



BUSINESS OF THE CITY COUNCIL CITY OF MERCER ISLAND

AB 5667
February 18, 2020
Regular Business

AGENDA BILL INFORMATION

TITLE:	AB 5667: City Council Letter of Support - East Channel Required Navigation Performance arrivals and departures for Renton Airport	<input type="checkbox"/> Discussion Only <input checked="" type="checkbox"/> Action Needed:
RECOMMENDED ACTION:	Authorize the Mayor to sign a letter recommending FAA take the necessary steps to propose upgrading the priority for Required Navigation Performance procedures for Renton Airport as "Priority 1."	<input checked="" type="checkbox"/> Motion <input type="checkbox"/> Ordinance <input type="checkbox"/> Resolution

DEPARTMENT:	City Council
STAFF:	Salim Nice, Councilmember / Deb Estrada, City Clerk
COUNCIL LIAISON:	Salim Nice
EXHIBITS:	1. Draft February 18, 2020 Letter – Renton Municipal Airport 2. Renton Airport Advisory Committee July 2019 Report
CITY COUNCIL PRIORITY:	1. Prepare for the impacts of growth and change with a continued consideration on environmental sustainability.

AMOUNT OF EXPENDITURE	\$ n/a
AMOUNT BUDGETED	\$ n/a
APPROPRIATION REQUIRED	\$ n/a

SUMMARY

The City of Renton owns and operates the Renton Municipal Airport. In Councilmember Nice's advisory capacity, he has long since advocated for safer and less impactful flight operations out of Renton Airport. In pursuit of this endeavor, he is working with Retired Captain Thomas Imrich, a retired Boeing Experimental Test Pilot and retired FAA administration official, as well as an island resident.

RECOMMENDATION

Authorize the Mayor to sign a letter recommending FAA take the necessary steps to propose upgrading the priority for Required Navigation Performance procedures for Renton Airport as "Priority 1."



MAYOR BENSON WONG
CITY OF MERCER ISLAND, WASHINGTON
9611 SE 36th Street • Mercer Island, WA 98040-3732
(206) 275-7995 • www.mercergov.org

February 18, 2020

Renton Airport Manager - Harry Barrett Jr.
Renton Municipal Airport
616 West Perimeter Road, Unit A
Renton, WA 98057

Subject: FAA development priority for "East Channel" RNP arrivals and departures for Renton Airport

Dear Sir,

In accordance with discussions within the Renton Airport RAAC, this inquiry is regarding the apparent delay in implementation of community beneficial Required Navigation Performance ("RNP") instrument procedures which overfly Lake Washington's "East Channel" to and from Renton Airport.

Restoration of the formerly used RNP procedures over the East Channel pathway or implementing new equivalent RNP procedures, has the potential to provide both safety benefits to operators as well as significant noise relief to surrounding communities. Thus, we are concerned about the delay in implementing these long-promised RNP procedures. The delay has the adverse effect of furthering use of the present undesirable instrument procedures, which unnecessarily frequently overfly our community. Accordingly, we would like to know your plan and schedule to help accelerate implementation the new RNP procedures using a much better path over the East Channel.

It is our understanding from RAAC discussions, that this delay has in part been due to FAA relegating the development of Renton's RNP procedures as Priority 3, rather than considering them as Priority 1. **We recommend that you immediately take the necessary steps to propose upgrading the priority for these RNP procedures for Renton as "Priority 1"**. Considering that RNP departures out of Renton were accepted and used previously (e.g., the "Renton North" departure over the "East Channel"), it is unclear why the intended replacement RNP procedures still have not yet been implemented. However, since the departure of the previous Renton Airport Manager (Mr. Ryan Zulauf), and his excellent efforts to re-establish these RNP procedures, there seems to be little or no action on the part of either Renton Airport or FAA to move forward.

Accordingly, the Mercer Island City Council would now like an update in writing from Renton Airport, as to the status of development and implementation of Renton's RNP arrival and departure instrument procedures. We would like to also know your plan to increase the priority FAA has assigned, with the procedures using an intended pathway optimally designated over the East Channel of Lake Washington.

We would appreciate your reply prior to our next Mercer Island Council meeting which is currently scheduled for March 10, 2020.

