aviation community in managing stormwater runoff, collect the data, and suggest solutions meeting the requirements of aviation and environmental protection.

## Results of data collection

The multi-year data collection was conducted at a wide range of airports including large international facilities down to small general aviation airfields in order to be representative of all of Florida's 130 public-use airports. Findings include:

- Airside pavements—aprons, taxiways, and runways—have very good stormwater quality when compared to most land uses. In many cases, the water quality for nutrients of the direct pavement runoff is equal to or better than natural sites.
- Overland flow is generally effective in reducing pollutant loads for those constituents that must be kept at or below natural background to avoid adverse impacts. This avoids wet ponds that can attract birds and other wildlife hazardous to aircraft operations.
- Designs based on average annual

conditions best manage runoff quality. Designs based on specific storms advised by the FAA can reduce costs and still provide flood protection for off-airport properties.

## General Permit

The General Permit from FDEP and the Water Management Districts authorizes those airport airside projects that can match nutrient loads from a natural vegetative community and that do not impact wetlands or cause offsite flooding.

The permit is issued within 30 days of application and accelerates project schedules significantly which is crucial when working against accelerated schedules to obtain FAA funding. The new rule references the Statewide Airport Stormwater Best Management Practices Manual that was prepared as part of the FDOT airport stormwater initiative. The BMP Manual provides the "how to" information to evaluate and design systems that meet the project mission of "Clean Water – Safe Airports." The manual will continue to be updated as engineering advances support improved design methods.

While the up-front engineering costs are increased due to added testing and analysis, the construction savings far exceed those engineering costs. This is supported by airport projects that were constructed using the method prescribed in the airport stormwater initiative, but permitted under the slower and more elaborate Individual Permit process.

Costs for engineering for ten projects at three airports were about \$500,000 more expensive than standard designs. Construction cost savings for



*A paired stormwater sample collection system for testing water quality directly from the runway pavement and overland flow away from the pavement at Orlando Sanford International Airport.*

**See Stormwater, page 5**



# Marco Island Airport

From page 1

and provides FBO-related services and ground handling. Rental car service is provided through concessionaire agreements with Avis, Enterprise, and Hertz rental car agencies. There are two commercial aviation service providers on the field, Air Expeditions Inc. d/b/a Marco Aviation (aircraft charter, aircraft rental, flight training, and aircraft maintenance) and Island Hoppers (helicopter and aircraft charter, aerial sightseeing tours).

The Marco Island Civil Air Patrol is a very active squadron based at Marco Island Airport. The squadron has a hangar/air operations facility at the airport adjacent to the general aviation terminal/administration building. They have a strong presence through their cadet program, search and rescue, inter-agency cooperative activities, and missions with several federal, state, and local agencies including Defense, Homeland Security, Customs and Border Protection, and other law enforcement and emergency management agencies.

## Constructed in 1970s

Marco Island Airport was first constructed in the mid-1970s by The Deltona Corporation, a private real estate developer, for the purpose of flying in prospective buyers. The company experienced financial difficulties resulting from lawsuits and development restrictions due to the enactment of new environmental regulations.

Subsequently, airport ownership was taken over in the early to mid-1980s by Provincetown Boston Airlines (PBA), operating the airport as a public-use general aviation facility and providing scheduled airline service into the airport. The demise of PBA due to bankruptcy in the late 1980s led to the eventual transfer of the airport to the state of Florida, which allowed Collier County to operate the airport through an agreement while plans were made to turn the property into environmental preserve land.

In 1993 the Collier County Airport Authority was formed through a county ordinance to operate and develop the Immokey, Everglades City, and Marco Island airports. The following year, a land transfer transaction was executed whereby title of the airport property was transferred from the state of Florida to Collier County in exchange for a parcel of county-owned property within the Fakahatchee Strand preserve.

## Transforming the airport

Collier County, through its airport

authority, then began the work of transforming the airport from a small, underutilized, poorly maintained airstrip with few facilities, amenities, or services into a thriving general aviation airport with a modern general aviation terminal with passenger and crew amenities, full-service FBO, and aircraft T-hangars.

We have added instrument approach procedures, and we have undertaken an ongoing vegetation management program to prevent the incursion of mangroves in runway approach areas. The airport had been constructed with no parallel taxiway to serve the full length of the single 5,000-foot runway and without sufficient ramp space to accommodate the capacity necessary for the seasonal peak demand of corporate jets and various general aviation single-engine, twin-engine, and turbo-prop aircraft.

The Collier County Airport Authority undertook an extensive environmental permitting and mitigation program over a period of almost 15 years to allow for the construction in 2012 of a full-length parallel taxiway and over 500,000 square feet of additional new ramp space.

Currently, the design has been completed and FAA/FDOT grant funding has been awarded this year for the rehabilitation of Runway 17/35 (full-depth pavement reconstruction) and portions of the northwest apron. This project



Photograph by Florida Aerial Services, Inc.

