WELCOME

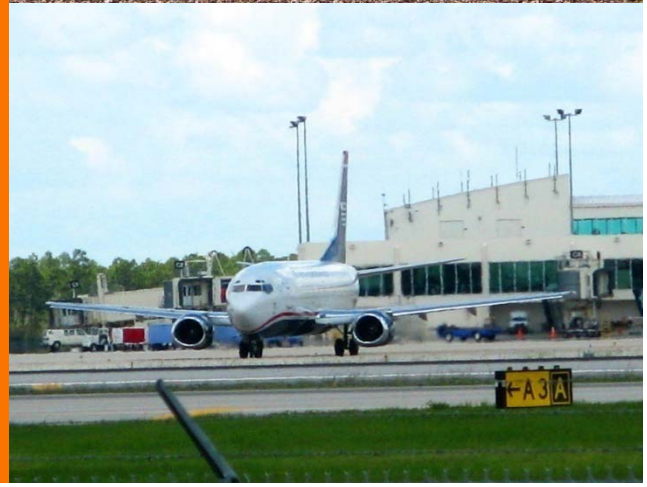
Southwest Florida International Airport

Federal Aviation Regulations (FAR) Part 150 Overview

Public Workshop

#3

March 2012



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where service and solutions meet

Roles and Responsibilities

- **Three core organizations involved in aircraft operations at RSW**
  - Federal Aviation Administration (FAA)
    - Directs the safe movement of aircraft in the air and on the ground
  - Lee County Port Authority (LCPA)
    - Landlord of the airport = Contracts and property managers
    - No control over where aircraft fly
  - Airlines and Pilots
    - Pilot in command has ultimate responsibility for the safe operation of his/her aircraft

Overview of FAR Part 150

- Airport noise studies are ***voluntary***
- Must follow FAR Part 150 process for recommendations to be considered and accepted by FAA
- Why conduct a noise study?
  - Public opportunity to voice concerns and learn more about aircraft noise exposure
  - Determine existing noise conditions at an airport
  - Evaluate alternatives to address noise concerns which may include possible flight procedure/land use changes
  - Educate communities on the Federal process and what *can and cannot* be done
  - "Comprehensive voice" for southwest Florida – not just one community
  - Submit local Board endorsed recommendations to the FAA and airlines

Why is 65 DNL Important?

- **65 DNL and higher =** Cumulative measure the FAA and the US Department of Housing and Urban Development (HUD) consider to be incompatible (without NLR) with residential, schools, hospitals and other noise-sensitive uses near airports.

- **Less that 65 DNL Contour** = federal government considers all uses compatible with airport noise

- There is no FAA exposure threshold for noise significance associated with a single aircraft overflight.

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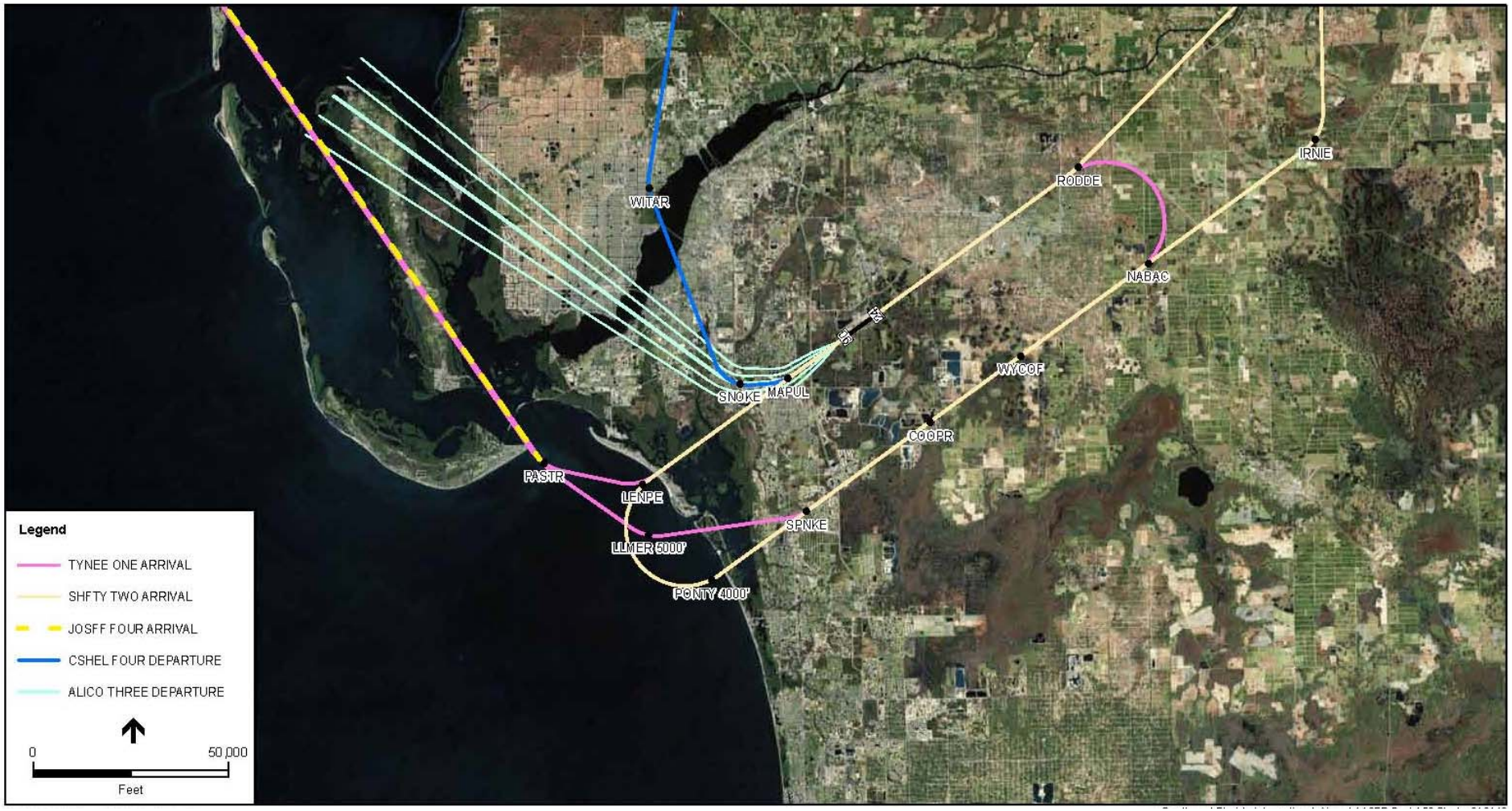
Existing Flight Procedures



FAA Integrated Noise Model
2011 Existing Baseline Noise Contours

SOURCE: Lee County GIS Department; ESA Airports, 2011; INM 7.0b; ESRI

Southwest Florida International Airport CFR Part 150 .21014(

FAA Integrated Noise Model
2017 Future Baseline Noise Contours

SOURCE: Lee County GIS Department; ESA Airports, 2011; INM 7.0b; ESRI

Southwest Florida International Airport CFR Part 150 .21014(

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Operational Evaluation

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Existing Measures & Recommendations

#	Existing Measure	Description	Pros/Cons	Recommendation
	Preferential Runway Use	Use Runway 06 during calm wind conditions	•Minimizes departures over the Forest and Fiddlesticks	Voluntary Measure to Remain
	Visual Approaches	Keeps aircraft on downwind at 5,000 feet for as long as possible	•Minimizes noise exposure •May keep aircraft in non-controlled airspace •May create operational conflicts	Voluntary Measure to Remain
	"Keep 'em High" (voluntary)	Program to promote keeping aircraft at higher altitudes as long as possible	•Minimizes noise exposure •May keep aircraft in non-controlled airspace •May create operational conflicts	Voluntary Measure to Remain
	MAPUL-1 Standard Instrument Departure (SID)	Uses RNAV to maximize use of Alico industrial corridor for departures on Runway 24	•Concentrated flight path •Minimizes departure overflights of Fiddlesticks and communities immediately adjacent the airport •Routes aircraft directly over portion of the Forest	Voluntary Measure to Remain (Currently CSHEL FOUR) – possibly with modifications
	ALICO THREE Standard Instrument Departure	Maximizes use of Alico industrial corridor for non RNAV equipped departures on Runway 24	•Minimizes departure overflights of Fiddlesticks and communities immediately adjacent the airport •Splays departure path	Voluntary Measure to Remain
	AOPA Recommended Procedures	Promotes Use of AOPA best practices for Propeller Aircraft	•Minimizes potential annoyance resulting from Piston Aircraft •Very Few operating at RSW	Voluntary Measure to Remain
	Turbojet Aircraft Manufacturer's or NBAA Noise Abatement Procedures	Promotes use of aircraft manufacturer's recommended noise abatement procedures, the NBAA's Approach and Landing Procedure (VFR and IFR), or Standard Departure Procedure for Turbine powered aircraft	•Minimizes potential annoyance resulting from Turbine Powered Aircraft	Voluntary Measure to Remain