Sincerely,

Benson Wong
Mayor

Copy: RAAC Secretary
Renton City Council
Mercer Island City Council
Designated MI Representative to the RAAC - MI Council Member Salim Nice



Mercer Island's Public "Interest" - Renton Airport

Renton Airport Advisory Committee (RAAC)



Renton Airport History

Wiley Post's red Lockheed Orion/Explorer Hybrid, NR12283, at Renton, Washington.

Salim Nice
Deputy Mayor,
Mercer Island, WA 98040

July 20, 2019
Mercer Island, WA



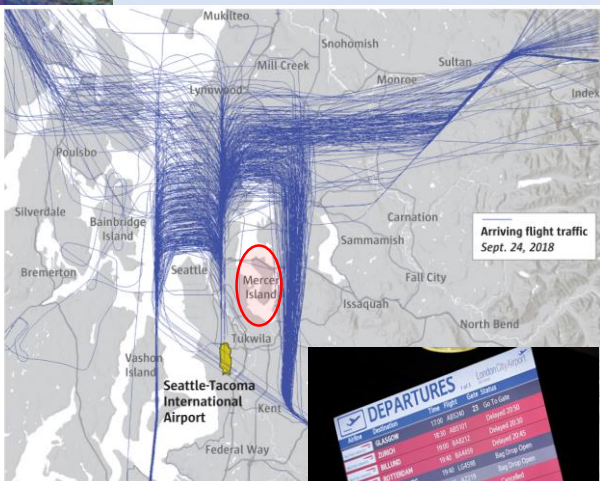
Includes Seattle's Air Traffic

BREAKING POINT (pg 40)

- 49% of June European flights were delayed on arrival
- ATC strikes disrupt French airspace and overflight
- With SES 2+ still stalled, airlines want short-term action
- Rapid expansion by LCCs is contributing to the pressure

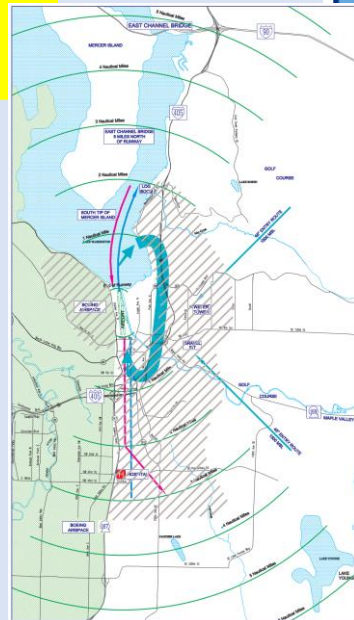
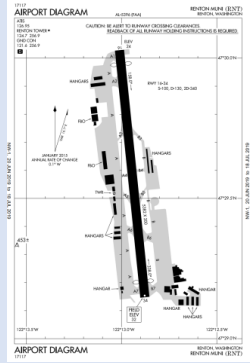
24 hours of arrivals at Sea-Tac International Airport

The tracks for all flights arriving at Sea-Tac on Sept. 24, 2018, illustrate how the key phase of the Greener Skies plan for westside arrivals has not been implemented. Most planes are not turning over Elliott Bay and downtown Seattle as touted, which would reduce overflights north of the city. Instead, westside planes fly as much as 15 miles farther north, turning at various points to head south to the airport.



Arriving flight traffic Sept. 24, 2018

Destination	Time	Gate	Remarks
BLANCO	17:45	23	Go to Gate
CAROL	18:00	23	Delayed 20 min
ILLIAC	18:15	23	Delayed 20 min
BOTTICINI	18:30	23	Delayed 20 min
LORDSBERG	18:45	23	Delayed 20 min
ALAN	19:00	23	Cancelled
WANG	19:15	23	Cancelled
BIKART	19:30	23	Cancelled
HILL OF WAX	19:45	23	Cancelled