*Aerial view of Marco Island Airport.*

## Economic Impact

The total annual economic impact of Marco Island Airport follows:

- **Direct impacts: \$4,425,900**  
(from the tenants/businesses at the airport and construction projects undertaken by the airport or by on-site businesses)
- **Indirect impacts: \$6,978,000**  
(associated with spending from visitors who arrive in the area by way of general aviation aircraft)
- **Multiplier (additional) impacts: \$9,131,000**
- **Total economic activity: \$20,534,900**

—from the *Florida Statewide Aviation Economic Impact Study*,  
March 2010



*Left: Transient aircraft on the newly constructed northwest terminal apron during the holiday season of 2010, with Civil Air Patrol hangar and the shadow of palm trees.*

*Below: Fuel trucks at Marco Island Airport.*



Photographs courtesy of Marco Island Airport

will also include safety areas and drainage improvements as well as clearing and filling of adjacent wetland areas for future hangar/ramp/terminal development. Construction is expected to begin in January 2014 and should be substantially completed in April.

## Economic impact

Currently, 15 people are employed at the airport, including airport authority personnel and those employed by private charter, flight school, and maintenance providers at the airport. The 2010 Statewide Economic Impact Study conducted by the FDOT Aviation and Spaceports Office, estimates that Marco Island Airport provides a total economic benefit to the region of 202 jobs, \$20,534,900 in economic activity, and a total payroll of \$5,816,800. The airport serves the eastern portion of Collier County including the city of Marco Island. The service area encompasses a population of over 30,000 full-time residents with an additional seasonal population of part-time residents and visitors which more than doubles this number.

The Collier County Airport Authority has adopted the following mission statement for its overall airport system, including Marco Island Airport, Immokalee Regional Airport, and Everglades Airpark:

- Operate and develop these valuable, publicly owned assets for the benefit of the citizens and taxpayers;
- Pursue environmentally compatible projects that will contribute to

## Points of Interest

- Marco Island Airport has 25 based aircraft.
- The airport estimates 20,000 annual aircraft operations for the past year.
- An estimated 33 percent of the airport's annual operations are visiting general aviation aircraft.

the safety of these airports and the economy of the community; and

- Ensure security and safety remain preeminent concerns in the management of these airports.

For more information about Marco Island Airport, see the airport's website at [www.colliergov.net/index.aspx?page=21](http://www.colliergov.net/index.aspx?page=21) or call the airport at (239) 642-7878. ♦

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# Stormwater Management

## From page 3

those same projects were about \$4.5 million compared to standard design costs. Savings came from smaller culverts, no ponds, and no underdrain systems. These savings represent a 20 to 30 percent cost reduction on all new airport pavement projects which could amount to \$10 to \$20 million per year over the next 10 years.

## Major step forward

The General Permit is a major step forward based on data and engineering. However, it does not apply to all airside projects or to non-airside projects at airports. There are projects and airports that cannot use the permit directly due to geology or pre-existing drainage conditions, and that may require wet ponds for quality or flood management. The FDOT, FAA, FDEP, and Water Management Districts are addressing these situations with a full-scale, pilot study of a wet pond with special design features resulting from this airport stormwater study. These features are intended to minimize wildlife attraction while meeting the requirements for water management in a reduced area. If the full-scale tests match predictions from computer simulations and physical scale models, these design features will become a part of the General Permit in the future.

The public is the beneficiary of the safety, environmental protection, and overall cost savings this airport stormwater initiative has produced. Air travel safety is enhanced without compromising water quality or flood protection. This project highlights the effectiveness of inter-agency focus on the common good of citizens of Florida.

For more information about the stormwater study, see [www.dot.state.fl.us/aviation/stormwater.shtm](http://www.dot.state.fl.us/aviation/stormwater.shtm) or contact Abdul Hatim, Aviation Program Development Manager at (850) 414-4504 or [Abdul.Hatim@dot.state.fl.us](mailto:Abdul.Hatim@dot.state.fl.us); or Andy Keith, Aviation Development Administrator at (850) 414-4516 or [Andy.Keith@dot.state.fl.us](mailto:Andy.Keith@dot.state.fl.us). ♦



# Freight Mobility and Trade Plan Update

Working with partners, developing the plan,  
refining FDOT's business practices

The Freight Mobility and Trade Plan (FMTP) seeks to define policies and investments that will enhance Florida's economic development efforts into the future. The Florida Department of Transportation (FDOT) is developing the Freight Mobility and Trade Plan in two elements, the Policy Element and the Investment Element. The Policy Element was adopted June 19, 2013, and addressed all Florida House Bill 599 requirements. The Investment Element will serve to implement the objectives and strategies established in the Policy Element, and is specifically intended to:

- Identify freight needs,
- Identify criteria for state investments in freight,
- Prioritize freight investments across modes, and
- Meet requirements of federal MAP-21.