Operational Evaluation
Existing Measures & Recommendations

DRAFT

#	Existing Measure	Description	Pros/Cons	Recommendation
	Distant Noise Abatement Departure Procedure	Promotes use of the Distant Noise Abatement Departure Profile as defined by the FAA Advisory Circular AC91-53A for commercial aircraft	•Gets aircraft higher quicker to minimize potential annoyance	Voluntary Measure to Remain
	Run Up Procedures	Limits engine maintenance run ups between 11:00PM and 6:00AM without prior approval	•Avoids very loud aircraft noise events during nighttime hours	Voluntary Measure to Remain
	Runway 06 Departure Procedure	Runway 6 departures are turned no further west than 350 degrees until they are five miles from the Airport	•Avoids early departure turns over Gateway	Voluntary Measure to Remain
	Purchase and Install Flight Tracking System	Assists in monitoring the voluntary noise mitigation procedures and assists in the development of modifications to these procedures that will benefit the citizens living in proximity of the Airport	•Allows evaluation of procedures •Provides better data for future studies	Voluntary Measure to Remain
	Support Implementation of RNAV Procedures (A)	Continue to monitor emerging technology and evaluate new opportunities when more readily available	•Use of emerging technology to reduce noise exposure	Voluntary Measure to Remain
	Support Implementation of RNAV Procedures (B)	Encourages FAA to implement new procedures that will provide noise abatement benefits to surrounding communities	•CSHEL FOUR is example of new technology implementation	Voluntary Measure to Remain

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Operational Evaluation

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New Proposed Measures & Recommendations

#	New Measure	Description	Pros/Cons	Recommendation
	Raise Downwind to Runway 06	Raises altitude for aircraft on portion of downwind leg from 4,000 feet to 5,000 feet	•Provides a ~3 dB noise reduction to Estero Corridor •Potential increase in fuel efficiency •Aircraft will be located above 4,000 foot Class C controlled airspace ceiling	Recommended – reduces noise and potential annoyance
	Keep Aircraft at 3,000 feet over Fort Myers Beach	Raises aircraft from as low as 1,600 feet to 3,000 feet as aircraft fly over beach	•SEE BOARD FOR DETAILS	Recommended – Reduces noise and potential annoyance
	Promote Use of RNAV Visual Optimized Profile Descent to Runway 06	Encourages airlines to use the recently developed glide descent profile developed by the FAA.	•SEE BOARD FOR DETAILS	Recommended – Reduces potential annoyance and overflights
	Initiate RNAV OPD Arrival Procedure Further from Airport	Extends the benefits of the current OPD procedure	•SEE BOARD FOR DETAILS	Recommended – Reduces potential annoyance and overflights
	Publish Charted Visual Approach to Runway 6 from North	Develops visual approach to help aircraft avoid overflying noise sensitive areas along Fort Myers Beach	•Provides guidance to avoid overflights of non-compatible land uses •Available to all aircraft •Both vertical and horizontal navigation criteria can be published (i.e. 3,000' until passing FMB)	Recommended – avoids overflights of noise sensitive areas

Operational Evaluation

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New Proposed Measures & Recommendations

#	New Measure	Description	Pros/Cons	Recommendation
	Publish Charted Visual Approach to Runway 6 from North and South	Develops visual approach to help aircraft avoid overflying noise sensitive areas along areas to the south and Fort Myers Beach	•SEE BOARD FOR DETAILS	Recommended – avoids overflights of noise sensitive areas
	Modify CSHEL FOUR Departure Procedure	Modify RNAV departure turn to reduce overflight of residential areas	•SEE BOARD FOR DETAILS	Recommended – Reduces noise and potential annoyance
	Increase Altitude of Early Morning Flights	Work with operators to keep aircraft higher when arriving to the airport during early morning hours	•Reduces annoyance associated with early morning flights •Difficult to manage during periods tower is closed	Recommended – reduces noise and potential annoyance
	Delay Point Aircraft Put Landing Gear Down	Work with operators to highlight benefit of delaying point at which gear is lowered	•Reduces noise and annoyance associated with some aircraft overflights •Effectiveness depends on airline procedures	Recommended – reduces noise and potential annoyance

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Operational Evaluation

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New Proposed Measures & Recommendations

#	New Measure	Description	Pros/Cons	Recommendation
	Shift Downwind Flight Track to the South	Shifts the downwind to Runway 06 approximately 1 mile to the south to potential location associated with future parallel runway	•Reduces number of people receiving overflights •May be required for future parallel runway •Slightly increases flight distance •Increases sequencing challenges with flow from north	Recommended – implement when new runway is constructed
	Change Runway 24 to preferred Runway after 10pm	Reduces arriving aircraft overflights of populated areas during nighttime hours	•SEE BOARD FOR DETAILS	Recommended - reduces noise and potential annoyance
	Publish "Jeppesen" Type Pilot Handout	Informs pilots of noise abatement procedures	•Potential for reduced annoyance •Requires integration into each airline's procedures to maximize effectiveness	Recommended – increases pilot awareness
	Install Runway end and Noise Abatement Reminder Signs	Informs pilots of noise abatement procedures	•Reminds aircraft departing RSW that there are noise sensitive neighborhoods located around the airport •Limited benefit for arriving aircraft •Signs must meet FAA requirements and have a cost	Recommended – increases pilot awareness

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Operational Evaluation

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New Proposed Measures & Recommendations

#	New Measure	Description	Pros/Cons	Recommendation
	Change Preferential Runway Use	Change runway operation to favor operations on Runway 24 instead of Runway 06	•Slightly reduces number of overflights on south downwind •Some of the overflights on downwind will be 1,000' higher •Increases departures over the Forest and communities west of airport	Not recommended – Increases flights over communities already being exposed to the highest noise levels
	SHFTY to TYNEE Transition (Estero Plan)	Transitions aircraft from SHFTY waypoint to TYNEE waypoint	•SEE BOARD FOR DETAILS	Not recommended - Focus on other measures
	Increase Glide Slope Angle from 3 to 3.5 degrees	Increases the glide slope angle for arriving aircraft using the instrument landing system (ILS)	•Increases altitude of arriving aircraft once they are established on the glide slope •Moving intercept point or altitude on current ILS can achieve many of same benefits •Rarely implemented by FAA to address noise concerns	Not recommended – only provides benefit once aircraft are established on glide slope
	Publish RNAV departure Procedure for Runway 06	Would establish an RNAV departure procedure for aircraft departing during northeast flow	•Would concentrate wide band of departing flights to a narrow corridor (railroad effect) •Would increase overflights for those areas under the corridor •No corridor stands out for potential routing	Not recommended – no clear corridor for routing of aircraft