Mercer Island In Motion

Legend

- ★ Walk-Bike Distance Center Point (Actual walkable distances may be longer due to street network)
- All Day Transit Service (solid line)
- - - Peak-Only Transit Service (dashed line)
- 🚗 Metro Community Shuttle
- 🚗 Metro Community Shuttle Flexible Service Area (See other side for more information)
- 🚗 Park & Ride
- 🚗 ORCA Revalue Location
- 🚲 Bike Route
- 🚶 Pedestrian Throughway
- 🎓 School
- 🛒 Grocery
- 🏪 Farmers Market
- 📮 Post Office
- 📖 Library
- 🏘 Town Center
- 🌳 Park

Community Destinations

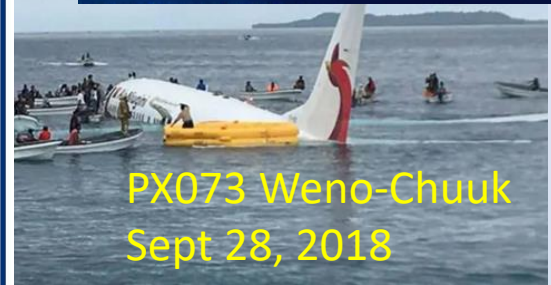
- 📍 Mercer Island Community & Event Center
- 📍 90 Outdoor Sculpture Gallery

Don't see an option that works for you? Turn over to learn more about TripPool!

1/4 mile 1/2 mile
5 min 10 min
3 min

FAA's Current Renton Instrument Approach

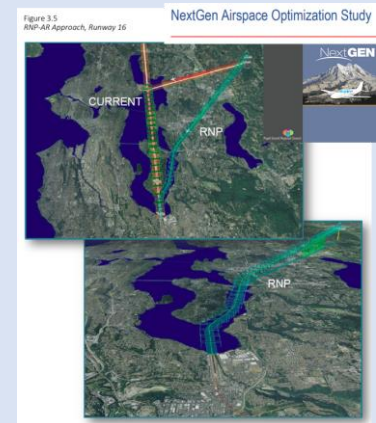
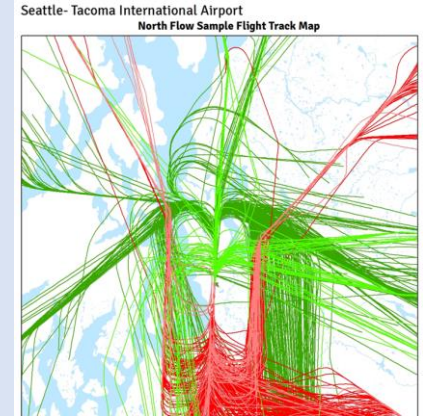
A much QUICHER and safer "RNP based" Instrument Approach



PX073 Weno-Chuuk Sept 28, 2018

Mercer Island “Interest” – Renton Airport *...reference Renton Airport and regional aircraft activity and airspace use* *(Mercer Island Issues and Considerations)*

- **Community Aircraft Noise overflying Mercer Island or near Mercer Island**
- **Safety of overflying aircraft arriving to or departing from Renton airport**
- **Assuring Airport and Aircraft Environmental Compatibility reference MI interests, including both air and water, for Lake Washington and the Cedar River**
- **Renton and regional airport traffic patterns affecting MI community noise or safety**
- **Renton and Boeing Field Airports serving as an Emergency Preparedness asset for MI**
- Other Nearby airports serving as an Emergency Preparedness asset for regional disaster response
- General Regional Economic well being (Boeing; regional employment) - Economic Development
- Nearby relevant transportation access (via GA operations) for MI Citizens or businesses
- Recreational Opportunities for MI Citizens and the region (e.g., GA/recreational flying)
- Opportunities and impacts for MI and adjacent community regarding seaplane operations
- Renton Airport role as a “reliever” airport for SEATAC and Boeing Field and Paine Field congestion



Mercer Island's Interest in Renton Airport Renton Airport Revised Master plan

// PARTICIPANTS AND PROJECT SPONSOR

The Airport Master Plan is being conducted under the direction of the City of Renton, with ninety percent (90%) financial assistance from the FAA.

The Renton Airport Advisory Committee (RAAC) will serve as the study committee for the project. The RAAC is comprised of Renton residents, airport tenants and stakeholders and a representative from the City of Mercer Island. The RAAC will provide the foundation for stakeholder outreach and help to guide development of the plan. Participation in the plan development process will be facilitated through several public meetings and on-site visits, as well as targeted coordination with numerous individuals, groups, and entities representing diverse interests and expertise. These meetings will be scheduled during the course of the study, offering opportunities to interested individuals to become involved in the study process.

