

SOUTHWEST FLORIDA INTERNATIONAL AIRPORT

Noise Compatibility Program
2018 Post Study Update and Status of FAA Initiatives

Prepared for
Lee County Port Authority

2014 Original
Revised - September 2018



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4200 West Cypress Street
Suite 450
Tampa, FL 33607
813.207.7200
www.esassoc.com

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SOUTHWEST FLORIDA INTERNATIONAL AIRPORT

Noise Compatibility Program – 2018 Post Study Update and Status of FAA Initiatives

1.0 Introduction

This report provides an update of the implementation status of the Noise Compatibility Plan (NCP) recommendations outlined in the 2013 14 Code of Federal Regulations (CFR) Part 150 Noise and Land Use Compatibility study (2013 Part 150 Study) conducted for Southwest Florida International Airport. Specifically, it provides an overview of the 2013 Part 150 Study process and recommendations, the resulting FAA determination, the current implementation status of those recommendations, and the next steps and time lines for implementation. For those measures already implemented, attempts are made to either quantitatively or qualitatively identify the net benefit provided. This report, originally prepared in 2014, has been updated to reflect conditions as of May 2018.

2.0 RSW Noise Abatement and Part 150 Background

The aircraft noise abatement program at RSW has evolved continually since the airport's opening in 1983. An initial noise abatement program was established shortly after opening of the airport and has evolved through periodic updates at various milestones in the airport's development. In order to address the potential for continued encroachment of residential development and other noise sensitive uses, a 14 CFR Part 150 Noise Study was prepared in the late 1980s. A key feature of the resulting noise compatibility program was the establishment of a Noise Overlay Zone encompassing the lands surrounding the airport. The limits of the overlay zones were largely based on noise contours associated with the one runway facility.

A Master Plan for RSW, prepared in 1986, identified the future need for a second runway. Following the environmental approval of the new runway in 1994, a 1995 14 CFR Part 150 update expanded the overlay zones to incorporate areas that would be affected by aircraft activity on the new runway. The 1995 Noise Compatibility Program also included additional noise abatement operational measures/ procedures. A 2006 14 CFR Part 150 Study Update included further refinements to the overlay zone including limiting noise sensitive land uses within the 60 DNL contour and establishing a public notification area within the 55 DNL contour. Refinements to operational procedures since the implementation of the initial measures to address San Carlo

Park have included measures to address concerns in the communities of Gateway, Fort Myers Beach and Fiddlesticks, among others.

The 14 CFR Part 150 study process is the only formal process available to an airport sponsor to address noise and land use compatibility concerns between an airport and the surrounding community. The process is voluntary in nature, but codified in federal regulations (CFR Title 14, Part 150).

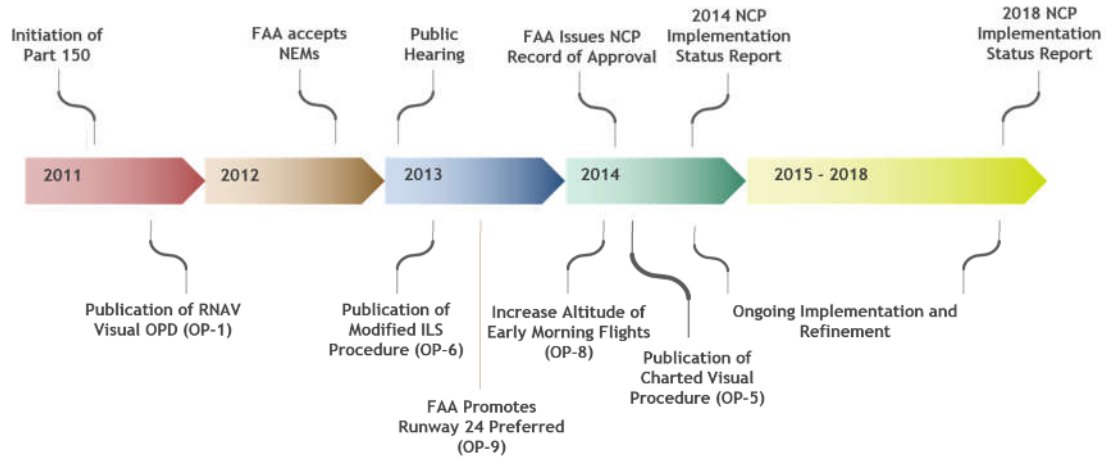
21 2013 Part 150 Study Update

In 2011, the Lee County Port Authority (LCPA) began an update to the 2006 14 Code of Federal Regulations (CFR) Part 150 Noise and Land Use Compatibility study for Southwest Florida International Airport (RSW). The study was completed in 2013 (2013 Study) and the FAA issued its Record of Approval in 2014. Changes that occurred since the completion of the 2006 Part 150 study include:

- FAA implementation of the Florida West Coast Airspace Redesign or FLOWCAR.
- Opening of the midfield terminal complex and introduction of air carrier service by Southwest Airlines.
- Changes in aircraft operational levels, forecast activity and fleet mix.
- Modification and adjustments to arrival and departure procedures.
- Implementation of new technology and resulting operational procedures.
- Implementation of PASSUR™ based financial management system which provides improved aircraft fleet tracking/accuracy.
- New concerns raised by communities including those along the Estero corridor, Fort Myers Beach and the Forest.
- Lee County Comprehensive Plan policy that requires update of the noise exposure conditions around the airport every five years.

Throughout the course of the 2013 Study, numerous workshops and meetings were held with key stakeholders including concerned citizens and the FAA. The two phase study first evaluated aircraft noise exposure through development of Noise Exposure Maps (NEMs) then evaluated measures to improve land use compatibility through development of a Noise Compatibility Program (NCP). The FAA officially accepted the updated NEMs in November 2012. A public hearing on the NCP was held in January 2013 and the FAA issued its formal Record of Approval (ROA) in April 2014.

General Timeline of Major 2013 Part 150 Milestones



22 Part 150 Noise Exposure Maps Overview

In 14 CFR Part 150, the FAA required primary metric for assessing aircraft noise exposure is the Day-Night Average Sound Level (DNL). The DNL combines the noise energy from all aircraft operations occurring from the events in one day into an average, while applying a penalty to nighttime events, between the hours of 10:00 pm and 6:59 am, when people are more sensitive to sound. The standard methodology for analyzing the noise conditions at airports involves the use of an aircraft noise model to determine noise exposure. The FAA has approved the Integrated Noise Model (INM) for use in 14 CFR Part 150 Studies. In order to develop DNL noise contours, the INM uses a series of input factors. Some of these factors are included in the database for the model (such as engine noise levels, thrust settings, aircraft profiles and aircraft speeds) and others are airport-specific and need to be determined for each condition analyzed. These airport-specific data include the airport elevation, average annual temperature, runway layout, the mathematical description of ground tracks above which aircraft fly, and the assignment of specific aircraft with specific engine types at specific takeoff weights to individual flight tracks. Other INM input factors specific to RSW include:

- Runway orientation and use
- Existing 2011/2012 aircraft operations and fleet mix
- Projected 2017 aircraft operations and fleet mix
- Time of day/night operations
- Stage lengths of aircraft (flight distance)

DNL levels are indicated by a series of contour lines superimposed on a map of the airport and off-airport environs. These levels are calculated for designated grid points on the ground from the weighted summation of the effects of all aircraft operations occurring on the average 24-hour day. Some operations are far enough away from a grid point location that their effect is minimal, while

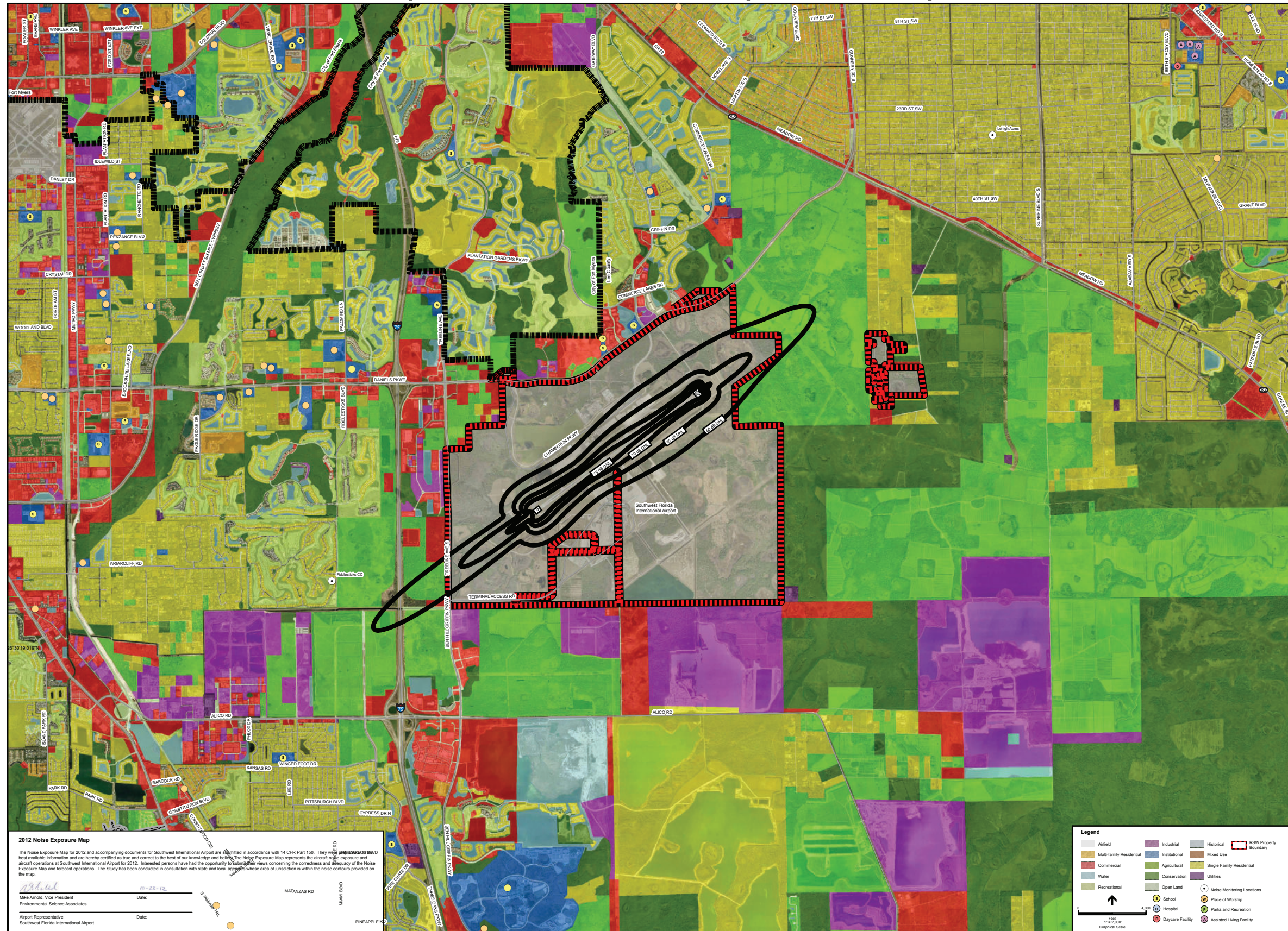
other operations may dominate noise exposure at that location. The RSW 2012 existing and 2017 projected NEMs were formally accepted by the FAA on November 27th, 2012.

The FAA defines noise sensitive sites as uses within the 65 DNL that would be incompatible with aircraft noise without the proper Noise Level Reduction (NLR). Such sites would include residences, schools, places of worship, hospitals, passive parks, historic properties and other uses that could be adversely affected by aircraft noise. Outside the 65 DNL contour, all land uses are considered compatible with aircraft activities. Since the 65 DNL limits remain on Airport property for both the 2012 and 2017 conditions, no population or noise sensitive sites are located within the 65 DNL or higher for 2012 or 2017 (see **Figures 1 and 2**).

23 Leveraging the Part 150 Process

While there are no impacts to noise sensitive uses within the highest noise areas, the LCPA Board/Board of County Commissioners (BCC) recognizes that there are still community concerns and annoyance associated with the operation of the Airport. As a result the LCPA committed to using the 14 CFR Part 150 process to explore potential operational modifications, update its existing long term land use compatibility measures, and explore management measures to enhance its near term and long term relationship with the surrounding communities.

Map A - 2012 Noise Exposure Map



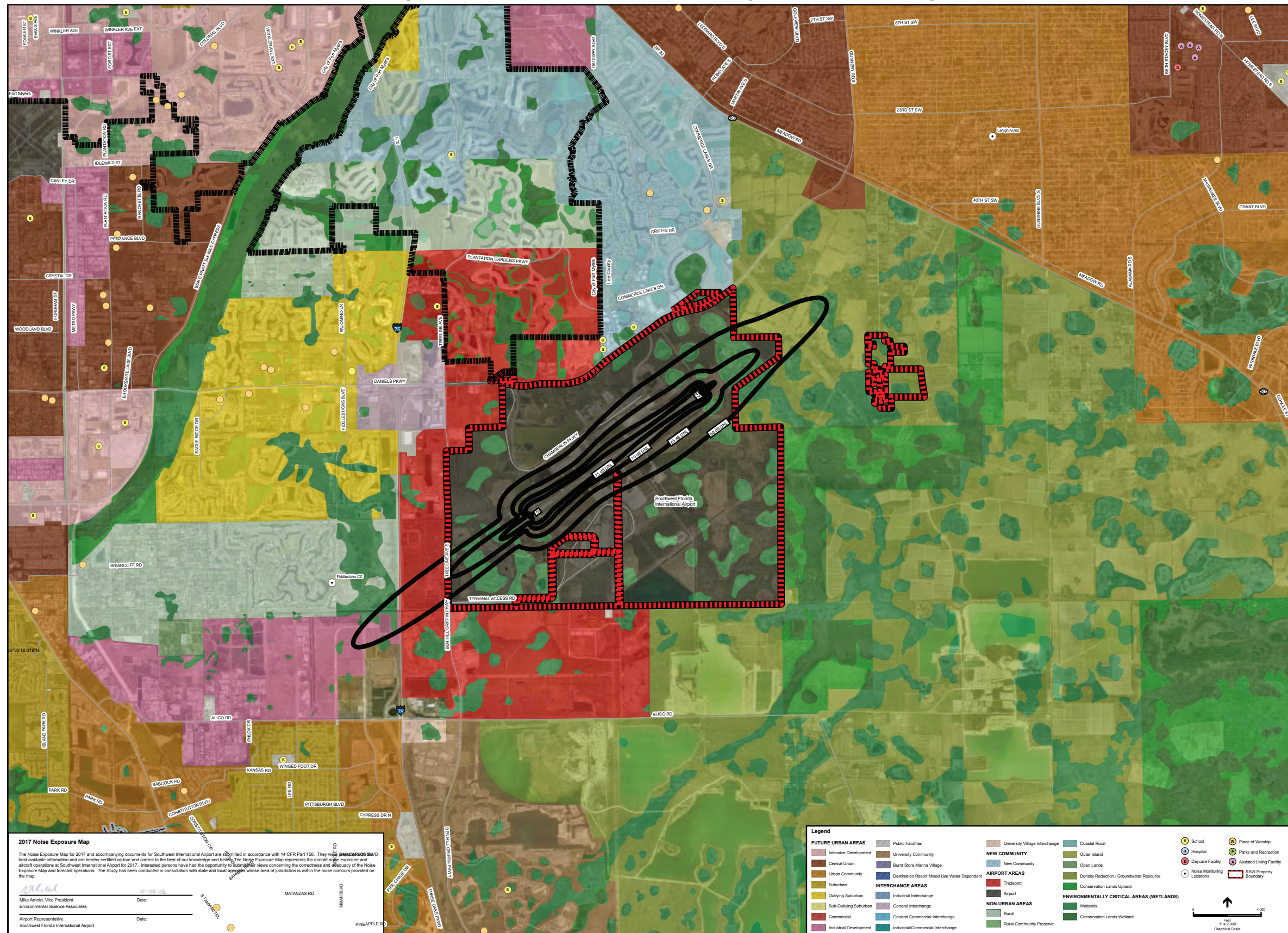
SOURCE: ESA Airports, 2012; INM 7.0c; Lee County GIS Department