Operational Evaluation

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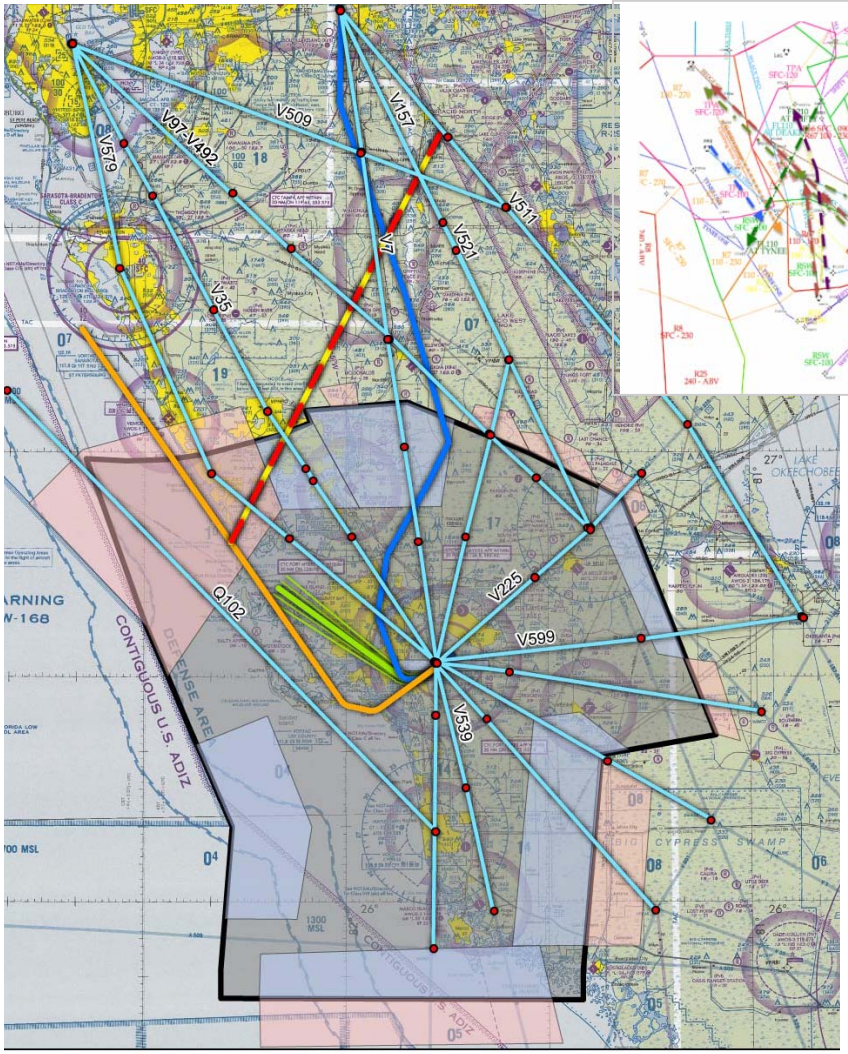
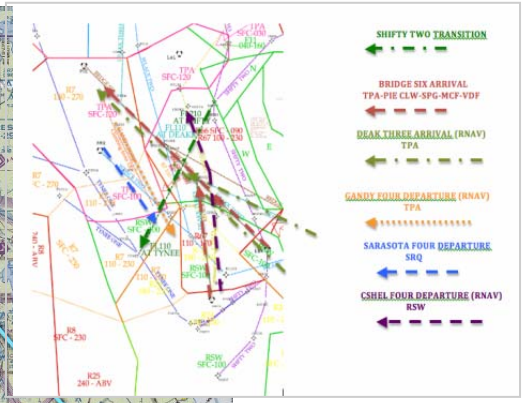
New Proposed Measures & Recommendations

#	New Measure	Description	Pros/Cons	Recommendation
	Extend Aircraft Further Over Ocean Before Turning Toward FMB	Would route aircraft further out over ocean before turning them back toward FMB	•Would establish aircraft on stable flight path before they come over FMB •Increases flight distance and fuel use •Routes aircraft further outside Class C airspace	Not recommended – focus on avoiding aircraft overflights of FMB and raising aircraft altitudes
	Establish Helicopter Noise Abatement Flight Tracks	Would establish specific flight tracks over compatible land uses for helicopters to fly when they ingress and egress the Airport.	•Helicopters are currently in very limited use at the airport	Not recommended – limited application
	Establish Reverse Thrust Restrictions	Limits use of reverse thrusters on jet engines to slow aircraft	•Potential to reduce noise in close proximity to the airport •Potential safety issue	Not recommended – limited concerns noted

Operational Evaluation
SHFTY to TYNEE Transition
(Estero Plan)





Pros

- Routes all aircraft down coast and reduces overflights of Estero and Fort Myers Beach
- Keeps aircraft higher longer
- Reduces flight distance and fuel use

Cons

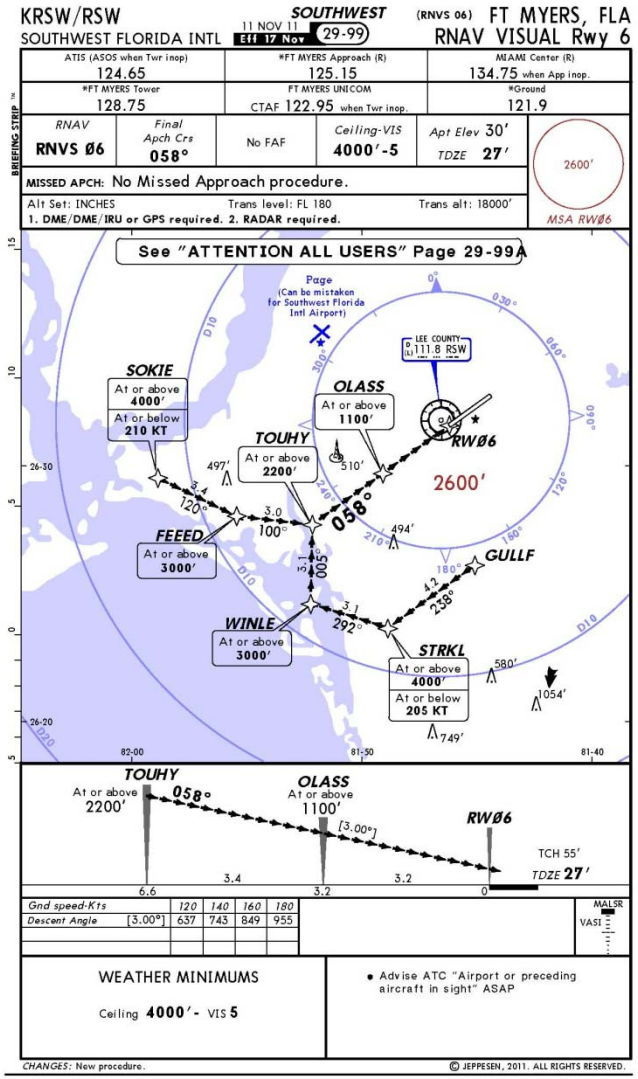
- Creates numerous crossing conflicts to the north
- Requires vectoring of aircraft outside RSW airspace
- Doesn't address local capacity issues – enroute delays during peak periods
- Not supported by the FAA

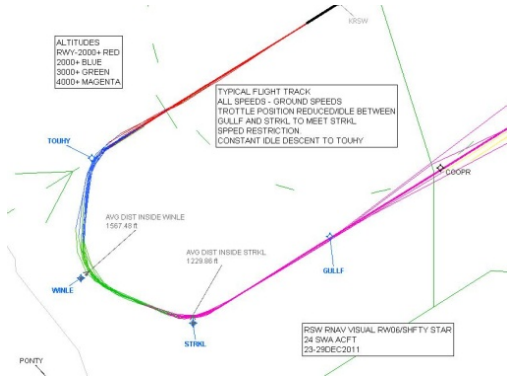
Note: After the FAA determined this transition was not feasible, ESA conducted an independent evaluation and met with the FAA's Air Traffic Eastern Support Manager, the FAA Miami Air Route Traffic Control Center (ARTCC), the RSW FAA Air Traffic Control Tower (ATCT)and members of the Estero Community.