The public is invited to attend all public meetings and encouraged to contribute thoughts and ideas in the creation of this important plan that will help direct long-term development at Renton Municipal Airport.

For specific information concerning the details and progress of this Airport Master Plan, please visit the Renton Municipal Airport link on the City of Renton's website at <http://rentonwa.gov/living>

Or please contact:
Ryan Hayes, Project Manager at ryan.hayes@meadhunt.com

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Master Plan

Renton Municipal Airport/
Clayton Scott Field

WILL ROGERS/WILEY POST MEMORIAL SEAPLANE BASE

Introduction

Renton Municipal Airport (RNT), owned and operated by the City of Renton, serves general aviation needs of Renton and the communities on the eastside of Lake Washington. The Airport also accommodates Boeing, the worlds largest aerospace company.

The Airport is a self-supporting business entity within the City of Renton and does not rely on general tax revenues for its operation and capital costs. According to the 2012 Washington Aviation Economic Impact Study, the total estimated regional impact from Renton Municipal Airport businesses is over \$6.2 Billion.

// Airport Sustainability Plan and the Airport Master Plan
An Airport Sustainability Management Plan (SMP), completed in 2012 provides the overall policy structure for the ownership and operation of the Airport over the long term. The Airport SMP is based on community and local values and has measurable metrics. An Airport Master Plan is a 20-year physical development plan for an airport.

// Airport Master Plan – What is it and Why Now?
The Airport Master Plan was last completed in 1997, and was partially updated in 2009. Because airport staff have been very successful in implementing improvement projects, the majority of the Capital Improvement Projects envisioned in the 2009 update to the Airport Master Plan have been completed. Without a current Airport Master Plan, the Airport will be unable to continue to receive landing for capital projects from the Federal Aviation Administration (FAA). A major goal of the Airport Master Plan is to align the future improvements with the Airport's Sustainability Management Plan and to reassess the goals, objectives and initiatives that outlined the Airport's approach to becoming more financially viable and operationally efficient while at the same time conserving natural resources and being socially responsible.

// PURPOSE OF THE STUDY
The emphasis of this Airport Master Plan is on the physical development of airport property to meet aviation demand; including environmental issues related to the Airport's emissions (noise and compatible land use planning, natural features, and man-made infrastructure); analysis of potential airside development alternatives; and on- and off-airport development activity that allows the Airport to maximize its potential to be a self-sufficient business unit.

The purpose of the Airport Master Plan is to provide a long-term physical development plan for the Airport that will:

- Be based on the goals outlined in the 2012 Sustainability Management Plan;
- Identify space for potentially needed facilities;
- Provide an on-airport land use plan that considers the highest and best use of limited airport parcels;
- Be compatible with the environment, land uses adjacent to the Airport, other modes of transportation, and other airports in the region; and
- Be developed within federal, state, and local regulatory guidelines and legal parameters.

// THE PROCESS AND SCHEDULE
The master planning process is scheduled for completion in early 2019.

Following a comprehensive analysis of facility needs and alternatives, a recommended airport development plan will be prepared that will take both existing and projected conditions into consideration, as well as input from residents, the Renton Airport Advisory Committee (RAAC), Airport Staff, and the Federal Aviation Administration.

The Renton Municipal Airport Master Plan will be based on twenty-year projections, and could potentially result in recommendations for operational and aircraft procedures, airport facilities development, and guidelines for financial implementation.

The planning process for Renton Municipal Airport will involve various major tasks, including:

- Inventory and analysis of existing conditions at the Airport;
- Determination of aviation activity forecasts;
- Analysis of development alternatives to enhance safety and meet current FAA design standards;
- Preparation of a plan for airport improvement, environmental protection, and compatible development of the Airport with its environs;
- Preparation of costs and schedules necessary to formulate a long-range Capital Improvement Plan;
- Development of a financial program for project accomplishment.

...estimated regional impact from Renton Municipal Airport businesses is over \$6.2 Billion.