Southwest Florida International Airport NCP Implementation Technical Memorandum .210140

Figure 1
Map A - 2012 Noise Exposure Map

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Map B - 2017 Noise Exposure Map



SOURCE: ESA Airports, 2012; INM 7.0c; Lee County GIS Department

Southwest Florida International Airport NCP Implementation Technical Memorandum .210140

Figure 2

Map B - 2017 Noise Exposure Map

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3.0 Noise Compatibility Program Overview

The purpose of 14 CFR Part 150 Study is to reduce or eliminate noise-sensitive land uses within the 65 dB DNL contour. Traditionally, 14 CFR Part 150 Studies use the DNL metric for evaluating measures in the Noise Compatibility Program (NCP) portion of the Study. Since noise-sensitive land uses do not exist within the existing (2012) or projected (2017) 65 dB DNL contours, the NCP portion of the Study focuses on measures that will reduce noise levels to local communities whom receive the bulk of aircraft overflights and have the greatest potential for annoyance. Measures evaluated include those that are not approvable for the purposes of Part 150 (reduction in impacts within the 65 dB DNL contour cannot be demonstrated), but can be implemented voluntarily at the local level subject to the discretion of the FAA ATC.

Evaluation of NCP measures for RSW adhered to the following criteria:

Develop a balanced and cost effective program for reducing noise without limiting airport utility, aviation efficiency, or adversely affecting safety.

Improve the overall noise environment, while not shifting noise from one community to another.

NCP measures must be technically and legally feasible, and approved by the FAA (flight procedures) and local governments (land use measures).

Measures subject to 14 CFR Part 161 evaluation will not be part of the Study recommendations¹.

On April 7, 2014 the FAA issued its ROA, as shown in **Appendix A**, which formally approved 5 of the 16 proposed action measures as follows:

All 10 of the operational measures were disapproved for the purposes of Part 150. Since there are no incompatible land uses within the 65 dB DNL contour, noise benefits related to the 65 dB DNL contour cannot be demonstrated. These measures can be pursued on a voluntary basis subject to the discretion of local air traffic control (ATC).

The single land use measure was disapproved for the purposes of Part 150. The land use measure uses a long term composite contour representing the existing single runway operating at 85 percent capacity combined with a future two runway configuration operating at 2030 activity levels. While composite contours are useful in land use planning, their use is no longer being approved for the purposes of Part 150.

All 5 of the program management measures were approved.

3.1 Status of NCP Measures

In late 2017, the LCPA began a series of meetings with the Fort Myers Beach and Estero communities and RSW FAA TRACON and ATC management to review the status of implementation actions detailed in the 2014 post study implementation report. As of the completion of this (2018) status update, 9 of the 16 measures recommended in the NCP have been fully implemented, one measure has been partially implemented, one measure has been determined infeasible for implementation, and one measure has been determined no longer

¹ 14 CFR Part 161 along with the Airport Noise and Capacity Act of 1990 (ANCA) outlines the process for implementing aircraft noise and access restrictions. Although a number of airports have initiated the Part 161 process, only one such action (Naples) has been approved by the FAA in the 28 years since the act was passed.

effective and is not being pursued. The disposition of each measure is summarized in **Table 1** and changes since the 2014 status update are noted.

For each of the operational, land use and program management measures included in the NCP, a more detailed description highlighting the intent of the measure, the current disposition, benefits already achieved and next steps is provided in the following sections.

**TABLE 1
NCP DISPOSITION SUMMARY
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NCP Measure	FAA Determination	Implementation Status	Change Since 2014 Post Study Update	Next Steps	
<u>Operational</u>					
OP-1	Promote Use of RNAV Visual Optimized Profile Descent to Runway 06	Disapproved for purposes of Part 150	Implemented	Most airlines have now been certified to fly the approach with exception of Air Canada. ATC vectoring initiated to replicate procedure.	No further action
OP-2	Explore Feasibility of Initiating RNAV Optimized Profile Descent Further From the Airport	Disapproved for purposes of Part 150	Not Yet Implemented Feasibility Pending National Testing	FAA is in process of testing similar procedures and refining implementation of NextGen	Continue to monitor NextGen progress
OP-3	Explore Feasibility of Raising the Downwind Altitude to Runway 06	Disapproved for purposes of Part 150	Feasibility Coordination Implemented Not Feasible based on review with FAA	Verified that this measure is not feasible	No longer being pursued
OP-4	Shift Downwind Flight Track to the South	Disapproved for purposes of Part 150	To be Implemented Concurrent with Future Parallel Runway	No Change	No further action until implementation of parallel runway
OP-5	Publish Charted Visual Approach to Runway 6 from the North and South	Disapproved for purposes of Part 150	Implemented – Updated Procedure published October 16, 2014	Procedure was further refined. ATC vectoring implemented to replicate procedure	No further action
OP-6	Keep Aircraft at 3,000 Ft. Over Fort Myers Beach	Disapproved for purposes of Part 150	Implemented – Procedure published May 2, 2013, verbal directives issued mid 2013	Incorporated into FAA’s RSW ATC Standard operating procedures and published in the Airport Facilities Directory	Work with FAA to explore feasibility of increasing Runway 6 RNAV altitudes
OP-7	Delay Point at which Aircraft Lower their Landing Gear	Disapproved for purposes of Part 150	Not Yet Implemented	No Change	Promote with airlines
OP-8	Increase Altitude for Early Morning Arrivals	Disapproved for purposes of Part 150	Implemented – Reflected in Miami Center’s Standard Operating Procedures (SOP)	Incorporated into FAA Miami Center’s SOP	No further action
OP-9	Change Runway 24 to Preferred Runway From 10:00 PM – 6:00 AM	Disapproved for purposes of Part 150	Implemented – Tower began promoting with controllers on August 1, 2013, Included in Tower SOP	Incorporated into RSW ATC SOP and Published in the FAA’s Airport Facilities directory	No further action
OP-10	Modify CSHEL FOUR Departure Procedure	Disapproved for purposes of Part 150	Partially Implemented	Implemented through verbal directives	Modification no longer being pursued
<u>Land Use Measures</u>					
LU-1	Update Noise Overlay Zones	Disapproved for purposes of Part 150	Implemented – Comprehensive Plan Amendment effective November 18, 2016 and Land Development Code Amendment effective November 23, 2016	Implemented	No further action
<u>Program Management</u>					
PM-1	Noise Compatibility Program Management	Approved	Implemented	LCPA has implemented the program	Continue management of program
PM-2	Update Noise Program as Mandated by Lee Plan	Approved	Implemented	LCPA periodically reviews changes to determine if update is required	Continue periodic review
PM-3	Noise Forums with RSW Air Traffic Controllers	Approved	Implemented	LCPA conducts periodic meetings with FAA to Discuss noise	Continue periodic meetings
PM-4	Develop a Jeppesen Insert on Noise Abatement Program at RSW	Approved	Not Yet Implemented	Action no longer effective	No longer being pursued
PM-5	Install Runway End Reminder Signs	Approved	Not Yet Implemented	No change	Monitor adjacent projects and funding

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3.2 Operational Measures

OP-1. Promote Use of RNAV Visual Optimized Profile Descent (OPD) to Runway 06

Description: This measure promotes use of an RNAV Visual OPD procedure that directs aircraft arrivals over unpopulated areas between the mainland and Estero Island (Fort Myers Beach). Recent advancements in technology and flight procedures that combine the precision of instrument navigation with visual references allow aircraft to approach the airport in a constant descent and reduced engine thrust setting while also flying a precise path over more compatible land uses. During completion of the 2013 Study, an RNAV Visual Optimized Profile Descent (OPD) to Runway 06 was introduced by the FAA and Southwest Airlines. RSW's RNAV Visual OPD to Runway 06 routes aircraft off of the SHFTY TWO RNAV Arrival and the TYNEE ONE RNAV Arrival over the back bay waters to the east of Fort Myers Beach as shown in **Figure 3**.

Benefits: This procedure reduces overflights of populated areas including Fort Myers Beach and reduces thrust setting when overflying communities such as Estero. It also shortens aircraft flight paths and fuel consumption, noise, and emissions by maintaining a reduced power (idle) approach

FAA's Record of Approval Decision: "Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour." This measure can be pursued at the local level on a voluntary basis subject to the discretion of local air traffic control.

Current Disposition: Implemented. This procedure was published November 11, 2011 and actively promoted with airlines by the FAA on August 20, 2012. As of November 2017, nearly all airlines have been certified to fly the approach with the exception of Air Canada. There have been a number of challenges in implementing this procedure. This special procedure was originally only available if requested by a pilot. In efforts to increase its use, the availability of the procedure was advertised by ATC on the Automatic Terminal Information Service (ATIS). This resulted in approximately 4-5 aircraft using this approach per day. The ATC staff was then allowed to assign this procedure in efforts to increase use, but required the controllers to know if the aircraft and the pilot were certified to fly the approach. Because of the logistical challenges of knowing this, pilots are now required to request the procedure. ATC noted that use of the procedure remains relatively limited. In October 2017, FAA implemented procedures to allow the vectoring of aircraft through the back bay. While there is less control over the altitude and exact location of aircraft, vectoring is conducted with the same goal of minimizing overflights of populated areas by routing aircraft through the back bay. This has been successful in reducing the number of overflight over Fort Myers Beach. However, due to the less precise nature of vectoring and variations in where aircraft initiate their turn, aircraft have the potential to travel over Fort Myers Beach at a lower altitude.

Effectiveness: **Figure 4** identifies the track locations and aircraft altitudes for the published procedure based on FAA tests. This special procedure requires airline certification, pilot and controller training and properly equipped aircraft and must be requested by the pilot. While there has been considerable interest from both the ATC and airlines in using this approach, it is not yet

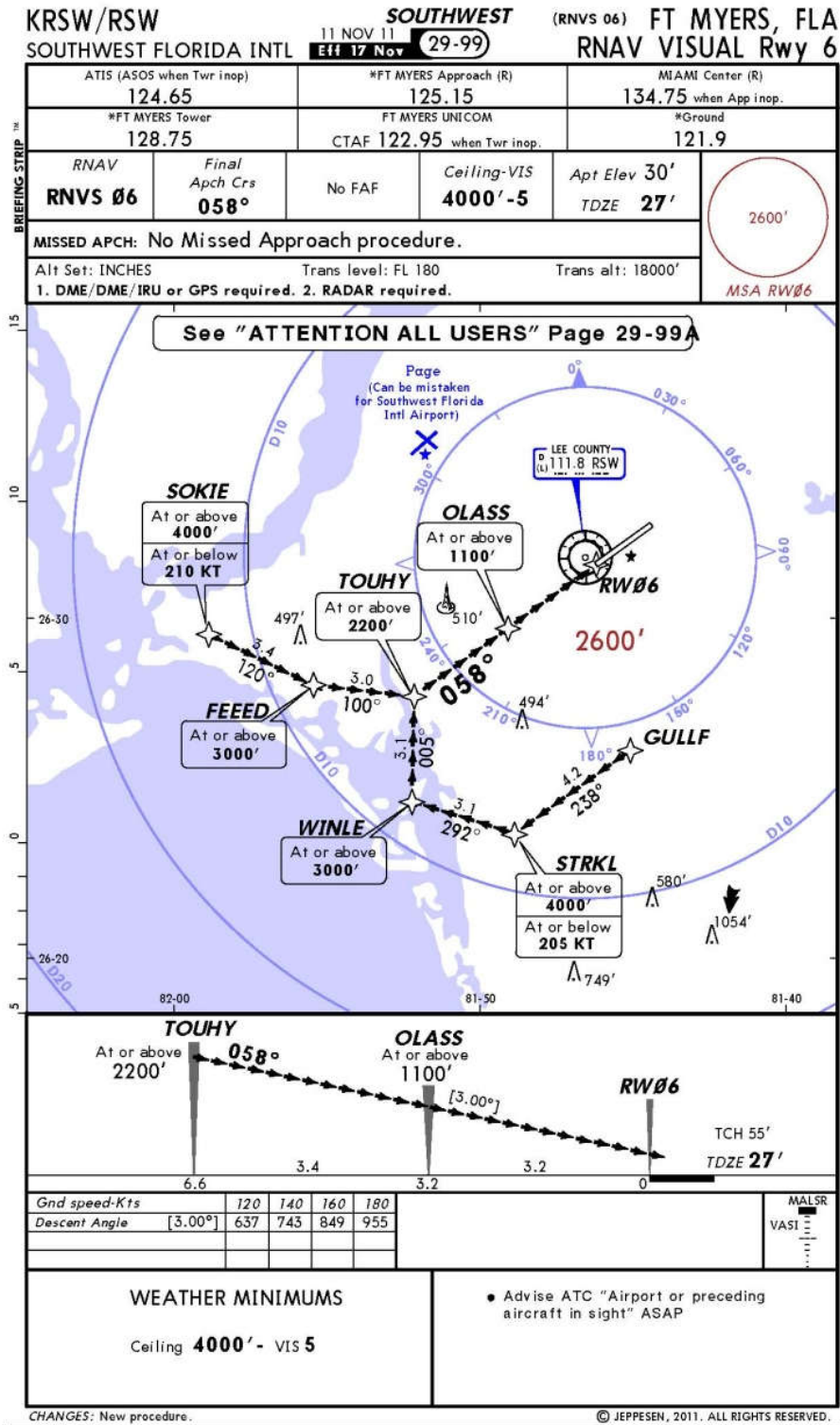
widely used. Aircraft that are not capable of flying the approach typically fly the entire SHFTY TWO or TYNEE ONE arrival procedures out over Fort Myers Beach. This in turn creates spacing issues with aircraft that can fly the approach which reduces the amount of time it can be used. In 2017, the FAA implemented vectoring of aircraft through the Back Bay which may help mitigate these spacing concerns.