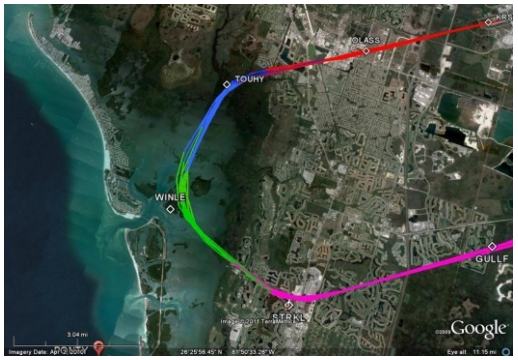
Not Recommended

Conclusion: Explore other measures

Operational Evaluation
Promote New Optimized Profile Descent
(RNAV Visual to Runway 06)







Pros

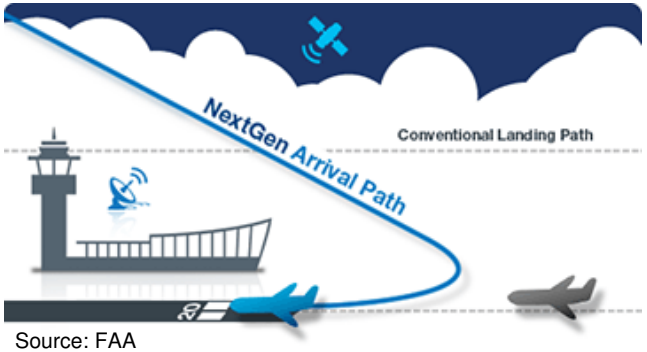
- Reduces potential annoyance along portions of Estero Corridor
- Reduces overflights of Fort Myers Beach
- Maximizes use of back Bay
- Reduces flight distance and fuel use
- Sets up the potential for the procedure to be extended to a higher altitude at some point in the future
- Promoted by Southwest Airlines
- Supported by FAA

Cons

- Can only used by airlines that get prior FAA signoff
- May be difficult to use during peak periods due to sequencing requirements
- Concentrates flights over some areas that may have previously had limited overflights

Recommended

Operational Evaluation
Initiate OPD RNAV Arrival Procedure Earlier



Source: FAA

Involves initiating the new RNAV Visual Optimized Profile Descent (OPD) Approach Procedure for Runway 06 further from the airport. This type of procedure is currently being explored by the FAA. While these procedures may not come on line until some point in the future, they have the potential to benefit communities around RSW.

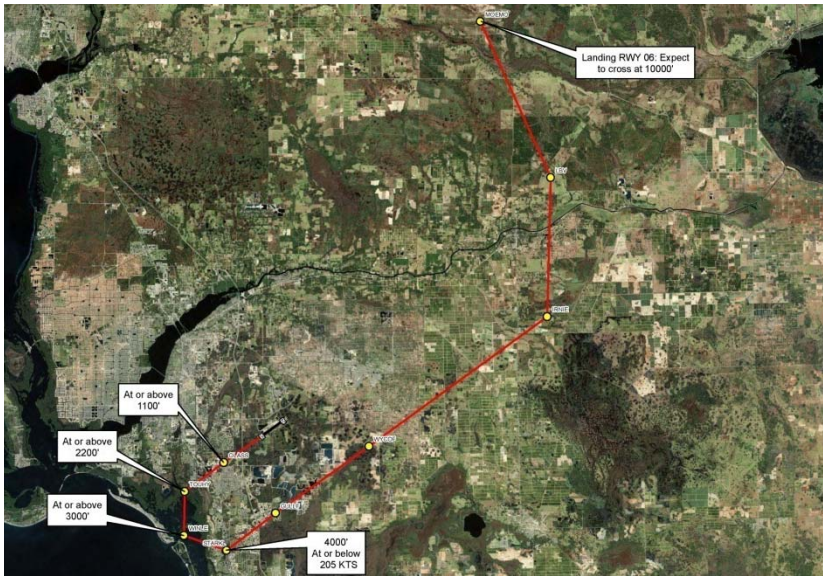
Pros

- Reduces potential annoyance in communities receiving arrival overflights
- Reduces flight distance and fuel use

Cons

- Feasibility still under evaluation

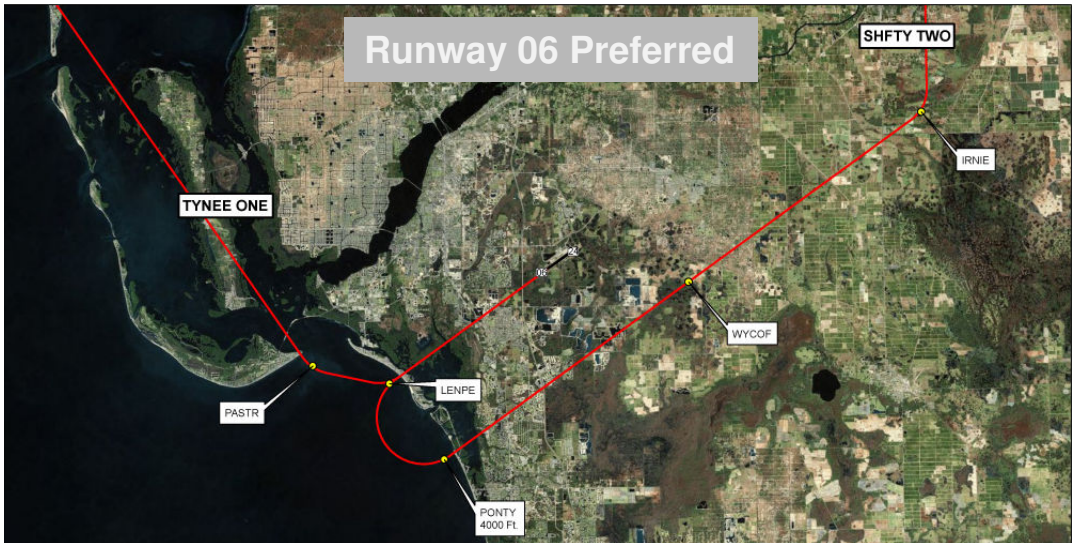
Recently Developed RNAV Visual Procedure

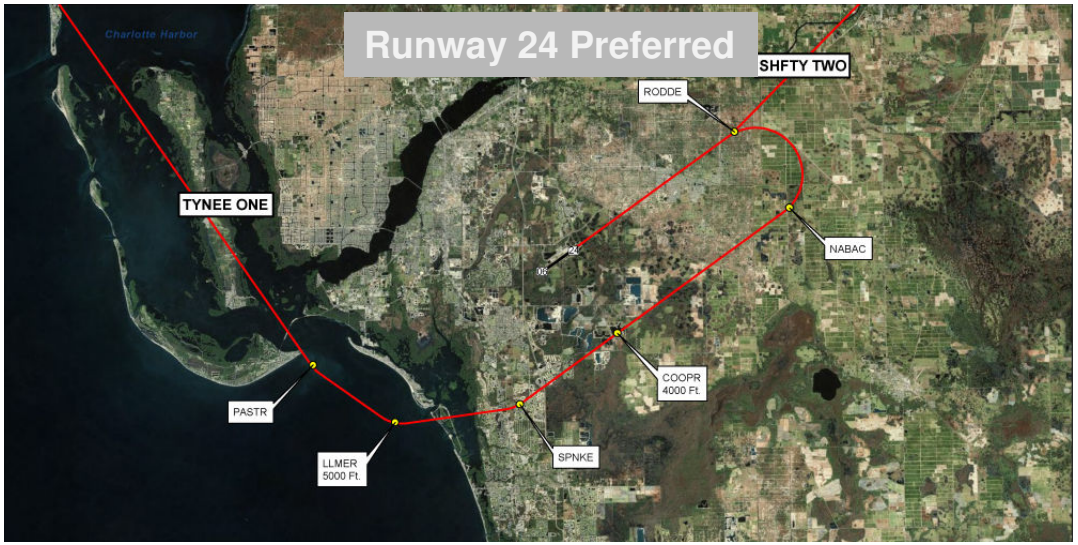


Potential Initiation at Higher Altitude Further From Airport

Recommended

Operational Evaluation
Change RW 24 to Preferred Runway after 10pm





Pros

- Reduces nighttime arrival overflights of Estero Corridor by 55 percent
- Few or no departures during time period