## Interaction with participants

As part of the development of the plan, FDOT is continuing to rely on significant interaction with you, the stakeholder, and other participants across Florida. The Investment Plan outreach process will include Business Forums I and II, as well as the 2nd Annual Freight Leadership Forum, and webinars as needed to provide updates.

Business Forum I: Plan Development for the FMTP Investment Element was held on October 3, 2013, at the Florida Hotel in Orlando. The main purpose of this event was to go over the process for prioritizing statewide freight investments. Participants were presented a proposed Florida Freight Network, Florida Freight Project Definition, and proposed Florida Freight Project Prioritization Criteria. Stakeholders were able to rate each draft criterion for acceptability and provide comments. In addition, the team developed pre- and post-meeting surveys to allow stakeholders chances to

*Right: Participants at the Business Forum held on October 3, 2013, in Orlando.*

*Below, right: Freight Leadership Forum held on November 18–19, 2013: (from left to right) Chris Hart, CEO, Workforce Florida, Inc.; Ananth Prasad, Secretary, Florida Department of Transportation; and Juan Flores, Administrator, FDOT's Office of Freight Logistics and Passenger Operations. Below: Participants in the Freight Leadership Forum.*



provide additional input and to help us weight draft criteria. All materials and outcomes are available on the website.

## Second annual forum

The 2nd Annual Florida Freight Leadership Forum was held on November 18–19, 2013, at the Renaissance Tampa International Plaza Hotel. The objectives of the 1st Annual Freight Leadership Forum were to call upon the expertise of the executive level in the development of the Freight Mobility and Trade Plan, as well as to provide an opportunity to establish and maintain an active dialogue with members of the business community.

This year, objectives include an opportunity to review how FDOT and our agency partners have responded to valuable input, review statewide freight

planning initiatives and seek validation, and to continue to develop a vision for FDOT to refine its business practices and be more responsive to the needs of our business community. Approximately 60 CEOs, executive directors, and other Florida leaders participated to give FDOT valuable guidance on freight topics and statewide planning initiatives.

## Thank you for input

Thanks to all those who participated; your input is critical to developing an effective plan. The next step is collecting all freight projects that wish to be included in the FMTP Investment Element. FDOT has gathered projects from existing plans and loaded them into a Freight Needs Survey. We will be reaching out to get more information and additional project suggestions very soon.

For more background on the Freight Mobility and Trade Plan, please visit [www.freightmovesflorida.com](http://www.freightmovesflorida.com). ♦

# Guidance on IAP Visual Areas

by Sergey Kireyev

Since October 2013, the Florida Department of Transportation Aviation and Spaceports Office (ASO) has received an increase in questions and concerns regarding airports being notified by the Federal Aviation Administration (FAA) of impacts to Instrument Approach Procedures (IAPs) due to penetrations of the runway's 20:1 visual area Obstacle Identification Surface (OIS). In some cases, the objects cited by the FAA obstruction surveys were several hundred feet left or right of the extended runway centerline.

These actions have received some national attention as more and more facilities were being impacted, which resulted in a release of additional information by the FAA. A memorandum outlining interim policy guidance for mitigation of penetrations to the 20:1 Visual Area Surface was issued to the Office of Airports Safety and Standards and the Flight Technologies and Procedures Division by FAA leadership on November 15, 2013.

## Plan of action

The memorandum outlines a plan of action regarding visual area penetrations based on the severity of such impacts as follows:

- For penetrations that exceed 11 feet above the 20:1 surface (high risk), immediate action to restrict IAP visibility to at least one statute mile (SM) is required. If the obstacle is unlighted, night operations must also be restricted. The plan requires an airport sponsor to submit a plan to remove, light, or lower the obstruction as soon as possible, but no later than 30 calendar days from obstacle validation by the FAA. The implementation of the plan must indicate immediate action to mitigate the surface penetration.
- For verified penetrations that exceed 3 feet and up to 11 feet above the 20:1 surface (medium risk), no immediate action to restrict the IAP is required. However, an airport sponsor must submit a

plan to remove, light, or lower the obstruction as soon as possible, but no later than 30 calendar days from obstacle validation by the FAA. The implementation of the plan must indicate action to mitigate the surface penetration, which takes place as soon as possible, not to exceed 180 calendar days in implementation. If the mitigation action exceeds the prescribed timeframe, appropriate action to restrict the IAP visibility minimums will be taken by the Flight Procedures Team.