As these types of approaches become more common, use of this procedure is expected to increase. However, utilization of this procedure will be limited during busy periods, when the sequencing of aircraft from both the north and south arrival streams requires aircraft to fly extended final approach paths to ensure adequate separation. This measure should become more prevalent moving forward and is contingent on controller training, airline certification, and pilot proficiency.

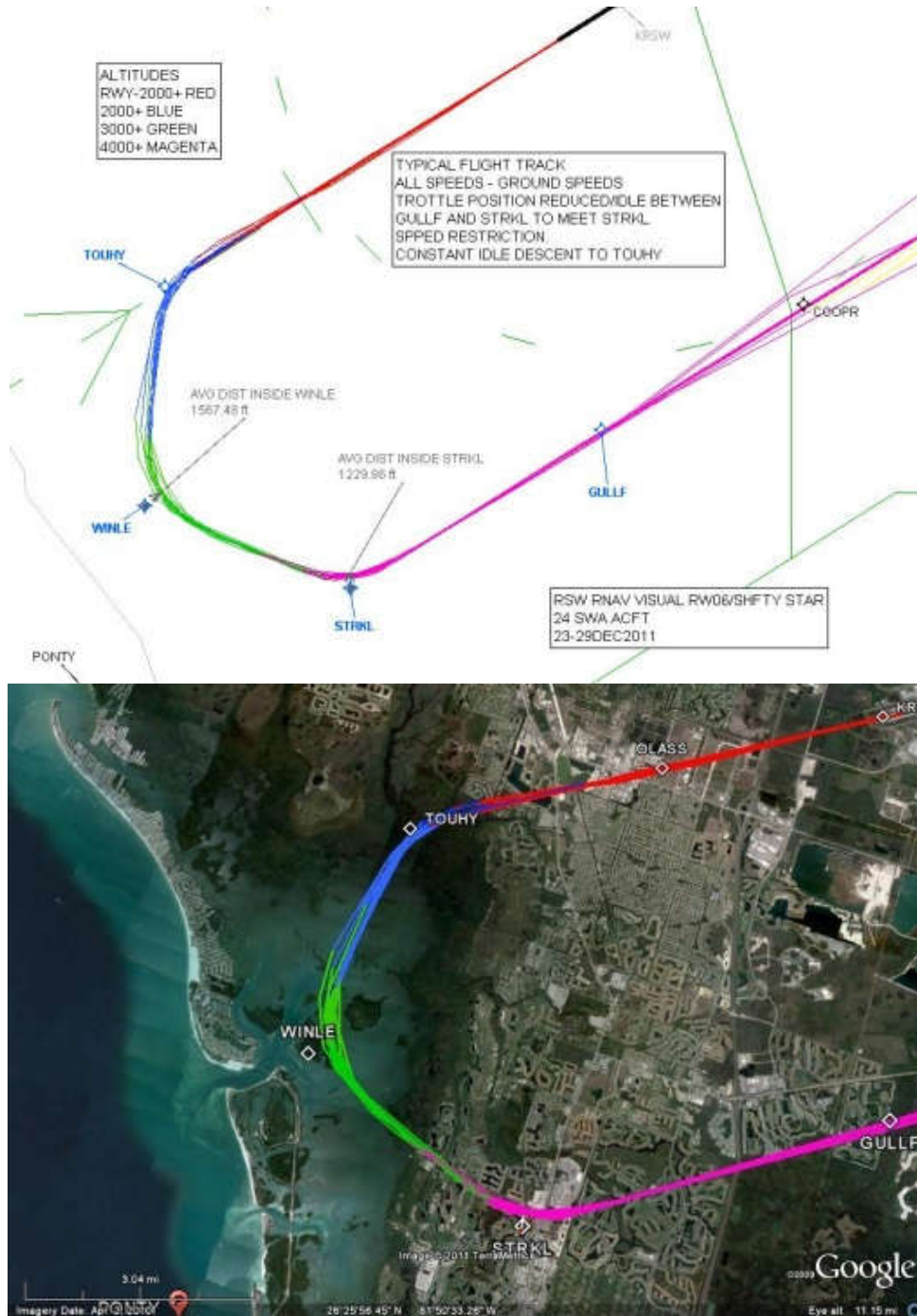
Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC, the pilot in command and the airlines.

Next Steps and Timeline: The LCPA should continue to work with ATCT to promote to airlines and pilots as part of its overall noise abatement program.

FIGURE 3
RNAV VISUAL OPTIMIZED PROFILE DESCENT



**FIGURE 4
AIRCRAFT TRACKS AND ALTITUDES RNAV VISUAL OPD**



Source: FAA

OP-2. Initiate RNAV Optimized Profile Descent Further From the Airport

Description: This measure involves implementation of an RNAV OPD procedure to transition aircraft when they are further from the airport to the airport environment while maintaining a reduced engine thrust setting. OP-2 builds and extends the benefits of measure OP-1.. The FAA is currently testing procedures that result in operational and noise benefits further from the airport and begin at higher altitudes. Currently aircraft level-off over communities on the south downwind approach over Estero. This leveling off requires the pilots to add thrust which generates more noise. By initiating RNAV OPD and/or constant descent approaches at RSW at a greater distance from the airport, greater benefits can be achieved from the new technology. **Figure 5** compares a traditional approach to an OPD approach. This measure recommends monitoring the progress of FAA testing and evaluating the feasibility of implementing the initiation of RNAV OPD procedures further from the airport.

Benefits: This procedure reduces thrust setting when overflying communities such as Estero. It also increases the fuel efficiency by maintaining a continuous descent (idle) approach from a much higher altitude much further from the airport and reduces noise and emissions. This increased fuel efficiency provides even more of an incentive of airlines to use and promote the use of these procedures.

FAA’s Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local air traffic control.

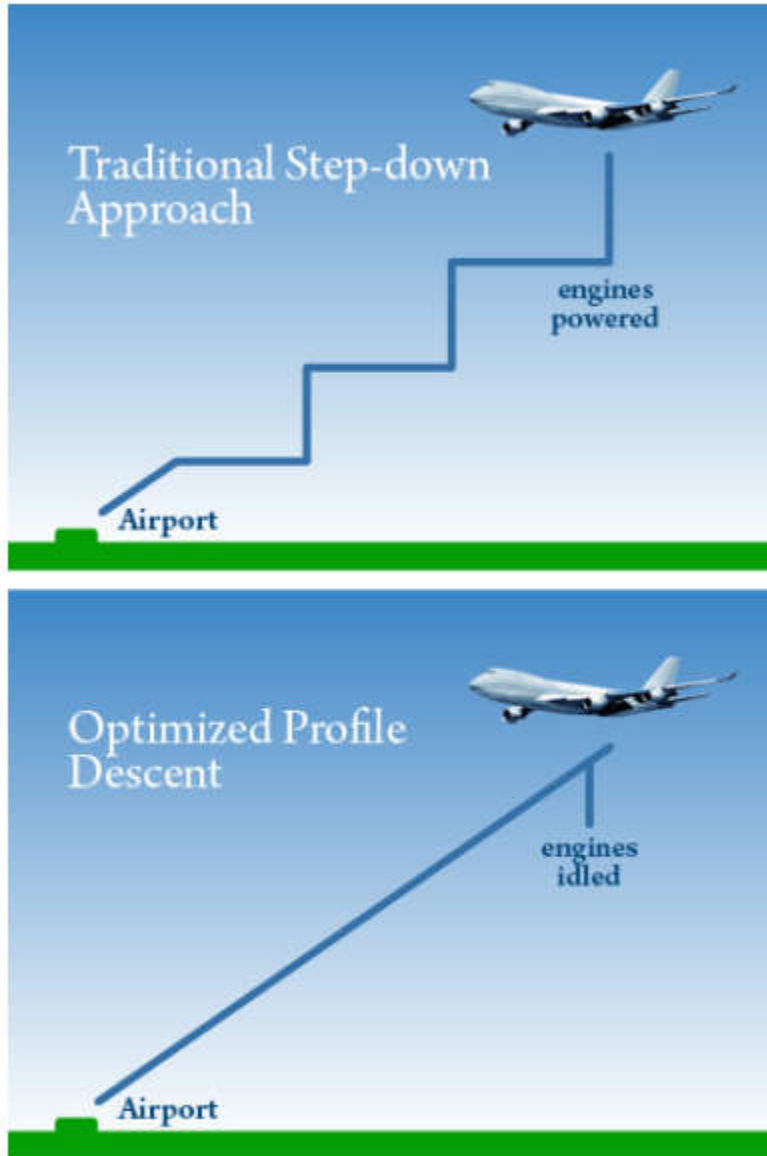
Current Disposition: Not yet implemented. As part of the FAA’s NextGen program, a goal is to sequence the enroute phase of flight with the arrival and landing phase so that aircraft perform arrivals and approaches in a continuous descent to the airport. Implementation of OPD arrivals connecting the enroute phase of flight to the arrival phase is still being evaluated by the FAA.

Effectiveness: To be determined. Progress and feasibility will depend on FAA, but it is estimated that OPD arrivals will become more common throughout the country as older aircraft are retired and newer aircraft with more sophisticated flight management systems continue to transition into the fleet.

Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC and the pilot in command.

Next Steps and Timeline: The LCPA should continue to review feasibility during its regular check-ins with FAA .

FIGURE 5
TRADITIONAL VERSUS OPD ARRIVAL FLIGHT PROFILES



Source: FAA

OP-3. Raise the Downwind to Runway 06

Description: This measure involves increasing the altitude of aircraft the SHFTY RNAV arrival to Runway 06 during the downwind approach segment as they pass south of the airport. A RNAV arrival procedure to Runway 06 (SHFTY) that was implemented as part of FLOWCAR resulted in a considerable increase in the volume of overflights experienced by residential areas south of the airport. The procedure concentrates flights to a very narrow path over communities in the Estero area, known as the Estero Corridor, that previously (prior to FLOWCAR) only occasionally experienced overflights. Concurrent with the initiation of the 2013 study, the altitude of the downwind approach was raised from 3,000 ft. to 4,000 ft. The purpose of this measure is to evaluate the feasibility of further increasing the altitude from 4,000 ft. to 5,000 ft. and if determined feasible, proceed with implementation.

Benefits: Increasing the aircraft altitudes as they overfly residential communities may help reduce the annoyance of the overflights. An increase in the altitude of the south downwind approach to 5,000 ft. over the Estero Corridor results in an estimated reduction in noise ranging between 1.9 and 2.5 decibels according to the INM. Figure 6 shows the reduction in the noise 70 dB noise exposure footprint that would result from an increase in altitude from 4,000 ft. to 5,000 ft for a Boeing 737-700 aircraft.

FAA’s Record of Approval: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local ATC.

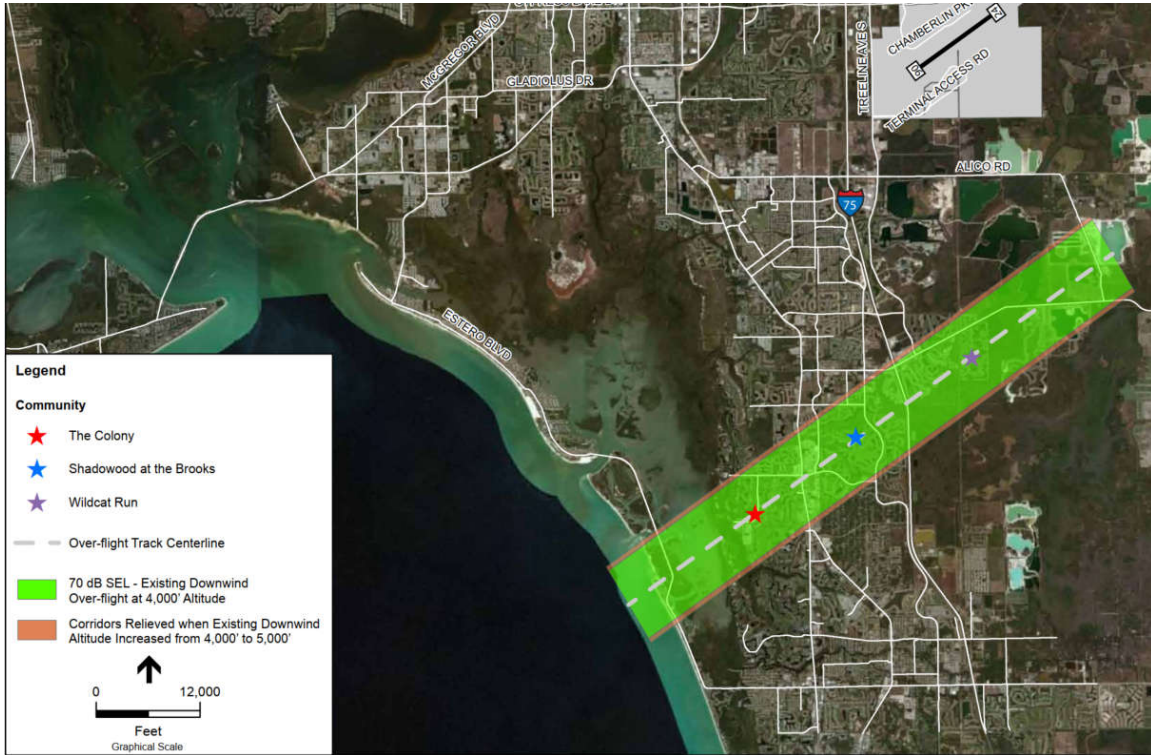
Current Disposition: Feasibility evaluation implemented. Based on discussions with the FAA, this measure is not currently feasible. Specifically, FAA safety concerns were raised related to the sequencing of aircraft, the 4,000 ft. MSL Class C airspace ceiling and separation requirements with the jet departures from Naples Airport (APF) that overfly the downwind at 5,000 ft. MSL.

Effectiveness: A 3-5 decibel change is generally required to be noticeable in the community, As a result the noise benefit of this change would provide limited noticeable benefit.

Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC and the pilot in command.

Next Steps and Timeline: No further action by the LCPA is anticipated at this time. This action is no longer being pursued.

FIGURE 6
REDUCTION IN B737-700 70 dB SEL FOOTPRINT FROM RAISING DOWNWIND TO 5,000 FT



OP-4. Shift Downwind Flight Track to the South

Description: This measure involves a shift of the downwind flight corridor to the south concurrent with construction of the new parallel runway. Citizens that live along the Estero Corridor noted that there are more compatible land uses to the south of the corridor that could be utilized by aircraft flying the south downwind approach. However, a shift in the location of the downwind flightpath would result in exposure of new communities to aircraft overflights and increase the flight distance without a specific operational need. A second parallel runway is planned for construction approximately 5,000 ft south of the current Runway 06-24 (**Figure 7**). This will likely create an operational need to shift the current arrival flight paths approximately one mile south.