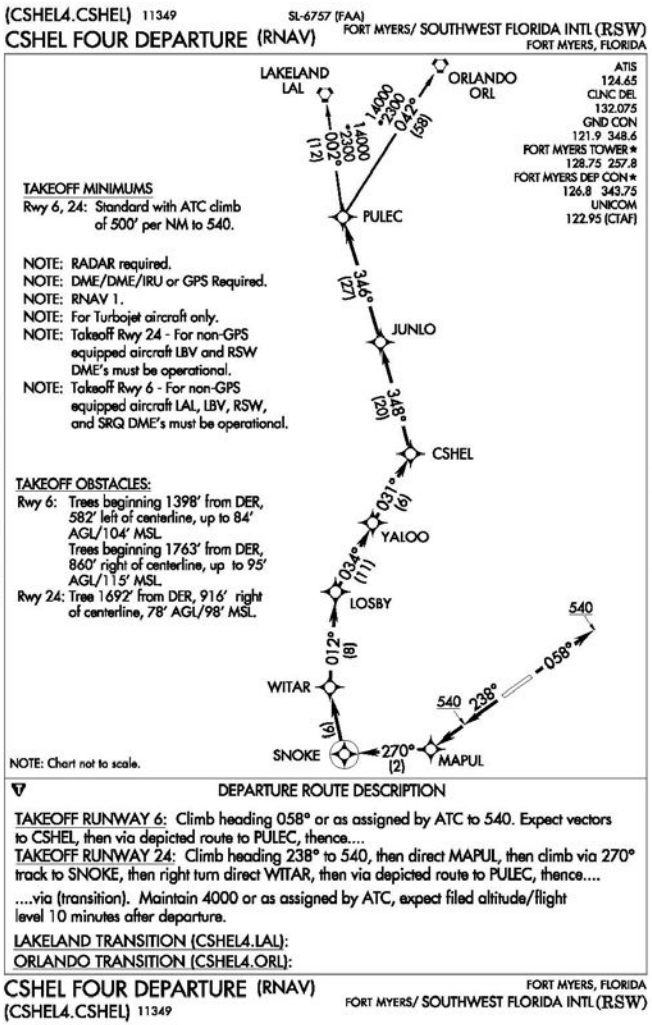
Cons

- Weather conditions may not support shift

Note: Nearly all air carrier activity occurring at the airport after 10 pm consists of arriving aircraft. A majority of these use the SHFTY RNAV arrival procedure. Using Runway 24 as the preferred runway after 10pm would allow these aircraft to avoid transiting the more populated corridors south of the airport without increasing the noise associated with Runway 24 departures.

Recommended

Operational Evaluation
Modify CSHEL FOUR Departure


(CSHEL4.CSHEL) 11349 SL-6757 (FAA)
CSHEL FOUR DEPARTURE (RNAV) FORT MYERS/ SOUTHWEST FLORIDA INTL (RSW)
FORT MYERS, FLORIDA

LAKELAND LAL
ORLANDO ORL
ATIS 124.65
CLNC DEL 132.075
GND CON 121.9 348.6
FORT MYERS TOWER* 128.75 257.8
FORT MYERS DEP CON* 126.8 343.75
UNICOM 122.95 (CTAF)

TAKEOFF MINIMUMS
Rwy 6, 24: Standard with ATC climb of 500' per NM to 540.

NOTE: RADAR required.
NOTE: DME/DME/IRU or GPS Required.
NOTE: RNAV 1.
NOTE: For Turbojet aircraft only.
NOTE: Takeoff Rwy 24 - For non-GPS equipped aircraft LBV and RSW DME's must be operational.
NOTE: Takeoff Rwy 6 - For non-GPS equipped aircraft LAL, LBV, RSW, and SRQ DME's must be operational.

TAKEOFF OBSTACLES:
Rwy 6: Trees beginning 1398' from DER, 582' left of centerline, up to 84' AGL/104' MSL.
Trees beginning 1763' from DER, 860' right of centerline, up to 95' AGL/115' MSL.
Rwy 24: Tree 1692' from DER, 916' right of centerline, 78' AGL/98' MSL.

PULEC
JUNLO
CSHEL
YALOO
LOSBY
WITAR
SNOKE
MAPUL

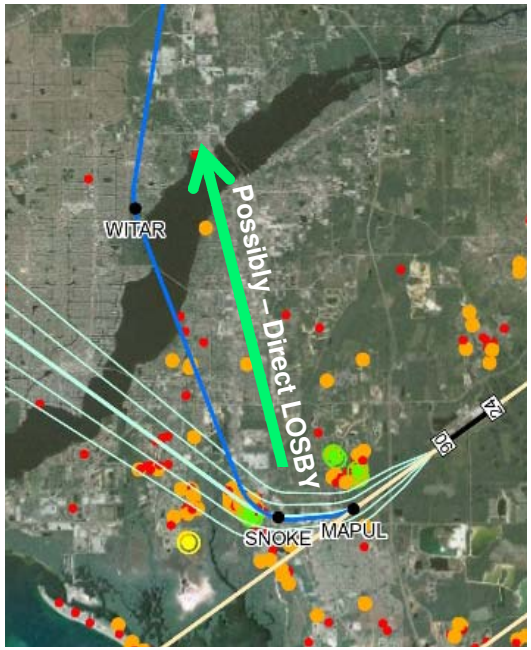
NOTE: Chart not to scale.

DEPARTURE ROUTE DESCRIPTION

TAKEOFF RUNWAY 6: Climb heading 058° or as assigned by ATC to 540. Expect vectors to CSHEL, then via depicted route to PULEC, thence....
TAKEOFF RUNWAY 24: Climb heading 238° to 540, then direct MAPUL, then climb via 270° track to SNOKE, then right turn direct WITAR, then via depicted route to PULEC, thence....
....via (transition). Maintain 4000 or as assigned by ATC, expect filed altitude/flight level 10 minutes after departure.
LAKELAND TRANSITION (CSHEL4.LAL):
ORLANDO TRANSITION (CSHEL4.ORL):

CSHEL FOUR DEPARTURE (RNAV) FORT MYERS, FLORIDA
(CSHEL4.CSHEL) 11349 FORT MYERS/ SOUTHWEST FLORIDA INTL (RSW)

SE-3, 09 FEB 2012 to 08 MAR 2012

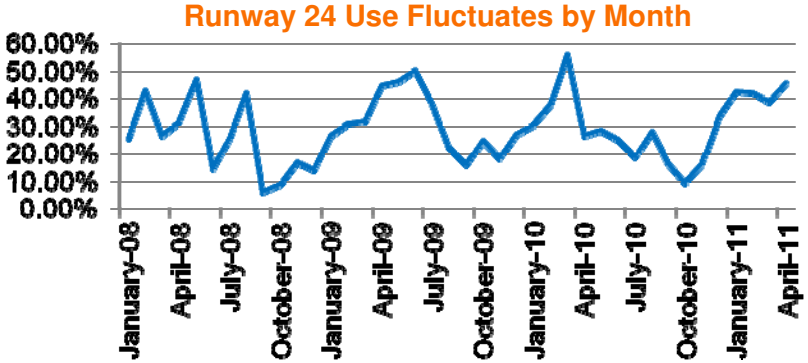


Pros

- Reduces overflights of The Forest – which receives some of the highest noise level overflights
- Maintains use of the Alico industrial corridor during aircraft climbout
- Can be implemented without major modification to procedures