Renton Municipal Airport/
Clayton Scott Field

WILL ROGERS/WILEY POST MEMORIAL SEAPLANE BASE

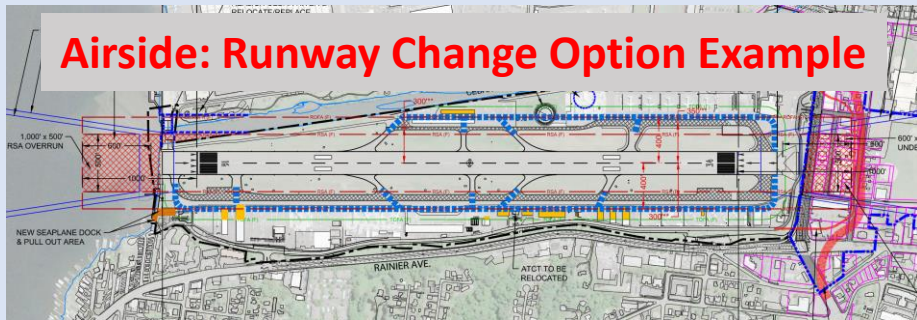
Potentially up to \$100M to \$120M
New Federal *AIP Investment in Renton Airport

* AIP – FAA Federal "Airport Improvement Program"

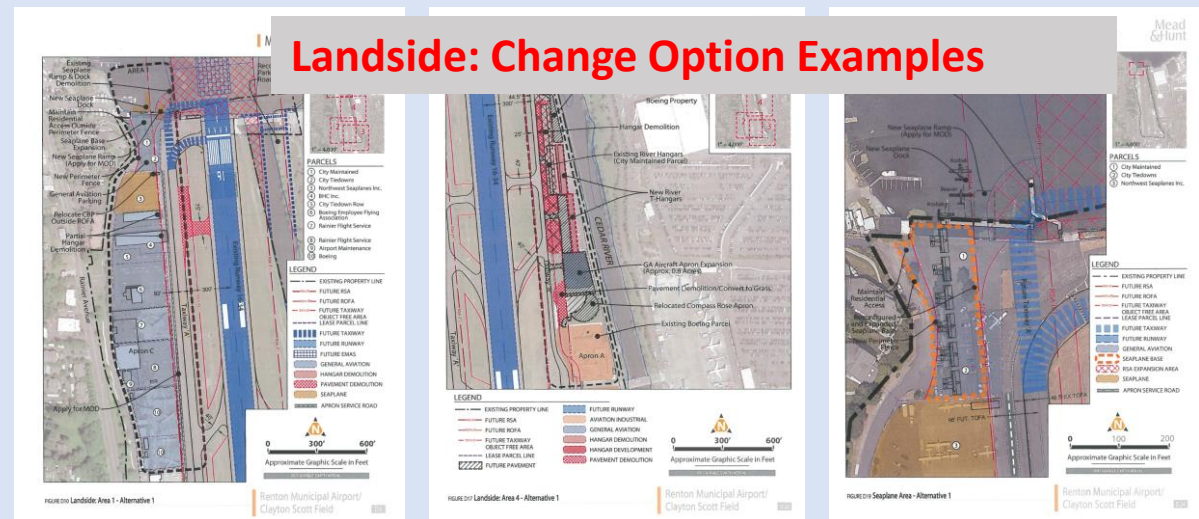
What's happening at Renton Airport... involving Mercer Island interests?

- Renton Airport Master Plan Revision – Prelude to Airport Improvement Plan (AIP) investment - \$100M Plus?
- “Ups the FAA “Airport Classification” from Category B to D – allegedly for more safety... for more ops & bigger jets
Proposed Airside changes: Runway Revision options – adds safety areas – including into Lake Washington
Proposed Landside Changes: Airport Surface Revision options – to Industrial Areas, Taxiways, Parking, Hangars
 (some proposed options potentially allow for more space for more GA operations, including for larger BizJets)
- Potential for more and larger GA aircraft operations at Renton Airport* **e.g., Netjets to a PC12 Turboprop, already routinely operate 24/7 to RNT*
- Boeing operation essentially stays the same, with previously disclosed plans (Note: by 2013, 40% of the world’s jetliner fleet had been safely built at Renton without needing these proposed new Renton Airport changes – Boeing apparently did not request these changes, or any of the proposed GA ops or area related changes.
- Renton is increasingly being used as a GA reliever airport for the entire region, especially for 24/7 GA and BizJet ops