Benefit: In moving the downwind approach one mile further south, there is an average decrease of 7.2 decibels for the communities located along the Estero Corridor. While there is a similar increase in noise for the new communities that did not previously experience direct overflights, the number of people exposed to the shifted flight path is estimated to be roughly half those currently overflown.

FAA’s Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local air traffic control.

Current Disposition: To be implemented by the FAA concurrent with construction of the future parallel runway. The FAA has noted that changes in procedure design may result in a shift in the downwind further south in advance of construction of the new runway. Specifically, the downwind flight path may shift from 5 miles south of the airport to 5.8 miles south to address RNAV procedure design changes. Completion timeline for the new runway is subject to future demand and is not currently known.

Effectiveness: To be determined When parallel runway is constructed.

Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC and the pilot in command.

Next Steps and Estimated Timeline: No further action by the LCPA is anticipated until implementation of the parallel runway..

**FIGURE 7
FUTURE SOUTH PARALLEL RUNWAY**



OP-5. Publish Charted Visual Approach to Runway 06 from the North and the South

Description: This measure involves the FAA publishing a procedure that identifies visual landmarks to assist pilots flying under visual flight rules to avoid flying over non-compatible land uses. By publishing charted visual approaches that all aircraft can fly when certain weather conditions permit, more compatible land uses can be taken advantage of. Using this procedure to mirror or overlay the new RNAV Visual OPD approach will improve sequencing and allow the ATCT to use the RNAV Visual OPD procedure more consistently.

Benefit: This procedure will help to reduce overflights of Fort Myers Beach during visual flight conditions.

FAA’s Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local ATC.

Current Disposition: Implemented. The Bay Visual Approach to Runway 06 was published by the FAA on May 9, 2014 as shown in **Figure 8** and was updated May 29, 2014 as shown in **Figure 9**. The current version of the procedure was published on May 24, 2018 (**Figure 10**).

Effectiveness: This type of procedure is new for RSW and since pilots fly this procedure based on visual cues, this procedure is not authorized at night. Utilization of this procedure is also limited during busy periods, when the sequencing of aircraft from both the north and south arrival streams requires aircraft to fly extended final approach paths to ensure adequate separation. While the FAA initially believed this measure could result in a meaningful reduction in overflights of Fort Myers Beach during daytime VFR conditions, it is rarely used. RSW ATCT staff indicate that the new vectoring procedures incorporated into the SOP in October 2017 allow greater control of aircraft while meeting the goals of the charted visual procedure.

Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC and the pilot in command.

Next Steps and Estimated Timeline: Work with ATCT to promote to airlines and pilots as part of overall noise abatement program.

FIGURE 8
RUNWAY 6 CHARTED VISUAL APPROACH – Published May 9, 2014

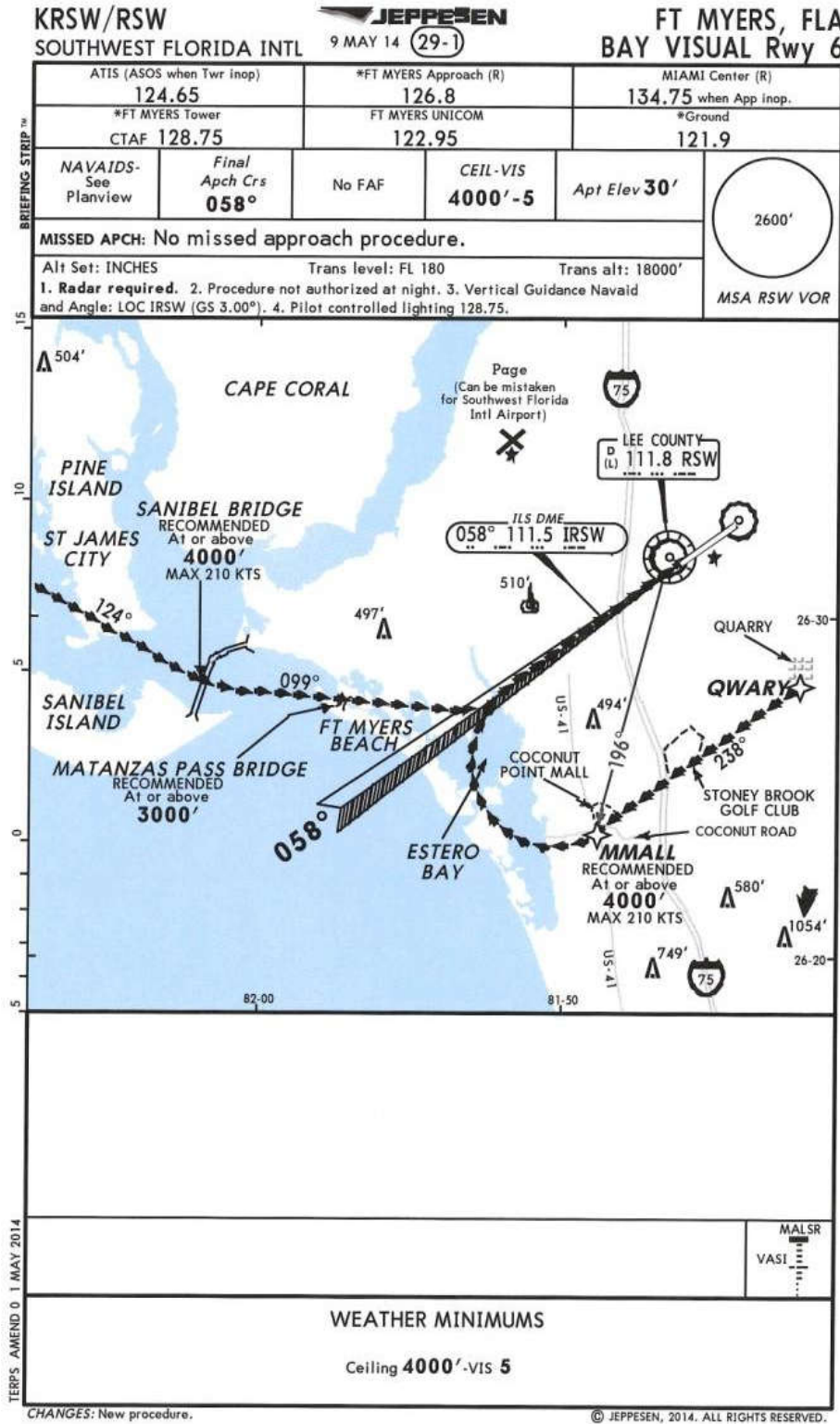


FIGURE 9
RUNWAY 6 CHARTED VISUAL APPROACH – Published May 29, 2014

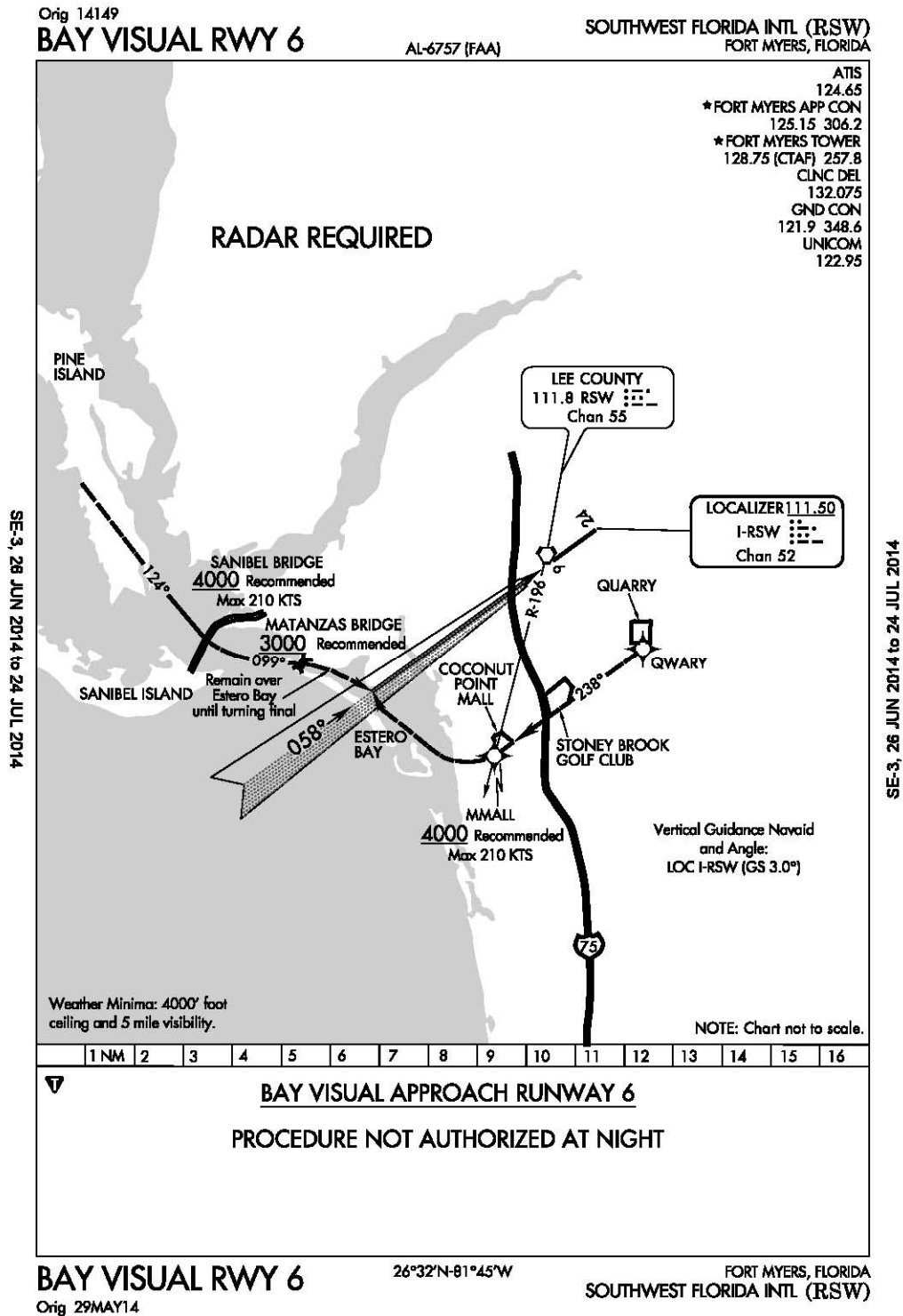
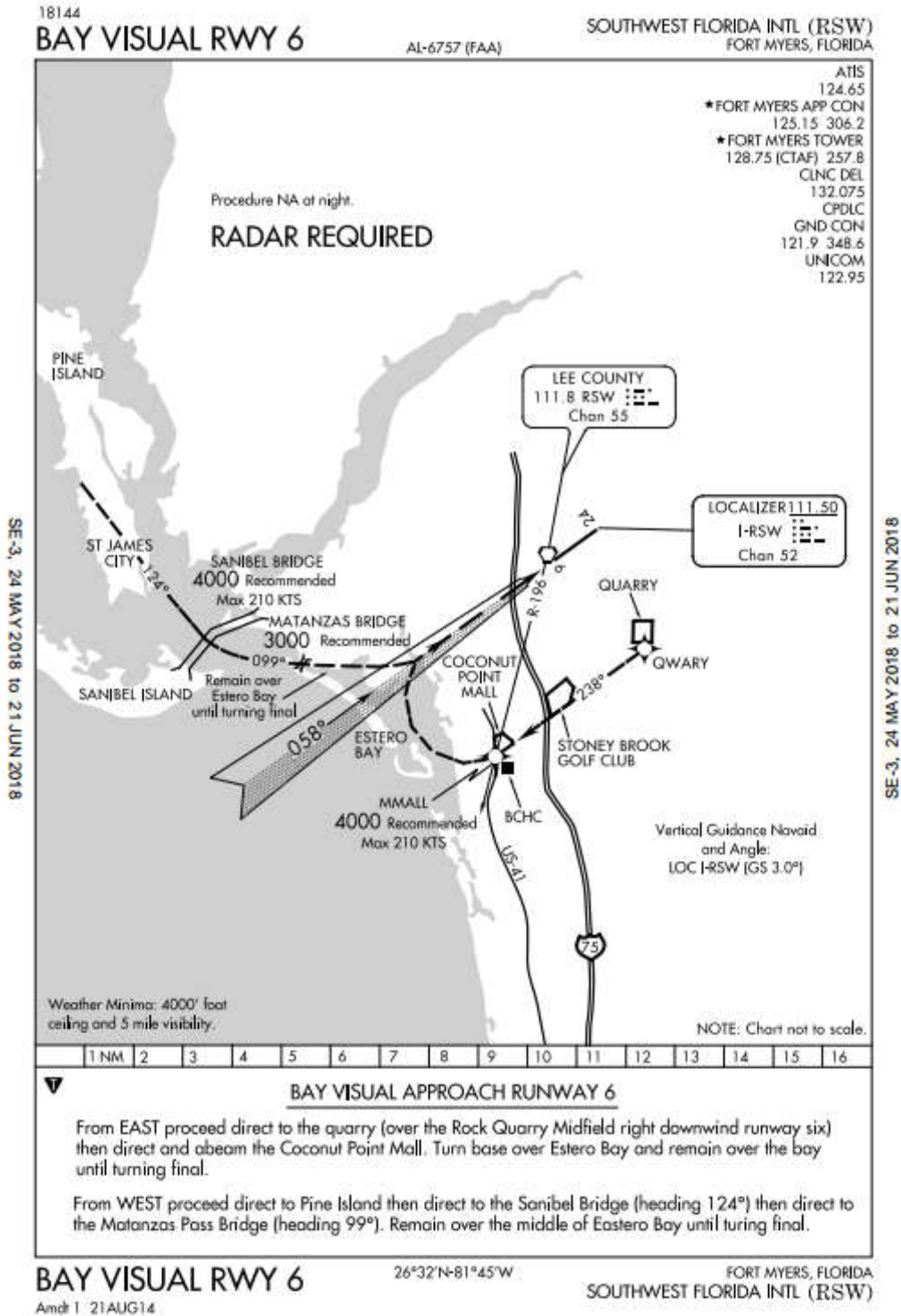


FIGURE 10
RUNWAY 6 CHARTED VISUAL APPROACH – Published May 24, 2018



OP-6. Keep Aircraft at 3,000 Ft. Over Fort Myers Beach

Description: This measure is consistent with a previously approved voluntary measure from the 2006 14 CFR Part 150 Study to “Keep ‘em High”. The previous measure was revisited to explore mechanisms to improve its effectiveness. When the 2013 14 CFR Part 150 Study was initiated (2011), the Instrument Landing System (ILS) arrival procedure had a minimum glide slope intercept altitude of 1,600 ft. MSL as shown in **Figure 11**. The designation resulted in aircraft descending to that altitude well in advance of intercepting the glide slope. A significant number of comments were received at the public workshops held during the 2013 Study from citizens of the Fort Myers Beach (also referred to as Estero Island) community concerning aircraft arrival overflights that are low and noisy at a distance of approximately 10 nautical miles from the approach end of Runway 06. It is the intent of this measure to implement mechanisms to delay the descent of arriving aircraft and maintain an altitude of up to 3,000 feet until after they overfly Fort Myers Beach.