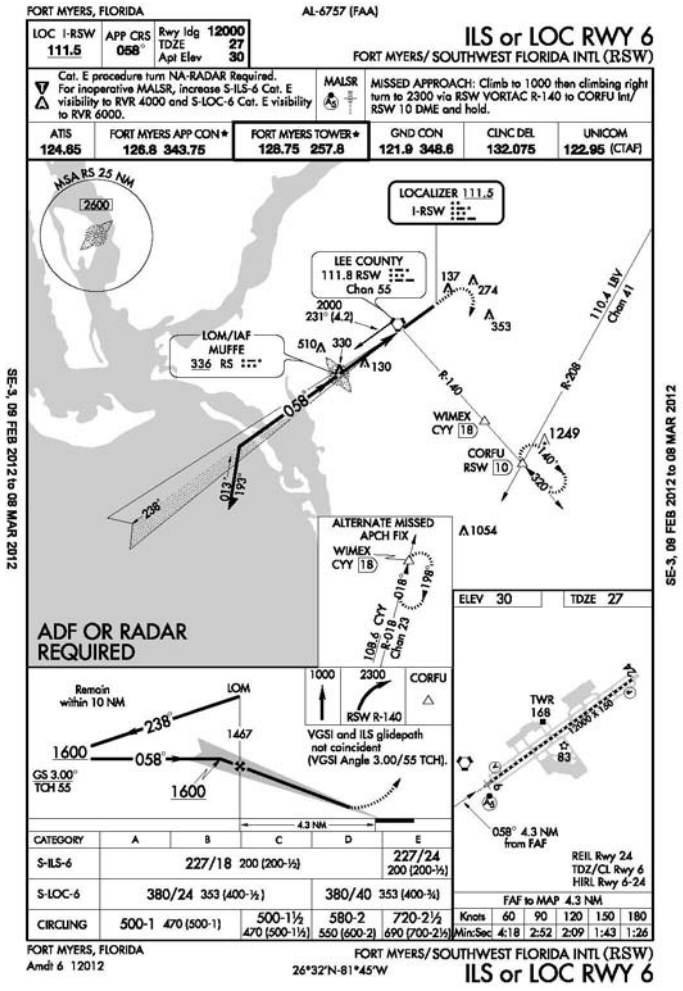
Cons

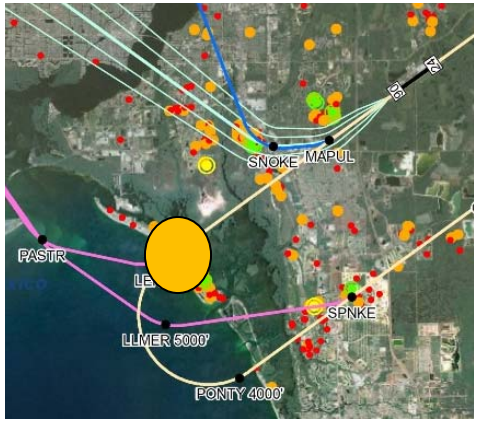
- Only provides benefit during 30 percent of time airport is in a southwest flow
- Increases flights over some areas that may have previously had limited overflights



Recommended

Operational Evaluation
Raise Altitude to 3,000 over Beaches





Pros

- Provides ~6 dB noise reduction at the beach and some reduced noise benefit along the extended flight path
- Current voluntary procedure for visual approaches
- More fuel efficient

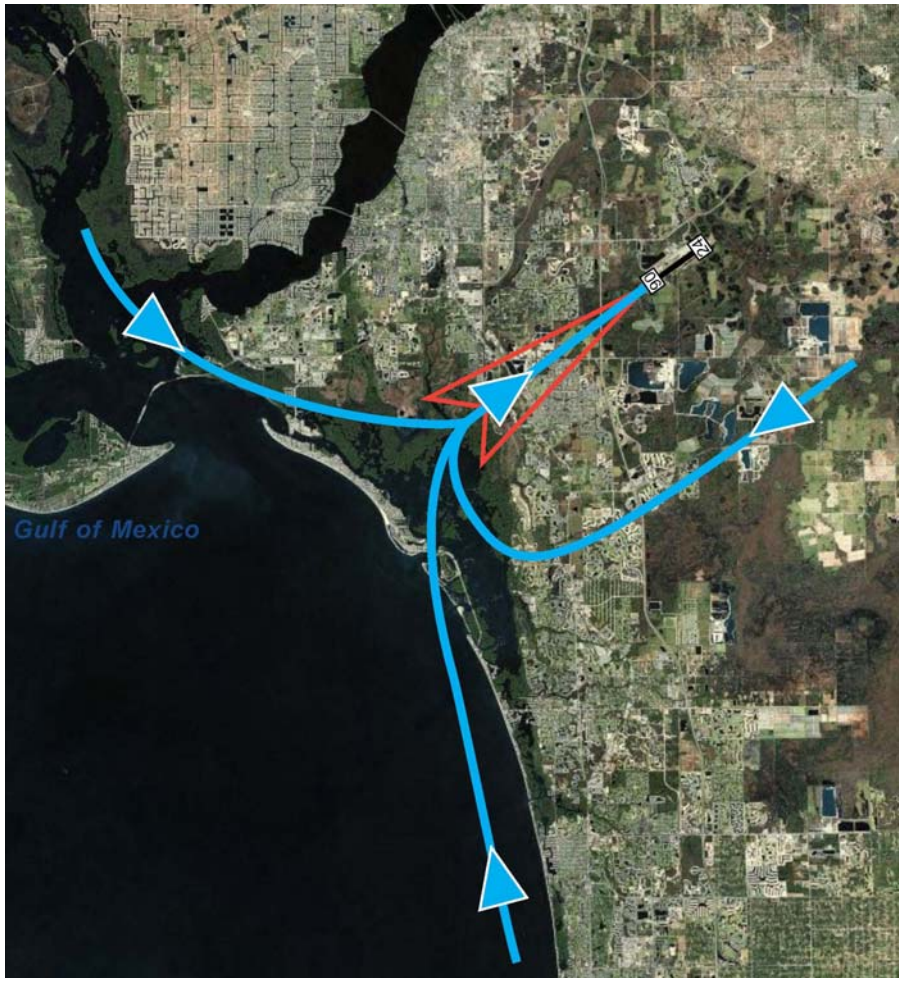
Cons

- Aircraft over beach are outside RSW Class C controlled Airspace
- Sequencing of two aircraft flows (north and south) creates FAA concerns

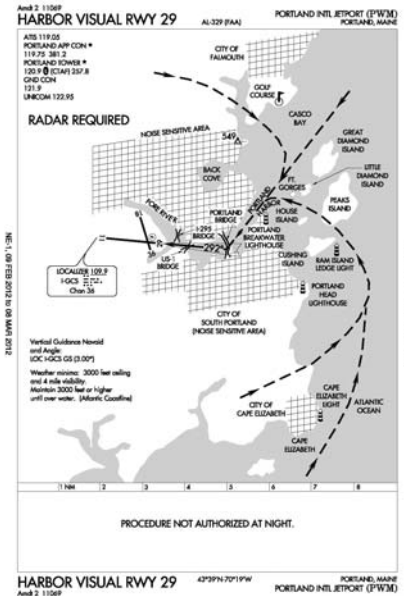
Airport	Class	Approach	Intercept Altitude	Distance
Southwest Florida International Airport	C	ILS06	1600	4.3
Pensacola Gulf Coast Reg. Airport	C	ILS17	1700	4.4
Tallahassee Regional Airport	C	ILS27	1800	5.3
	C	ILS36	1600	4.6
Jacksonville Intl. Airport	C	ILS07	2000	5.9
	C	ILS25	2000	9.6
	C	ILS13	2000	11
Ft. Lauderdale/Hollywood Intl. Airport	C	ILS09L	2500	11.7
	C	ILSZ7R	2500	12.1
Palm Beach Intl. Airport	C	ILS10L	2000	6
	C	ILSZ8R	3000	10.4
Daytona Beach Intl. Airport	C	ILS07L	1700	13.8
Orlando Sanford Intl. Airport	C	ILS09L	2000	10.6
	C	ILS09R	3000	11.8
	C	ILSZ7R	3000	11.2
Sarasota/Bradenton Intl. Airport	C	ILS14	2000	6
	C	ILS32	1800	5.4
Gainesville Regional Airport	D	ILS29	1700	4.6
Northwest Florida Beaches Intl. Airport	D	ILS16	3000	11.9
Melbourne Intl. Airport	D	ILS09R	1600	9
St. Petersburg-Clearwater Intl. Airport	D	ILS17L	1700	5.4
	D	ILS35R	2000	6.1
*Glideslope Int. and FAF descent crossin			2100	6

Recommended

Operational Evaluation
Implement Charted Visual Procedures From North and South



Sample Charted Visual Procedure



Pros

- Limits aircraft over noise sensitive areas
- Can be flown by aircraft that may not be able to fly other approaches
- Both vertical and horizontal navigation criteria can be published (i.e. 3,000' until passing FMB)

Cons

- Can only be used during visual flight conditions

Recommended

Land Use Evaluation
Existing Measures and Recommendations

#	Existing Measure	Description	Pros/Cons	Recommendation
	Update Noise Overlay Zones	Establishes a series of zones around airport to ensure long term compatible land uses.	•Maximizes land use compatibility around airport •Protects land uses around future runway location •Protects land uses associated with future pattern area	Voluntary Measure to Remain