Note: The Renton airport has previously safely accommodated building well over 15,000 transport and tanker jets, and other military aircraft, without the need for any of these proposed new Airport Master Plan changes. The changes are apparently being spurred by changes to recent FAA “Recommended” airport design criteria, the desire for Renton Airport to be eligible for Federal AIP money (\$100M plus), the desire to satisfy GA increasing operations demand, the desire to host more GA and larger GA BizJet operations, and arguably the potential to have Renton Airport serve as an increasing regional reliever airport for Boeing Field, SEATAC, and Paine Field, now that commercial passenger operations have been introduced.

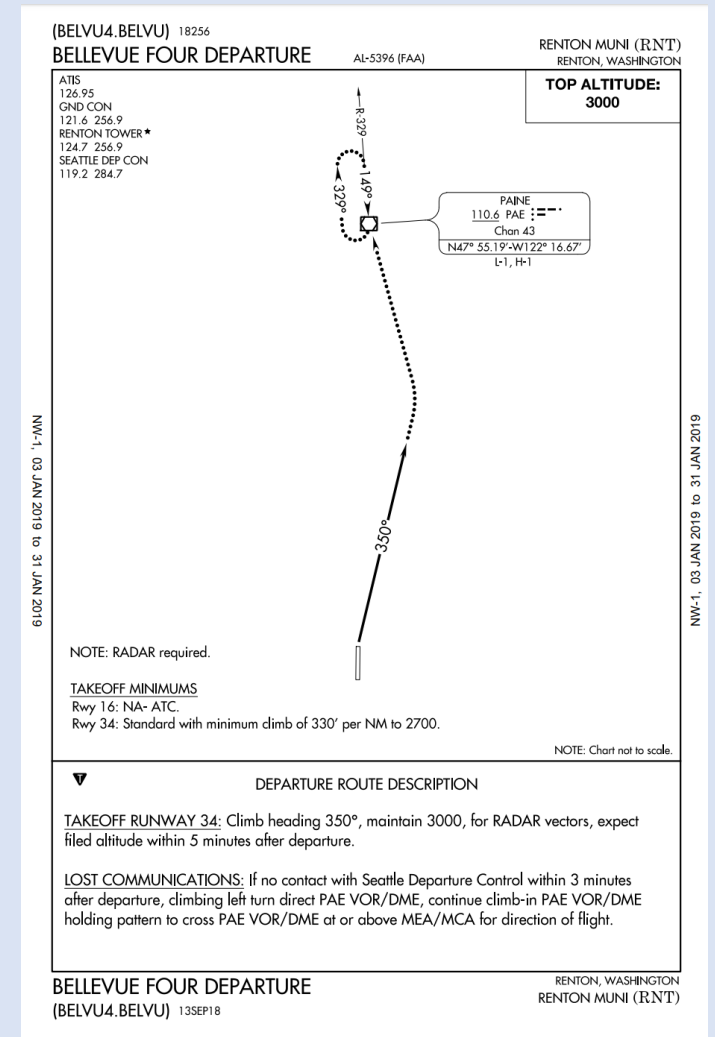
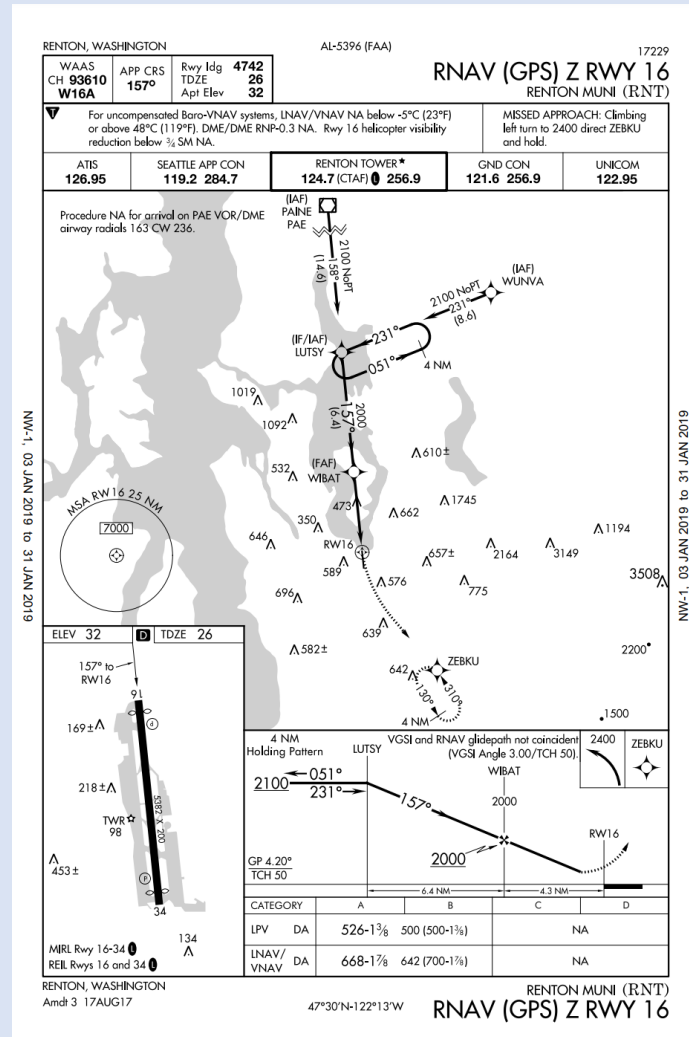
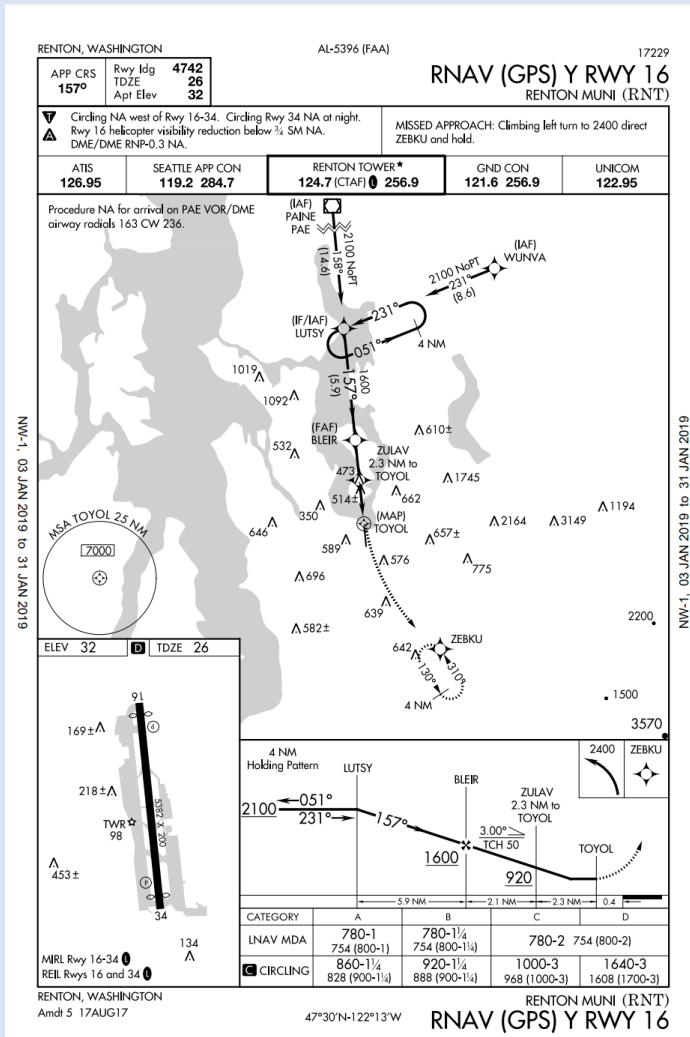


Note: Renton airport officials hope that over the next several years, the daily use of their municipal airport, now called the Clayton Scott Field, will go from the 232 planes today to 320 by 2024. Officials predict the number of multi-engine and corporate jets based at Renton will increase by 45, with about 20 corporate jet flights per day. About two corporate jet flights currently leave the airport each day.