In an effort to keep aircraft at 3,000 ft. MSL over Estero Island, the Town of Fort Myers Beach passed a resolution that was submitted during the Part 150 public hearing in late 2013. The request included increasing the altitude aircraft passed over TROPIC (just west of Fort Myers Beach) to 3,300 ft. with the goal of ensuring that aircraft would remain at or above 3,000 ft. over Fort Myers Beach while descending on the glide slope. That resolution was approved for transmittal to the FAA ATO by the Lee County Port Authority Commission.

Benefit: An increase in the altitude of aircraft from 1,600 ft. to 3,000 ft. over Fort Myers Beach results in a reduction in noise of approximately 5.2 dB. The magnitude of this change exceeds the 3-5 dB change that is typically required to be noticeable.

FAA’s Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local ATC.

Current Disposition: Implemented. An ILS procedure was published on May 2, 2013 that increases the glide slope intercept altitude from 1,600 ft. to 3,000 ft. MSL just west of Fort Myers Beach (**Figure 12**). This places aircraft descending on the ILS glide slope to Runway 6 at between 2,700 and 2,800 ft. MSL as they cross Fort Myers Beach. The FAA has indicated that an increase in the intercept altitude from 3,000 ft. to 3,300 ft. is not feasible and/or would create potential safety concerns. It was noted that the average intercept altitude for ILS approaches at all commercial service airports in Florida is 2,100 ft. In addition to publication of the ILS procedure, in August 2013 the FAA began including verbal directives to aircraft operating under VFR to remain at 3,000 ft until over Fort Myers Beach. The FAA believes that this action has been the most effective at providing relief to the Fort Myers Beach community. The FAA Airport Facilities Directory has also been updated to include the following language “Visual apchs to Runway 06 west of Fort Myers Beach are req to maintain 3,000’ until crossing Fort Myers Beach shoreline 12 NM southwest of arpt.” In April 2018 discussions with the FAA and the Fort Myers Beach Community relative to this status update, it was noted the Runway 6 RNAV procedure

currently uses an altitude of 2000 feet at a fix located west of Fort Myers Beach. The FAA indicated that the RNAV arrival is typically only used when the ILS is out of services. However, they are reviewing and considering a potential modification to this procedure to reflect the changes made to the ILS.

Effectiveness: FAA analyzed sample days in January 2011, 2012, 2103 and 2014 to compare the altitudes of aircraft over Fort Myers Beach (**Figure 13**). The FAA analysis indicates that shortly after the start of the RSW 14 CFR Part 150 Study Update in 2012, nearly 69 percent of aircraft were overflying Fort Myers Beach below 3,000 ft. MSL, and 12 percent were below 2,000 ft. MSL. As of January 2014, the percentage of aircraft flying over Fort Myers Beach below 3,000 ft. MSL has been reduced to 27 percent, with approximately 1 percent below 2,000 ft. MSL. **Figures 14 and 15** depict the associated flight tracks. During busy periods aircraft sequencing and spacing requirements will reduce the effectiveness of this measure. The FAA has indicated that due to altitude separation requirements associated with sequencing of the two arrival streams and the need for one stream to be below the glidepath (with the other on the glidepath), there will likely never be a time that all aircraft will be at or near 3,000 when transiting Fort Myers Beach. A subsequent analysis was conducted by the FAA after implementing new vectoring procedures in November 2017. This analysis (**Figures 16, 17 and 18**) showed that 5- to 60 percent of the aircraft during the sample periods were being vectored through the back bay and that more than half of the remaining aircraft were at or above 3,000 feet over Fort Myers Beach. The FAA did note however, that the routing and altitude of overflight is complicated on busy days during the season when the sequencing of the north and south arrival streams requires both altitude and lateral separation. Additionally, since the time will vary between a controller issuing a directive and the pilot initiating the turn, vectoring can have the unintended consequence of an aircraft transiting the full length of the island as they are descending rather than the back bay.

Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC and the pilot in command.

Next Steps and Timeline: Promote awareness with airlines as part of overall noise abatement program. Explore feasibility of increasing the altitudes associated with the Runway 6 RNAV procedure with the FAA.

FIGURE 11
PREVIOUS ILS APPROACH TO RUNWAY 6

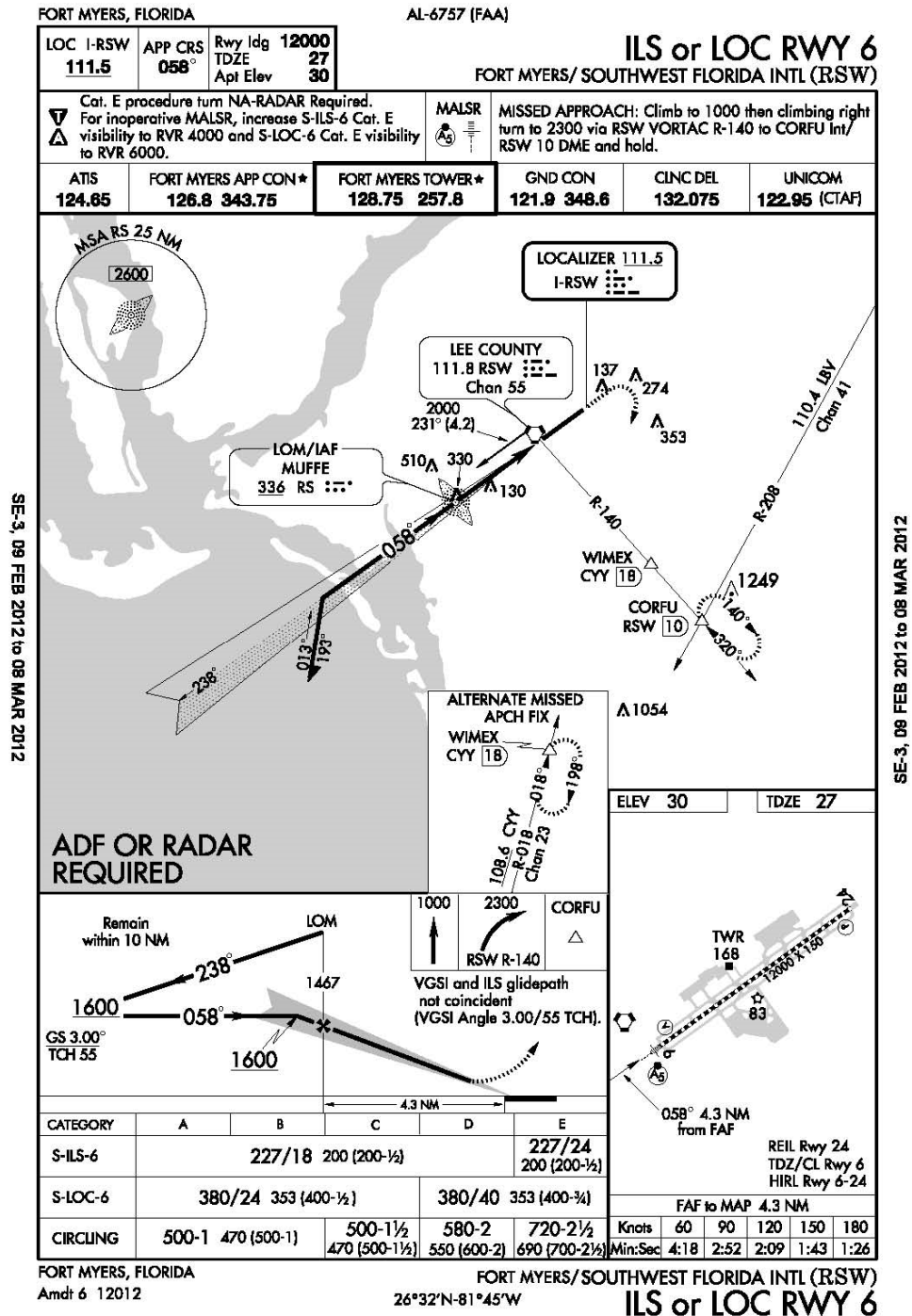


FIGURE 12
REVISED ILS APPROACH TO RUNWAY 6

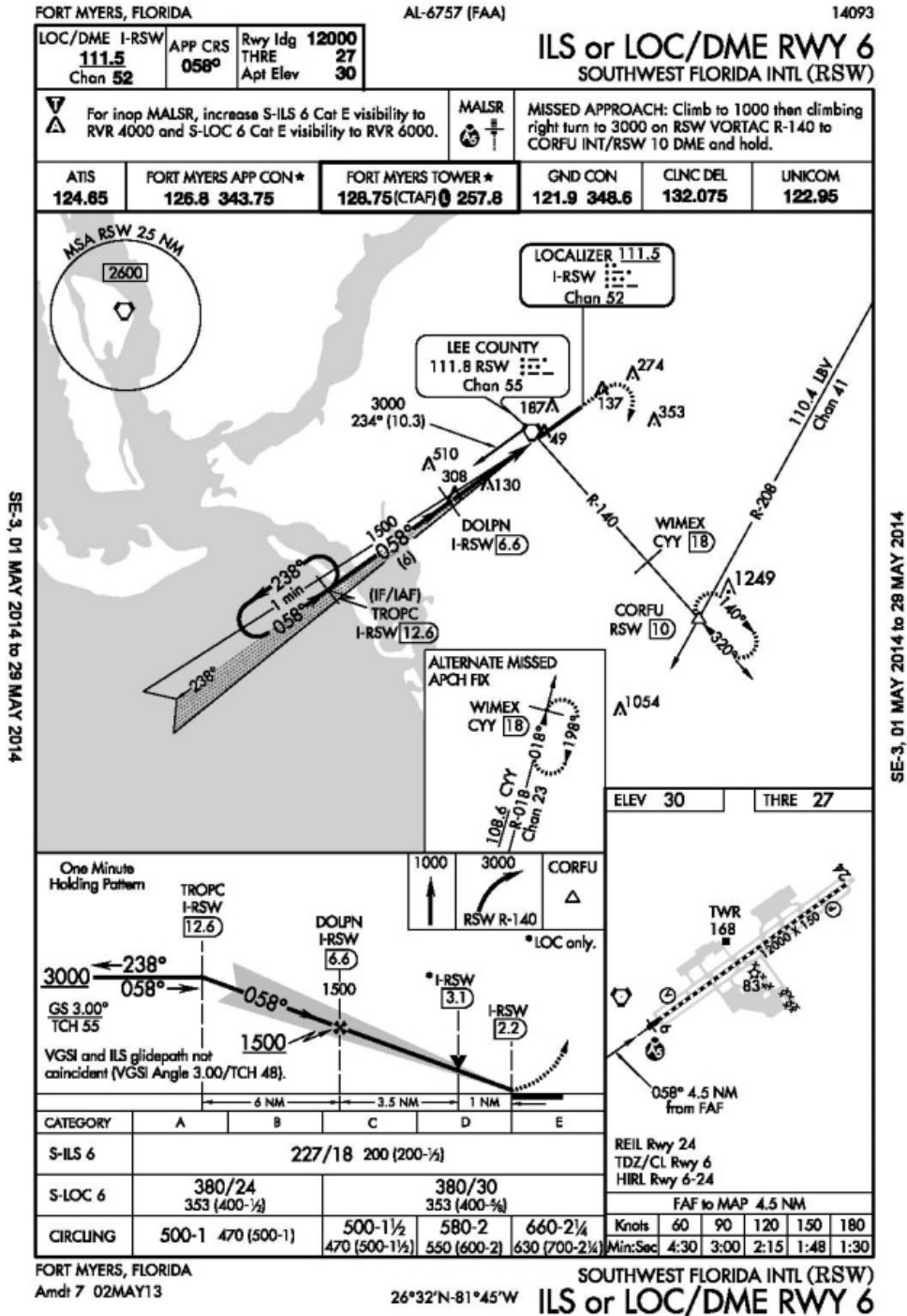
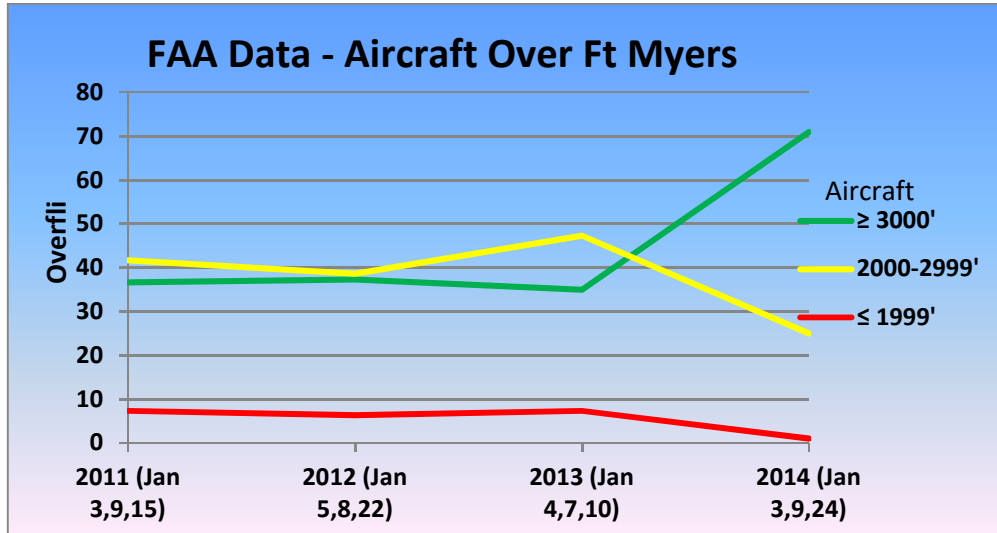
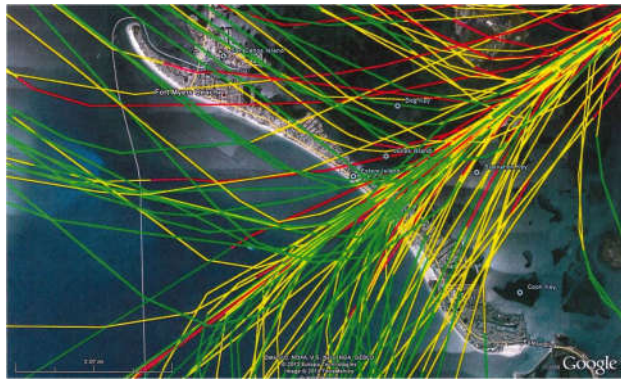