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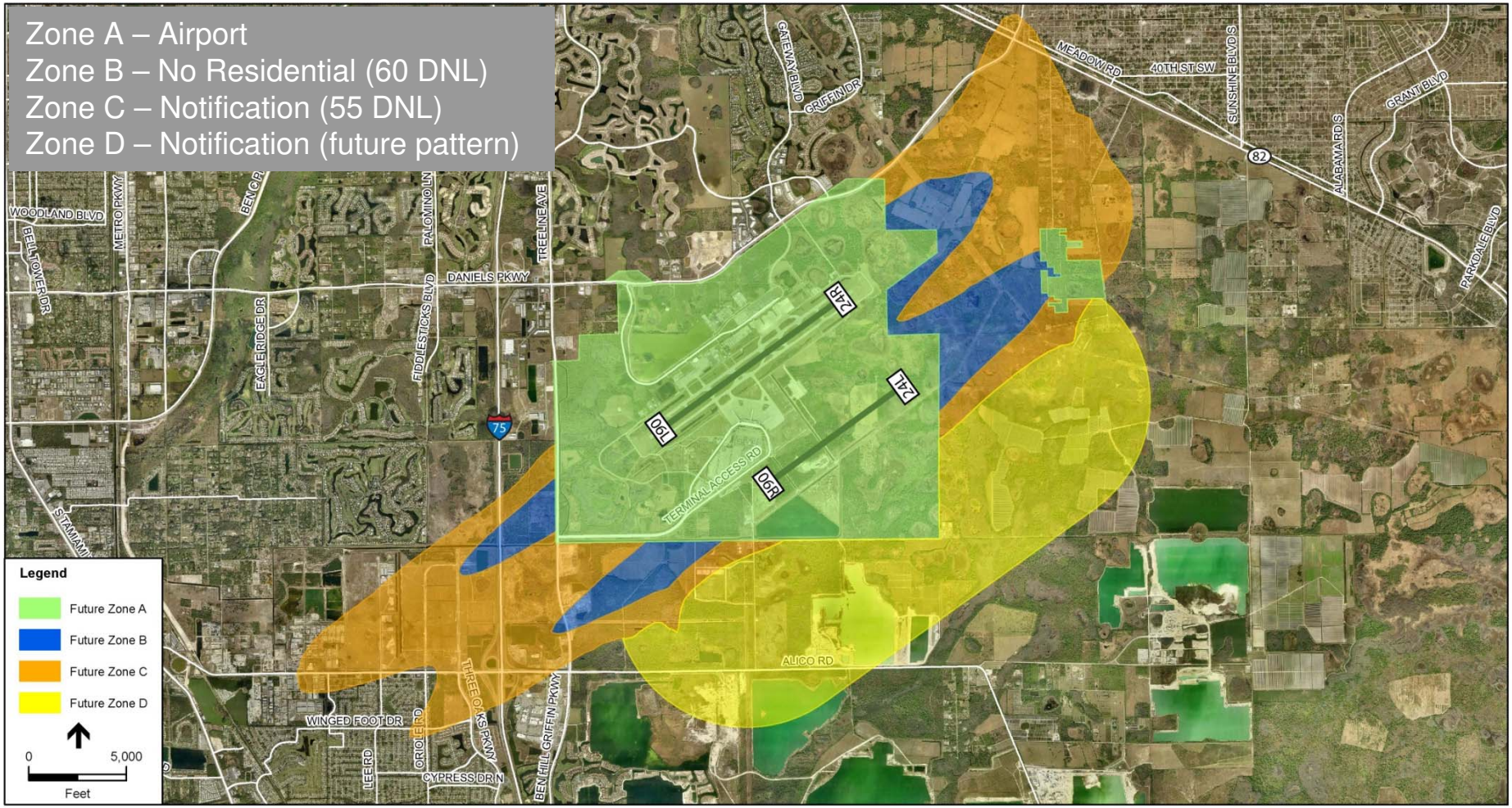
Land Use Evaluation
Existing Overlay Zones



Note: Zones are based on 2020 activity levels in the 2006 Part 150 Study

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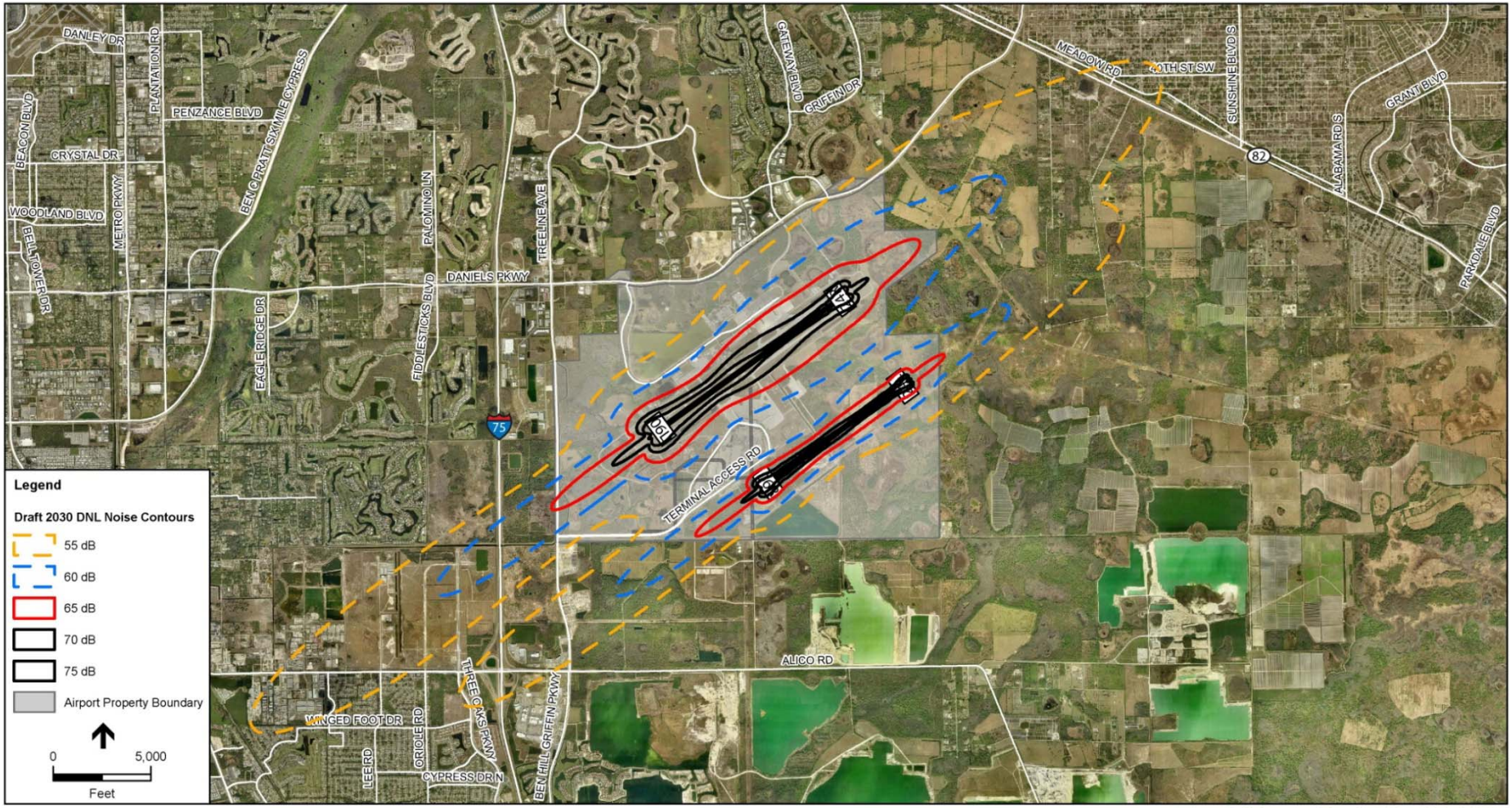
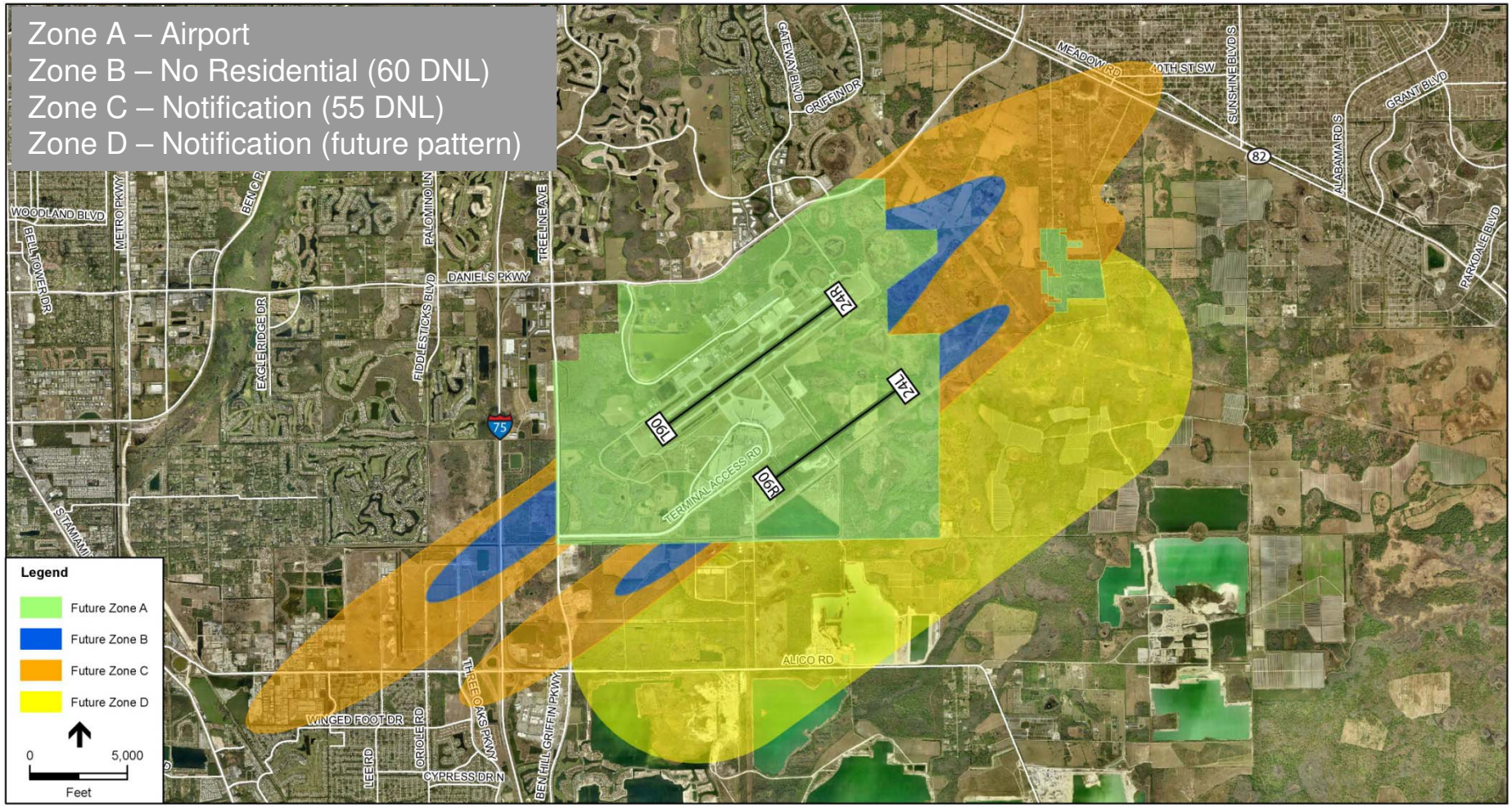
Land Use Evaluation
2030 Projected Noise Contours