- For verified penetrations that are 3 feet or less above the 20:1 surface (low risk), no immediate action to restrict the IAP is required. An airport sponsor must submit a plan to remove, light, or lower the obstruction as soon as possible, but no later than 30 calendar days from obstacle validation by the FAA. The implementation of the plan must indicate action to mitigate the surface penetration, which takes place as soon as possible, not to exceed one year in implementation. If the mitigation action exceeds the prescribed timeframe, appropriate action to restrict the IAP visibility minimums will be taken by the Flight Procedures Team.

## Additional clarification

With the increase in concern from our aviation facility representatives, ASO staff reached out to the Orlando Airports District Office (ADO) staff for additional clarification. The items requiring clarification were as follows:

- What are the dimensions of the visual area surface trapezoid?
- Where is the beginning of the visual area surface?

The Orlando ADO office has reached out for additional information to the FAA Southern Region Flight Procedures Team (FPT), and both offices

**See Guidance, page 8**

## Calendar

*Please contact event organizers before attending in case of cancellation due to weather or other factors.*

### January 16–19, 2014

U.S. Sport Aviation Expo, Sebring Regional Airport (SEF). For more information, see [www.sport-aviation-expo.com](http://www.sport-aviation-expo.com) or contact Jana Filip, Expo Director, at (863) 655-6444 ext. 117.

### February 4, 2014

FAC State Summit in Tallahassee. Florida Airports Council members meet to review FAC's legislative agenda for 2014. For more information, see [www.floridairports.org](http://www.floridairports.org), or call the FAC at (850) 224-2964.

### April 1–6, 2014

SUN 'n FUN International Fly-In & Expo, Lakeland Linder Regional Airport (LAL). For more information, see [www.sun-n-fun.org](http://www.sun-n-fun.org) or call SUN 'n FUN at (863) 644-2431.

### April 16, 2014

CFASPP Statewide Steering Committee Meeting, Orlando International Airport, Carl T. Langford Board Room (tentative). For more information, see [www.cfaspp.com](http://www.cfaspp.com).

### June 9–10, 2014

FABA's 68th Annual Conference and Trade Show, Orlando. For more information, see the website of the Florida Aviation Business Association (formerly FATA) at [www.faba.aero](http://www.faba.aero), or email [info@faba.aero](mailto:info@faba.aero).

*For information about CFASPP, see [www.cfaspp.com](http://www.cfaspp.com).*

# Guidance on IAP Visual Areas

From page 7

provided a timely, exhaustive, and informative response.

## Visual area dimensions

In essence, the area that is the subject of this article, Instrument Approach Procedure (IAP) Visual Area, is the visual portion of the final approach segment—the area which underlies the aircraft flying an instrument approach after the aircraft descends to and below the Decision Altitude/Decision Height (DA/DH). As the Decision Altitude/Minimum Descent Altitude (DA/MDA) is different not only for each runway, but for each IAP, the dimensions of the IAP visual area vary.

Those runways with approach procedures aligned with the extended runway centerline (straight-in approaches) utilize the straight-in visual area criteria. Under those circumstances, the visual area begins 200 feet beyond the Landing Threshold Point (LTP). The width of the

visual area is 200 feet each side of centerline for Category A and B minimums, and 400 feet each side of centerline for Category C, D, and E minimums. The sides of the visual area trapezoid splay outward from the extended runway centerline and the width of the visual area at each distance is calculated by the following formula:

$$\frac{1}{2} \text{ width} = (0.138 \times d) + k$$

where d = distance from visual area origin, measured along extended runway centerline, and k = 200 for Category A/B, and 400 for Category C/D/E.

The length of the straight-in visual area can be estimated using another formula:

$$L = ((\text{HAT} - \text{TCH}) / \tan \text{GS})) - 200$$

where HAT is the IAP Height Above Touchdown, TCH is the IAP Threshold Crossing Height, and GS is the IAP glideslope in degrees.

For those runways having only circling IAP minimums, a standard IAP visual area applies. The visual area begins 200 feet beyond the LTP. The width of the visual area is 200 feet each side of the runway centerline. The sides of the visual area trapezoid splay outward

from the extended runway centerline, and the width of the visual area at each distance is calculated by the following formula:

$$\frac{1}{2} \text{ width} = (0.15 \times d) + 200$$

where d = distance from visual area origin, measured along extended runway centerline.

The length of the standard visual area is 10,000 feet along the extended runway centerline.

The height of the OIS for the visual area is determined by a slope from the visual area's origin. For approaches with visibility minimums of 3/4 of a statute mile and greater, a 20:1 OIS slope is utilized. For approaches with visibility minimums below 3/4 of a statute mile, a 34:1 OIS slope is utilized.

The extent and the technical nature of the FAA's response to our inquiry is far beyond the scope of this article, and this material presents a slightly simplified version of the response. If you have any additional questions about this material, please contact Sergey Kireyev, FDOT ASO Airspace and Land Use Manager, at (850) 414-4502 or Sergey.Kireyev@dot.state.fl.us. ♦

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