FIGURE 13
AIRCRAFT ALTITUDES OVER FORT MYERS BEACH January 2011- 2014



Source: RSW FAA ATC

FIGURE 14
AIRCRAFT ALTITUDES OVER FORT MYERS BEACH – January 22, 2012



Source: RSW FAA ATC

83 Tracks
 26 Green (3,000' and above)
 47 Yellow (2000'-2900')
 10 Red (1900' and below)
 69% below 3000'

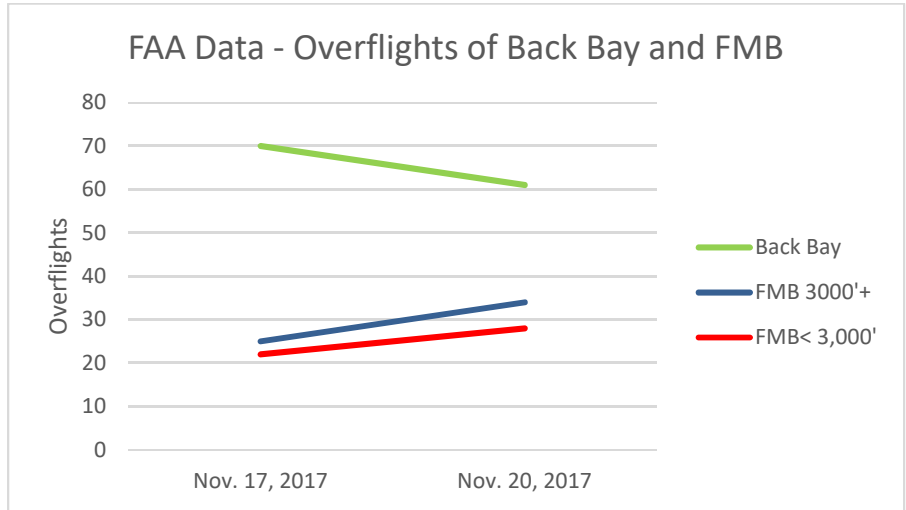
FIGURE 15
AIRCRAFT ALTITUDES OVER FORT MYERS BEACH – January 3, 2014



Source: RSW FAA ATC

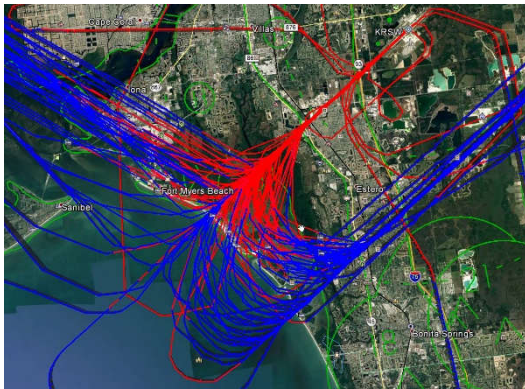
82 Tracks
 71 Green (3,000' and above)
 11 Yellow (2000'-2900')
 0 Red (1900' and below)
 13% below 3000'

FIGURE 16
AIRCRAFT OVER BACK BAY AND FORT MYERS BEACH - November 2017



Source: RSW FAA ATC

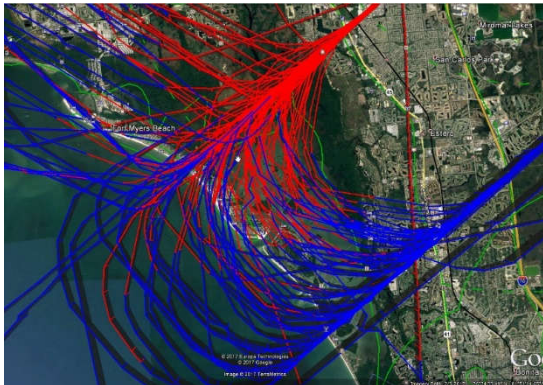
FIGURE 17
AIRCRAFT LOCATIONS OVER BACK BAY AND FMB – November 17, 2017



Source: RSW FAA ATC

117 Total Tracks
 Back Bay (70 tracks or 60%)
 Fort Myers Beach (47 tracks)
 - 25 Blue (3,000' and above)
 - 22 Red (below 3000')

FIGURE 18
AIRCRAFT LOCATIONS OVER BACK BAY AND FMB – November 20, 2017



Source: RSW FAA ATC

123 Tracks
 Back Bay (61 tracks or 49.5%)
 Fort Myers Beach (62 tracks)
 - 34 Blue (3,000' and above)
 - 28 Red (below 3000')

OP-7. Delay Point at which Aircraft Lower their Landing Gear

Description: This measure involves working with air carriers and operators to delay the point at which landing gear is lowered. The drag that results when the landing gear is dropped requires an increase in the engine thrust to maintain altitude and airspeed. This increase in thrust results in an increase in engine noise. Additionally, the air frame noise generated by an aircraft increases when the gear is lowered. Concerns were raised by members of the community about the distance from the airport that pilots are configuring the aircraft for landing and the associated increased noise. In particular, it was noted that the current procedure of routing all aircraft on the SHIFTY TWO downwind approach well west of the airport to PONTY without an early visual release is likely increasing the number of pilots that are configuring their aircraft for landing much further from the airport than they would otherwise. Recommended measures such as the RNAV OPD which turn the aircraft earlier may reduce this practice. However, working with the operators to increase awareness may also help to reduce potential annoyance.

Benefit: Delaying the lowering of the landing gear will allow aircraft to operate at reduced thrust settings until closer to the airport. This will help reduce both engine and airframe noise and annoyance associated with individual overflights.

FAA Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local air traffic control.

Current Disposition: Not yet implemented.

Effectiveness: To be determined. The effectiveness of this measure will depend on airline procedures certified by the FAA, and the point at which the landing gear is put down would remain the pilot’s discretion. Arrival procedures implemented at RSW (RNAV OPD and Bay Visual) that turn the aircraft to final earlier will help pilots to better gauge the appropriate time to lower their landing gear. However, it was noted previously that these procedures are currently limited in their use. It is recommended this measure be promoted once the pilots have had a chance to become familiar with the new procedures that have been published by the FAA.

Enforcement Action: None. This measure can only be pursued on a voluntary basis and is subject to the discretion of ATC and the pilot in command.

Next Steps and Estimated Timeline: Promote use with airlines over the next 18 months.

OP-8. Increase Altitude of Early Morning Arrivals

Description: This measure involves working with the FAA to help ensure that early morning overflights remain above 3,000 ft as they pass over Fort Myers Beach. Concerns were raised during the public workshops about low and noisy aircraft arrival overflights during the early morning hours. In particular, cargo carrier flights occurring before 6:00 am were cited as a concern. Since the RSW tower is not yet in operation (open 6 am until 12 am) when these flights arrive, these aircraft receive clearances from FAA’s Miami Air Route Traffic Control Center (ARTCC).

Benefit: Keeping early morning arrival overflights higher until closer to the airport will reduce the potential annoyance associated with these aircraft.

FAA Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local ATC.

Current Disposition: Implemented. In early 2014, RSW ATCT coordinated with Miami Center to have the Center keep these aircraft higher as they transition Fort Myers Beach and language has been incorporated into Miami Center’s SOP. As noted in OP-6, the FAA Airport Facilities Directory has also been updated to include the following language “Visual apchs to Runway 06 west of Fort Myers Beach are req to maintain 3,000’ until crossing Fort Myers Beach shoreline 12 NM southwest of arpt.” Coordination with the cargo carriers in early 2018 indicates that at least one of the carriers has incorporated language into their operating procedures for RSW that notes the 3,000 ft altitude. A review of a sample of early morning aircraft overflights in early 2018 indicates that aircraft appear to be at 3,000 ft over Fort Myers Beach. This review also indicated that shortly after the tower opened at 06:00 local, aircraft arriving on TYNEE were often routed through the back bay

Effectiveness: It appears that the number of early morning overflights below 3,000 ft has been reduced based on review of flight track data in early 2018. It was also noted in review of flight schedules and discussions with the FAA that seasonal flights may require ongoing coordination to ensure that pilots are familiar with the need to maintain 3,000 ft until after they transit Fort Myers Beach.

Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC and the pilot in command.

Next Steps and Estimated Timeline: No further action. Continue to promote measure as part of overall noise abatement program during coordination with the airlines, RSW ATCT and Miami ARTCC.

OP-9. Change Runway 24 to Preferred Runway From 10:00 PM – 6:00 AM

Description: This measure involves the use of Runway 24 as the preferred runway during nighttime hours (10 pm -6 am). In exploring opportunities to address late night and early morning aircraft operations occurring at RSW, it was determined that a potential change in the voluntary preferential runway after 10:00 PM (shown in **Figure 19**) could reduce nighttime annoyance. It was determined that this would be beneficial to the local communities because it would reduce the number of overflights that would be routed over the noise sensitive communities in the Estero Corridor and Fort Myers Beach area during periods when potential annoyance from aircraft activities is the highest.

Benefit: With Runway 24 as the preferred nighttime runway, aircraft arriving down the west coast of Florida would be flying over the Estero Corridor at a higher altitude on the TYNEE ONE Arrival, and aircraft arriving down the middle of the state flying the SHFTY TWO Arrival would fly straight-in to Runway 24, avoiding the Estero corridor and Fort Myers Beach altogether. Nearly all operations being conducted at the airport after 10:00 PM are arrivals. As a result, the Runway 24 departure noise concerns for the communities of Fiddlesticks and The Forest would be minimal.

FAA Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local ATC.

Current Disposition: Implemented by the RSW ATCT August 1, 2013 on a voluntary basis from 10:00 PM to 12:00 AM when weather and conditions permit. Subsequently, the RSW TRACON incorporated language into their SOP that emphasizes use of Runway 24 or vectors aircraft through the back bay when the tower is open. Language was also added to the FAA’s Airport Facility Directory that indicates “Rwy 24 preferred btn0300-1100Z.” This time period is equal to 10:00 pm to 6:00 am local time.

Effectiveness: Pilots traveling down the coast on the TYNEE ONE procedure often request Runway 6 during nighttime hours to avoid the 15 plus miles of added flight distance that this measure would require. They also typically want to make sure they get on the ground in time to have RSW ATC close out their flight plan. The RSW tower is closed from 12:00 AM until 6:00 AM and aircraft are handled by the Miami Center during the closure period. Coordination has occurred between RSW ATC and Miami ARTCC, but the effectiveness of this measure is limited by weather and pilot preference. Pilots can still request Runway 6 and the FAA is obligated to accommodate the request if traffic and conditions allow.

Enforcement Action: None. This measure can only be pursued as a voluntary measure and is subject to the discretion of ATC and the pilot in command.

Next Steps and Estimated Timeline: No further action. The LCPA will continue to promote utilizing Runway 24 with the airlines and the FAA as the preferential runway between the hours of 10 pm and 6 am as part of its overall noise abatement program.

**FIGURE 19
PREFERENTIAL RUNWAY USE**



Current Preferential Runway – Runway 6



Recommended Nighttime Preferential Runway – Runway 24

OP-10. Modify CSHEL FOUR Departure Procedure

Description: This measure involves modification of the CSHEL FOUR departure procedure to reduce overflights of densely populated areas. The CSHEL FOUR Departure Procedure off of Runway 24 directs departing aircraft through the Alico industrial corridor. This measure would modify that procedure to reduce noise and annoyance for the communities located at the west end of this corridor.

Analysis of RSW airport operations from January 2008 to April 2011 determined that Runway 24 is used approximately 30 percent of the time. It was also noted that Runway 24 can be used as little as 10 percent in a given month or as much as 50 percent or more depending on the seasonal wind conditions. The Forest community is located at the west end of the Alico industrial corridor directly under the Runway 24 CSHEL FOUR Departure procedure. Through the noise monitoring conducted as part of the 2013 Study, it was determined that this community experiences the highest levels of aircraft noise of any local community. In discussions with ATCT, it was determined that the current CSHEL FOUR Departure procedure provides a safe separation between departing and arriving aircraft at RSW as well as an altitude cushion from aircraft that could be departing out of Page Field (FMY). It was also noted that slight modifications could be made in the CSHEL FOUR Departure procedure to reduce the number of direct overflights over The Forest community while providing a more direct routing to the north for some aircraft as shown in **Figure 20**.

Benefit: This measure will help reduce the number of overflights experienced by The Forest community by modifying the Runway 24 RNAV Departure procedure to lessen the concentration of aircraft departures over a narrow corridor (railroad effect). It would also reduce the flight distance for aircraft with greater climb out capabilities.

FAA’s Record of Approval Decision: “Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure’s noise benefits on the DNL 65 dB contour.” This measure can be pursued at the local level on a voluntary basis subject to the discretion of local ATC.

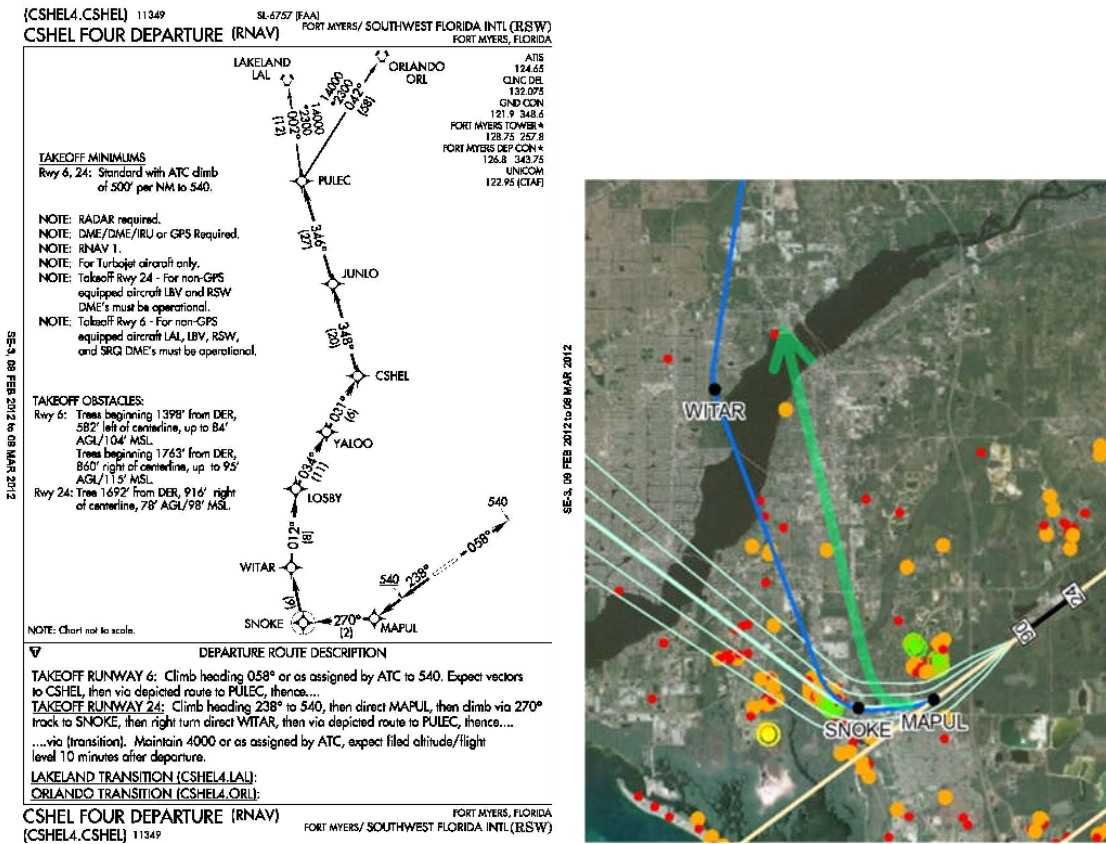
Current Disposition: Partially implemented. The tower has indicated that they may be able to manage implementation of this measure without formally modifying the published procedure. The FAA is currently providing verbal guidance directing aircraft reaching MAPUL and 3,000 ft MSL to turn direct to CSHEL, but a published procedure is not currently in development.