Land Use Evaluation
Future Overlay Zones



Note: Zones are based on 2030 activity levels in the December 2010 FAA Terminal Area Forecast

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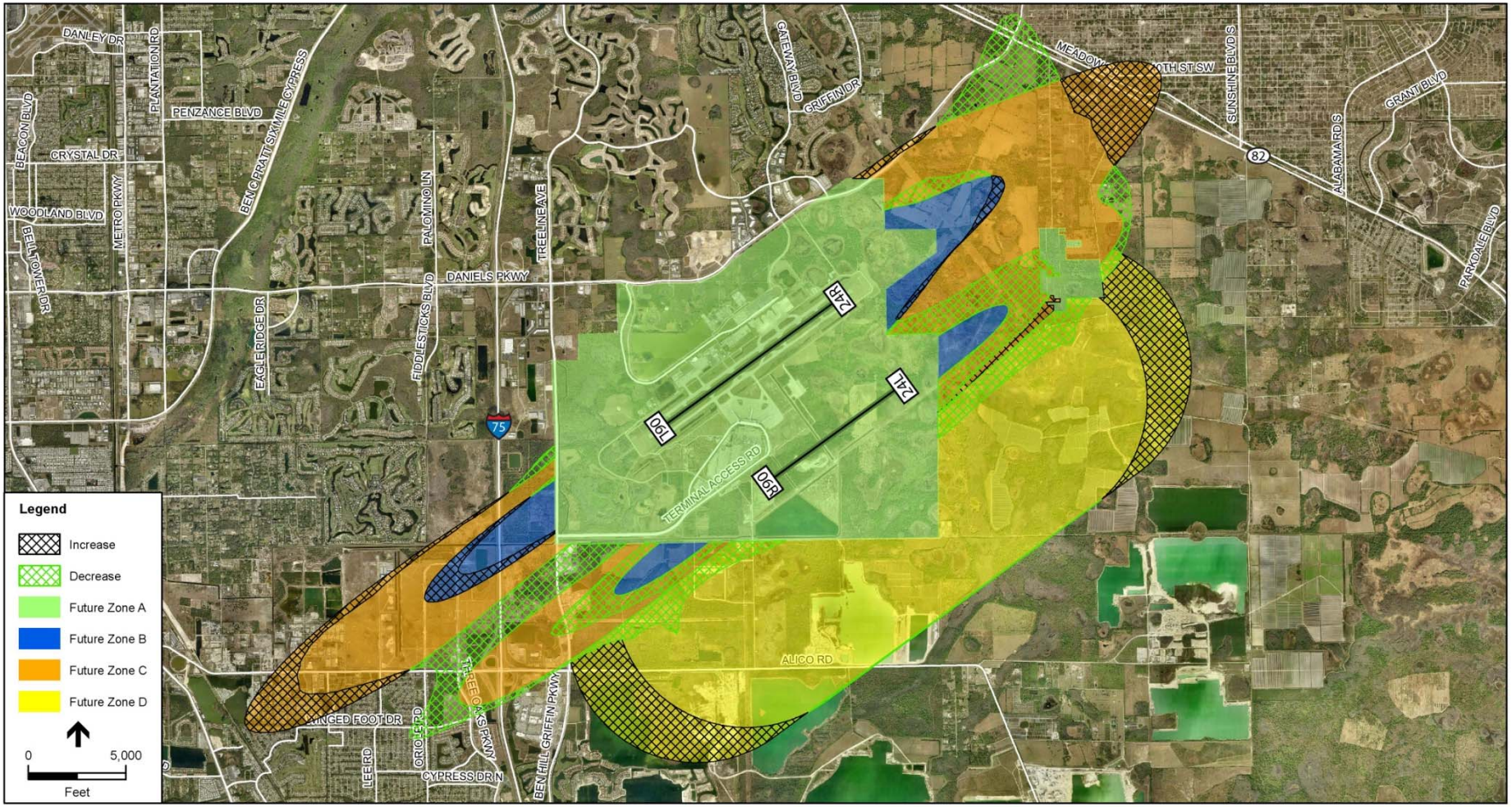
Land Use Evaluation
Overlay Zoning Revisions



RSW Noise Study Schedule

- ✓Data Acquisition/Public Meetings Round #1 – Summer 2011
- ✓Field Measurements and Noise Modeling – Summer 2011
- ✓Draft Noise Contours Developed – Fall 2011
- ✓Round #2 Public Meetings – Fall 2011
- ✓ASMC Status Report – Winter 2012
- ✓Develop/Evaluate Alternatives – Winter 2012
- *Round #3 Public Meetings & Draft Recommendations – Spring 2012*
- Study Recommendations considered by Port Board – Fall 2012
- Submit to FAA – Fall 2012
- FAA Approval Final Approval/Implementation – 2013

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Thanks for your participation in the RSW FAR Part 150 Noise Study