Effectiveness: Aircraft are sometimes being turned to the north earlier which has reduced the railroad effect over the Forest community.

Enforcement Action: None. This measure can only be pursued on a voluntary basis and is subject to the discretion of ATC and the pilot in command.

Next Steps and Estimated Timeline: Modification of this procedure is no longer being pursued. However, the LCPA should continue to promote overflights of more compatible land uses located east of The Forest community with RSW ATCT.

FIGURE 20
CSHEL FOUR DEPARTURE – EXISTING AND PROPOSED ROUTING



3.2 Off-Airport Land Use Compatibility Planning Measures

LU-1. Update Noise Overlay Zones

Description: This measure involves updating the existing airport noise overlay zones to ensure long term land use compatibility in proximity of the airport. The 2006 Part 150 update modified previously established overlay zones around the airport to protect from future non-compatible land uses through 2020. With changes in activity and progression of time since the 2006 study, this measure involves updating these zones to reflect the land use and sound exposure conditions within the County expected in the year 2030. Composite 2030 DNL contours were generated during the 2013 Study that reflect the combination of the current single runway configuration operating at 85 percent of capacity and the future two runway configuration operating at 2030 activity levels. The updated noise overlay zones include four zones: A, B, C and D, as shown in **Figure 21**. Zone A is existing airport property and Zone B is the 60 DNL contour. Zone C reflects the 55 DNL contour or area that receives 10 percent of the cumulative noise exposure considered significant by the FAA. Finally, Zone D is a potential future flight pattern area that may be subject to aircraft overflights. Noise sensitive uses are not allowed in Zones A or B.

Benefit: Ensure long term compatible land uses in near proximity to the airport. Increase awareness of potential noise exposure to those that may be more sensitive to aircraft overflights.

FAA’s Record of Approval Decision: “Disapproved for purposes of Part 150. The local jurisdiction has adopted a local standard lower than the Federal standard that defines incompatible land uses below DNL 65 dB. However, the recommended noise overlay zones are not based on either of the “official Noise Exposure Maps” accepted by the FAA in this study. The Federal government has no authority to control current or future local land use designations. The local jurisdictions have the authority to pursue their own proposed land use controls and enact the proposed Noise Overlay Zoning without FAA approval. Below the 65 DNL contour, FAA as a matter of policy encourages local efforts to prevent new non-compatible development immediately abutting the 65 DNL contour and to provide a buffer for possible growth in noise beyond the forecast period. Therefore, FAA’s disapproval should not be interpreted as minimizing or negating the efforts of local jurisdictions to provide prudent planning.”

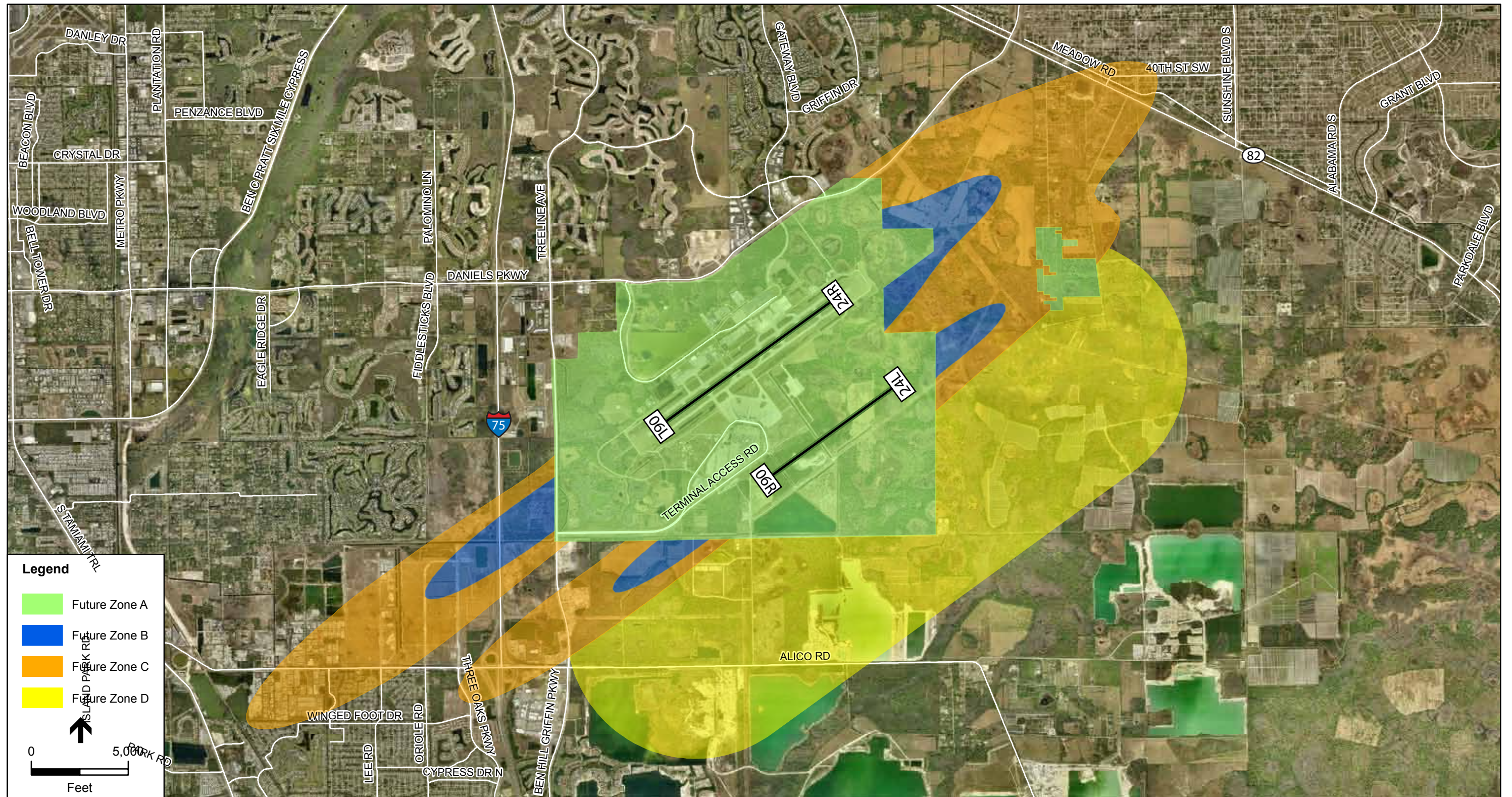
Current Disposition: Implemented. The Lee County Comprehensive Plan was amended effective November 18, 2016 and Lee County Land Development Code was amended effective November 23, 2016.

Effectiveness: No non-compatible land uses are currently located within the long term overlay zones that preclude noise sensitive development (Zones A and B). Additionally, notification is provided for those buying noise sensitive uses within the 55 DNL contour (Zones C and D).

Enforcement Action: N/A

Next Steps and Timeline: No further action required.

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SOURCE: ESA Airports, 2012; INM 7.0b; Lee County GIS Department

Southwest Florida International Airport 14 CFR Part 150 Study

Figure 221
 Airport Noise Zones

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3.3 Noise Program Administration Measures

PM-1. Noise Compatibility Program Management

Description: This measure involves the management of the NCP implementation. The LCPA is the owner/operator of RSW and has the current responsibility for working with the operators at the Airport to establish and implement the NCP at RSW. This measure recommends that LCPA assign resources as may be required to assist in implementation and management the recommendations from this Study Update.

FAA's Record of Approval Decision: Approved.

Benefit: Maintaining program oversight allows the LCPA to effectively track implementation and maximize the effectiveness of the NCP recommendations brought forth by the RSW 14 CFR Part 150 Study Update.

Current Disposition: Implemented. The LCPA has implemented the measures identified in the NCP recommended during the 2013 14 CFR Part 150 Study Update. This NCP implementation technical memorandum is part of the LCPA's ongoing efforts to manage the implementation of the noise program.

Effectiveness: The LCPA has been working with the FAA throughout the Part 150 Update process to begin implementation of many of the recommended measures well in advance of the FAA's ROA. This has resulted in 11 of the 16 recommendations already being partially or completely implemented.

Enforcement Action: N/A

Next Steps and Estimated Timeline: The LCPA will continue to manage the implementation process as appropriate for each implementation measure. Following implementation of each measure, the LCPA will continue to promote as part of its overall noise abatement program.

PM-2. Update Noise Program as Mandated by Lee Plan

Description: This measure involves periodic update of the NEM and NCP when appropriate. The FAA, through 14 CFR Part 150 regulations, requires airport sponsors to prepare and submit revised NEMs if changes in operations of the Airport would result in a change in the amount of incompatible land uses. The FAA defines a substantial change as a noise sensitive area that would experience a 1.5 dB DNL or greater increase or decrease for noise sensitive land uses exposed to 65 dB DNL and above.

The LCPA staff should periodically review the number of operations as well as the operational characteristics, such as runway use and fleet mix, to determine if any major changes in operations at the Airport have resulted in increased or decreased aircraft noise exposure to noise sensitive land uses. Assuming runway use and fleet mix are consistent, a 40 percent change in traffic roughly equates to a 1.5 dB DNL change. However, if the fleet or runway use changes, a 1.5 dB could result from a smaller change in activity.

The Lee Plan no longer stipulates a set period of time for update of the noise program. As a result, updates should occur when it is anticipated that there is a significant change in aircraft noise exposure to noise sensitive land uses. **Benefit:** Gives the LCPA the responsibility of updating its noise contours should conditions at the Airport change significantly..

FAA's Record of Approval Decision: Approved.

Current Disposition: Implemented. The LCPA will review operating conditions annually to determine if future updates are required.

Effectiveness: Implementation of this measure ensures that the airport noise contours remain representative of local conditions.

Enforcement Action: N/A

Next Steps and Estimated Timeline: The LCPA should periodically review operational changes to determine if an update to the noise program is warranted.

PM-3. Noise Forums with FAA Air Traffic Controllers

Description: This measure establishes a regular noise forum with RSW ATC in an effort to highlight areas where opportunities might exist to address community concerns. Regular meetings should be held between the two parties so that the latest issues impacting ATC and the LCPA can be addressed and to determine if any mitigating efforts can be established. These meetings are a continuation of the meeting and strong working relationship fostered with ATC throughout the 14 CFR Part 150 Study Update.

Benefit: Opens the lines of communication between the LCPA and RSW ATCT to maximize the effectiveness of the NCP implementation and allow review of current issues and concerns.

FAA’s Record of Approval Decision: Approved.

Current Disposition: Implemented. The LCPA has met with the ATC periodically to continue discussions relative to noise program implementation.

Effectiveness: Regular meetings are anticipated to maximize the effectiveness and refinement of the noise program.

Enforcement Action: N/A

Next Steps and Estimated Timeline: The LCPA will continue to meet with RSW ATCT staff periodically to discuss noise issues and the status of program measures.

PM-4. Develop a Jeppesen Insert on Noise Abatement Program at RSW

Description: This measure involved development of a Jeppesen type insert to raise awareness of noise concerns with pilots. Pilot education is one of the strongest tools for addressing noise concerns at an airport. Since operations at RSW are mostly conducted by air carrier operations, educating pilots on the airport's specific procedures or noise concerns can be a challenge since the same pilots may not regularly fly in and out of RSW.

This measure involves development of a Jeppesen type insert that contains all noise abatement information, including graphics depicting noise sensitive areas. The half page specially formatted inserts allow integration into the pilot flight manuals. This allows pilots to be aware of noise sensitive areas and noise considerations at an airport that might not have yet been integrated into the specific operational notices (green sheets or dash 7 pages) for a specific carrier. It will also assist in communicating these measures to non-commercial pilots through distribution by RSW's fixed based operators (FBOs).

Benefit: Helps create pilot awareness of the noise sensitive communities around RSW and the recommended measures to reduce annoyance associated with aircraft overflights.

FAA's Record of Approval Decision: Approved.

Current Disposition: Not implemented. Because of the shift to electronic information in the cockpit, this measure is no longer being pursued. Alternatively, the LCPA will engage the airlines to elevate awareness of community noise concerns.

Effectiveness: TBD

Enforcement Action: N/A

Next Steps and Estimated Timeline: The LCPA will engage the airlines through periodic outreach meetings to elevate awareness of community noise concerns.

PM-5. Install Runway End and Noise Abatement Reminder Signs

Description: This measure involves installation of noise abatement reminder sign at key areas on the airfield. While locally based pilots may be familiar with the noise abatement or noise measures, RSW is predominantly an air carrier airport with few locally based aircraft. To continue to educate and raise awareness of noise concerns for unfamiliar pilots, this measure involves adding runway end reminder signs that are visible to pilots just prior to takeoff.

Benefit: The signs can help reduce noise exposure by increasing pilot awareness. The signs can also identify locations of noise sensitive areas by directing pilots to avoid certain turns or fly certain instrument procedures aimed at avoiding noise sensitive sites.

FAA Record of Approval Decision: Approved. “Signage must not be construed as mandatory air traffic procedures. Prior to purchase and installation, signage must be reviewed and approved by the FAA outside of the Part 150 process.”

Current Disposition: Not Implemented. The LCPA will work with the FAA to ascertain funding for signage on the Airport to help spread awareness of the noise abatement policies and procedures at RSW.

Effectiveness: To be determined. It should be noted that these signs are of most benefit to departing aircraft.

Enforcement Action: N/A

Next Steps and Estimated Timeline: The LCPA will review funding opportunities. Timing of this measure is subject to funding availability. Implementation should be carried out in conjunction with an adjacent project to minimize costs and operational disruption.

5.0 Summary

A 2018 review of the status of NCP measures indicates continued significant progress both in program implementation and refinement and effectiveness of the measures since the 2014 status update. The RSW ATCT continues to work as an effective partner in accomplishing the overall goals of program. Program progress spans the range of operational, land use and program measures.

While the FAA disapproved all ten of the operational measures for the purposes of Part 150, there has been significant progress in implementing these measures to reduce annoyance caused with aircraft overflights for the communities surrounding RSW. Six of the ten measures have been implemented either fully or in part. Feasibility evaluation of a seventh has been implemented and determined not feasible. Of the three remaining measures, two are slated for future implementation (extending the OPD procedure further from the airport and shifting the downwind to the south at time of the new parallel runway construction) and one is in the process of being coordinated (delay point at which aircraft lower gear). While a variety of factors have limited the effectiveness of certain measures, the FAA's RSW ATCT and TRACON have implemented alternative techniques including the vectoring of aircraft in attempts to achieve the desired results.

Implementation of the single land use measure required a multiphase approval process and was completed in late 2016. While disapproved by the FAA for the purposes of the 2913 Part 150, the zones now in effect protect the airport against incompatible land use encroachment and also provide notifications for new owners.

All five of the program measures were approved by the FAA and three of the five have been implemented. One of the five has been determined no longer effective (publication of a Jeppesen type insert) and is no longer being pursued and the remaining measure (noise abatement airfield signage) is recommended for implementation when funding is available and it makes sense from an operational phasing standpoint.

Next steps include monitoring progress as appropriate, coordinating with the airlines and continuing to promote the measures outlined in the overall noise program. Maximum effectiveness of the overall program will likely occur as some of the longer term measures are implemented. It should be noted that future changes in FAA procedure design standards have the potential to impact any or all of the proposed operational measures and future modifications may be required.

APPENDIX A

RSW 14 CFR Part 150 Study Update FAA
Record of Approval

received
4-10-14



U.S. Department
of Transportation
**Federal Aviation
Administration**

ORLANDO AIRPORTS DISTRICT OFFICE
5959 Hazeltine National Drive
Suite 400
Orlando, FL 32822
Phone: (407) 812-6331 Fax: (407) 812-6978

April 7, 2014

Ms. Juliet S. Inglesias
Grants Manager
Southwest Florida International Airport
11000 Terminal Access Road
Suite 8671
Fort Myers, FL 33913-8213

Dear Ms. Inglesias:

RE: Southwest Florida International Airport, Ft. Meyers, FL
Noise Compatibility Program Record of Decision

The Federal Aviation Administration (FAA) has evaluated the Noise Compatibility Program for Southwest Florida International Airport contained in the Noise Compatibility Program and related documents submitted to this office under the provisions of 49 U.S.C., Section 47504. The recommended Noise Compatibility Program proposed by the Lee County Port Authority is identified by action element number in Chapters 11, 12 and 13 of the Noise Compatibility Program for Southwest Florida International Airport. I am pleased to inform you that the Regional Airports Division Manager has fully approved five (5) of the sixteen (16) proposed action measures in the Noise Compatibility Program. The specific FAA action for each Noise Compatibility Program measure is set forth in the enclosed Record of Approval. The effective date of this approval is April 4, 2014.

Eleven of the proposed measures in the NCP were disapproved because the analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour, nor did they result in achieving the goals of reducing existing noncompatible land uses around the airport and preventing the introduction of additional noncompatible land uses in the area around the airport. However, these measures can be implemented by the Airport Sponsor on a voluntary basis. All of the FAA's approval and disapproval actions are more fully explained in the enclosed Record of Approval.

Each airport Noise Compatibility Program developed in accordance with 14 CFR Part 150 is a local program, not a Federal program. The FAA does not substitute its judgment for that of the airport operator with respect to which measures should be recommended for action.

The FAA's approval or disapproval of 14 CFR Part 150 Program recommendations is measured according to the standards expressed in 14 CFR Part 150 and the Aviation Safety and Noise Abatement Act of 1979, (49 U.S.C. 47501-47507) and is limited to the following determinations:

The Noise Compatibility Program was developed in accordance with the provisions and procedures of 14 CFR Part 150;


Program measures are reasonably consistent with achieving the goals of reducing existing noncompatible land uses around the airport and preventing the introduction of additional noncompatible land uses;

Program measures would not create an undue burden on interstate or foreign commerce, unjustly discriminate against types or classes of aeronautical uses, violate the terms of airport grant agreements, or intrude into areas preempted by the Federal Government; and

Program measures relating to the use of flight procedures can be implemented within the period covered by the Program without derogating safety, adversely affecting the efficient use and management of the Navigable Airspace and Air Traffic Control Systems, or adversely affecting other powers and responsibilities of the Administrator prescribed by law.

Specific limitations with respect to FAA's approval of an airport Noise Compatibility Program are delineated in 14 CFR Part 150, Section 150.5. Approval is not a determination concerning the acceptability of land uses under Federal, state, or local law. Approval does not by itself constitute a commitment by FAA to implement specific noise compatibility measures. FAA approval of some measures may require preparation of an environmental assessment. Further, approval of a plan does not commit FAA to financially assist in the implementation of the program nor are all measures covered by the program necessarily eligible for grant-in-aid funding from the FAA under the Airport and Airway Improvement Act of 1982. Where Federal funding is sought, requests for project grants should be submitted to the FAA Airports District Office.

Sincerely,


Bart Vernace P.E., Manager
Orlando Airports District Office

1 Enclosure

cc:

APP-400

ASO-610

ASO-7

FEDERAL AVIATION ADMINISTRATION

RECORD OF APPROVAL
14 CFR PART 150
NOISE COMPATIBILITY PROGRAM

Southwest Florida International Airport
Ft. Myers, Florida

Randy Symon

Regional Counsel, ASO-7

✓
CONCUR

NONCONCUR

1st April 2014

Date

Wendy P. Giffert

Airports Division Manager
Southern Region

✓
APPROVED

DISAPPROVED

4/3/2014

Date

RECORD OF APPROVAL
Southwest Florida International Airport (RSW)
Ft. Myers, Florida

The Southwest Florida International Airport (RSW or Airport), Ft. Myers, Florida developed a Noise Compatibility Program (NCP) that describes current and future land uses based on the parameters established in Title 14 Code of Federal Regulations (CFR) Part 150, Airport Noise Compatibility Planning. The NCP is an update to RSW's existing program, which the FAA most recently approved in 2006. It consists of 16 new program measures, including ten operational measures, one land use measure, and five program management measures for which RSW seeks Federal Aviation Administration (FAA) approval. Additionally, the NCP contains 14 existing program measures, previously approved by the FAA, that will remain in place. The 2006 Record of Approval identifying these existing program measures is attached to this document as Attachment "A".

This NCP was submitted subsequent to a determination by the FAA that associated Noise Exposure Maps (NEM) for RSW were in compliance with applicable requirements of 14 CFR Part 150, effective February 8, 2013, the same date the determination was published in the Federal Register.

The measures listed in the body of this Record of Approval (ROA) are those for which RSW has requested FAA approval. FAA approval indicates only that the actions would, if implemented, be consistent with the purposes of 14 CFR Part 150. The FAA has provided technical advice and assistance to the Airport to ensure that the operational elements are feasible (see 14 CFR 150.23(c)). Nevertheless, approval of a measure does not constitute FAA funding commitments or decisions to implement that measure. The FAA will make funding eligibility determinations as funds are requested. Later decisions concerning possible implementation of measures in this ROA will be subject to all applicable environmental compliance and other procedures and requirements including, but not limited to, the National Environmental Policy Act and Section 106 of the National Historic Preservation Act.

There follows a summary of the proposed operational, land use control, and program management measures identified in the NCP followed by the FAA's action for each. Each measure contains a cross-reference to the NCP. The summaries are derived from the NCP and do not represent the opinions or decisions of the FAA. The Disapproval for Purposes of Part 150 of any measure listed below does not prohibit the Airport Sponsor from implementing such measure outside of the Part 150 process.

Attachment "B" to this ROA contains Public Comments that were received by the FAA during the regulatory 60-day public comment period that started on October 21, 2013 as a result of the FAA publishing a Federal Register Notice advising of the beginning of the formal 180-day NCP review period. FAA's responses to these public comments are also contained in Attachment "B". FAA fully considered the public comments received in the development of this ROA.

OPERATIONAL MEASURES

OP-1. Promote Use of RNAV Visual Optimized Profile Descent (OPD) to Runway 06

RSW requests that the Airport, the FAA, and various stakeholders including air carriers continue to promote the use of the RNAV Visual OPD procedures at RSW highlighting the benefits of fuel efficiency and noise reduction to surrounding communities (p. 11-5; fig. 11.1 and 11.2).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

OP-2. Initiate RNAV Optimized Profile Descent Further From the Airport

RSW requests that the Airport, working with the FAA, continue to explore the feasibility of implementing new RNAV OPD arrival technology that will allow aircraft to initiate continuous descent arrivals further from the Airport, thereby remaining higher over noise sensitive areas including the Estero Corridor (p.11-9; fig. 11.1 and 11.3).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

OP-3. Raise the Downwind Altitude to Runway 06

RSW requests that the Airport, working with the RSW air traffic control tower (ATCT), determine if raising the altitude of the south downwind leg is feasible from a safety and efficiency standpoint. RSW also requests that the Airport continue to work with the FAA to develop arrival procedures that will take advantage of optimized profile descents or continuous descent approaches so that aircraft minimize leveling off at low altitude over residential areas during arrival operations (p. 11-9; pp. 4-1 – 4-19; p. 5-1 - 5-11; figs. 4.1 - 4.4; 5.1, 5.2, and 5.5 - 5.10).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

OP-4. Shift Downwind Flight Track to the South

RSW requests that with the completion of the new south parallel runway at RSW (Runway 06R-24L) the south downwind leg be shifted approximately one mile further south because of both an operational need and a reduction to population impacts from aircraft overflights (p. 11-17 and 11-18).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

OP-5. Publish Charted Visual Approach to Runway 06 from the North and South

RSW requests that the Airport, working with the FAA, publish a charted visual approach procedure for Runway 06 to maximize routing of aircraft over compatible land uses when conditions permit; and also allow for aircraft that are not capable of flying the RNAV Visual OPD to follow a similar track (p. 11-18; fig. 11.5).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

OP-6. Keep Aircraft at 3,000 ft. Over Fort Myers Beach

RSW requests that the Airport, working with the FAA, explore the feasibility of raising the altitude of aircraft arriving over Fort Myers Beach to Runway 06 to 3,000 ft. by increasing the ILS intercept altitude for the ILS to Runway 06, increasing the altitude of aircraft at TROPC, creating a step down procedure, or some combination thereof (pp. 11-21 – 11-24; fig. 11.6; tables 11.4 and 11.5; app. C and app. S).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

Note: This measure is currently being performed outside of the Part 150 process.

OP-7. Delay Point at which Aircraft Lower the Landing Gear

RSW requests that the Airport work with air carriers to make sure they are aware of noise sensitive areas around the Airport to reduce impacts associated with early dropping of landing gear on approach (p. 11-25).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

OP-8. Increase Altitude of Early Morning Arrivals

RSW requests that the Airport work with the FAA and air carriers to increase awareness of noise concerns in efforts to keep aircraft higher when arriving to the Airport during early morning hours (p. 11-25).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

OP-9. Change Runway 24 to Preferred Runway From 10:00 PM – 6:00 AM

RSW requests that the Airport, working with RSW ATCT and air carriers who routinely operate at RSW, establish Runway 24 as the voluntary preferential arrival runway from 10:00 PM to 6:00 AM local time when Airport operational and weather conditions permit (p. 11-25 and 11-26; fig. 11.7).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

Note: This measure is currently being performed outside of the Part 150 process.

OP-10. Modify CSHEL FOUR Departure Procedure

RSW requests that the Airport work with the RSW ATCT to explore the advantages of having aircraft climb out at a speed of 220 knots, and once passing the MAPUL Intersection and upon leaving 3,000 ft.MSL, to avoid conflicts at FMY, make their right turns direct to CSHEL. This would keep aircraft on their current course south of Fiddlesticks, but allow the better performing aircraft to turn before reaching The Forest community, therefore not increasing overflights over the Fiddlesticks community, and reducing overflights over The Forest, as shown in NCP Figure 11.10. This procedure would also reduce aircraft flight path distance and possibly fuel burn (p. 11-29 – 11-32; figs. 11.8 – 11.0; table 11.6).

FAA Action: Disapproved for purposes of Part 150. The analysis in the NCP does not demonstrate the measure's noise benefits on the DNL 65 dB contour.

Note: This measure is currently being performed outside of the Part 150 process.

LAND USE MEASURES

LU-1. Airport Overlay Zone Update

RSW requests that the Airport and Lee County update the current Airport Noise Overlay Zones consistent with the goals and objectives of local government for long term land use compatibility with activities at RSW (p. 12-11; figs. 12.2 – 12.4; Appendix P).

FAA Action: Disapproved for purposes of Part 150. The local jurisdiction has adopted a local standard lower than the Federal standard that defines incompatible land uses below DNL 65 dB. However, the recommended noise overlay zones are not based on either of the "official Noise Exposure Maps" accepted by the FAA in this study. The Federal government has no authority to control current or future local land use designations. The local jurisdictions have the authority to pursue their own proposed land use controls and enact the proposed Noise Overlay Zoning without FAA approval. Below the 65 DNL contour, FAA as a matter of policy encourages local efforts to prevent new noncompatible development immediately abutting the 65 DNL contour and to provide a buffer for possible growth in noise beyond the forecast period. Therefore, FAA's disapproval should not be interpreted as minimizing or negating the efforts of local jurisdictions to provide prudent planning.

PROGRAM MANAGEMENT MEASURES

PM-1. Noise Compatibility Program Management

Recommendation: RSW requests that the LCPA manage the implementation of the NCP measures contained in the NCP (p. 13-2).

FAA Action: Approved.

PM-2. Update Noise Program as Mandated by Lee County Plan

RSW requests that LCPA staff routinely examine operating characteristics at RSW to determine if significant changes have occurred that would require an update to the NEMs. If a significant change has occurred, then the NEMs should be updated. The NCP should be updated every five years as designated in the Lee County Comprehensive Plan (p.13-2).

FAA Action: Approved.

PM-3. Noise Forums with RSW Air Traffic Control

RSW requests that the LCPA meet with RSW ATC on a quarterly or yearly basis to address concerns raised by both parties and to explore potential solutions that can be beneficial for all Airport stakeholders (p. 13-3).

FAA Action: Approved.

PM-4. Develop a Jeppesen Insert on Noise Abatement Programs at RSW

RSW requests that the Airport voluntarily work with RSW ATCT, air carrier station managers, and the FAA to publish Jeppesen Type pilot handouts notifying pilots of the noise abatement measures in place at RSW for better awareness and compliance of preferred measures (p. 13-3).

FAA Action: Approved

PM-5. Install Runway End and Noise Abatement Reminder Signs

RSW requests approval to install noise abatement reminder signs at the end of each runway in an effort to create pilot awareness of the noise sensitivity of the communities in proximity to RSW (pp. 13-3 and 13-4).

FAA Action: Approved. Signage must not be construed as mandatory air traffic procedures. Prior to purchase and installation, signage must be reviewed and approved by the FAA outside of the Part 150 process.