Current Renton Airport Instrument Procedures

Arrivals and Departures Directly (unnecessarily) over mid-Mercer Island



Bryn Mawr goes to the Navy and City of Renton

Renton Airport History

early 1940s and WWII to the jet era and 1980s



XPB-1 - The Model 344 design offered by Boeing was chosen, and a contract for 57 aircraft was awarded on 29 June 1940. The designation given to the type was PBB for Patrol Bomber, Boeing, the first aircraft of the PB category built by Boeing for the Navy. To build the large PBB, Boeing started construction of a new lakeside factory in Renton, Washington, that was owned by the US Navy. However, the prototype was constructed mostly in Seattle, and was moved to Renton only for completion.

KRNT's land was transferred from its private owners to the state of Washington and to the Federal government in 1941 as US entered WWII. The XPB-1 Sea Ranger for the Navy was cancelled. One was constructed when the order was cancelled to build **B-29s** for the US Army Air Force.

The C-97 was the Army Air Forces (AAF) cargo/transport version of the B-29. Between 1943 and 1950, 74 Stratofreighters were ordered; the first flight occurred on 15 November 1944. A tanker version (KC-97) was introduced in 1950 using the "flying boom" refueling system, and all subsequent USAF contracts for C-97s were for tankers. In all, 890 aircraft were ordered, 74 C-97s and 816 KC-97s.



City of Renton - Boeing KC-135A 55-3118 "first flight" 31 August 1956: Alvin Melvin ("Tex") Johnston; Richards Llewellyn ("Dix") Loesch, Jr..

There were 888 **C-97s** built between 1947 and 1958. Of those, 219 were adapted as KC-97E and F tankers and 592 were KC-97G models.

The plant re-opened in 1948 to build the **C-97** became the basis for the Boeing 377. Boeing built 883 C/KC-97s and 56 377s at Renton.



A total of 820 **KC-135s** and 1,010 **707s** were built at Renton, including 154 Boeing **720s**.

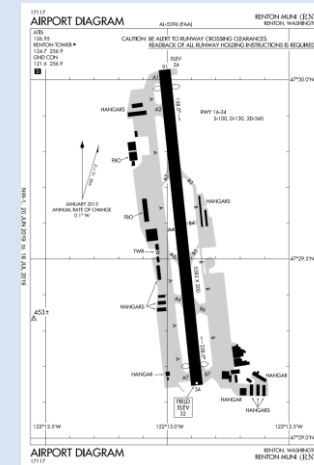
Between 1963-1984, all 1,832 **B727s** were built at Renton.

The first 4 **747s** built were refurbished at Renton."

Renton Airport History

Renton Production Numbers (as of Feb 2013):

- 1 x XPPB-1 Sea Ranger
- 1,119 x B-29A Superfortress
- 24 x TB-50H Superfortress
- 888 x C/KC-97 Stratofreighters
- 1 x 367-80 (Dash 80 prototype)
- 820 x C/KC-135
- 1,010 x 707/720**
- 1,832 x 727**
- 1,050 x 757**
- 24 x Jetfoil commercial hydrofoil ships
- 6 x PHM USS Pegasus Class Missile-ships
- 1,114 x 737-200 (1967- 1988)**
- 1,113 x 737-300 (1984-1999)**
- 486 x 737-400 (1988 – 2000)**
- 389 x 737-500 (1990-1999)**
- 69 x 737-600 (1998 – 2006)**
- 1,089 x 737-700 (1997 – 2013)**
- 111 x 737-700 BBJ**
- 15 x 737-700C**
- 14 x 737-700 AEW&C**
- 2,809 x 737-800 (1998 – 2013)**
- 21 x P-8A/I**
- 18 x 737-800 BBJ**
- 52 x 737-900 (2001-2005)**
- 155 737-900ER (2007-2013)**
- 6 x 737-900 BBJ**



All 1,050 **B757s** were built in Renton

All but 271 (Plant 2) **B737s** were built in Renton. **10,314** as of Oct. 2018; **4700** orders for Max (Sept 18)

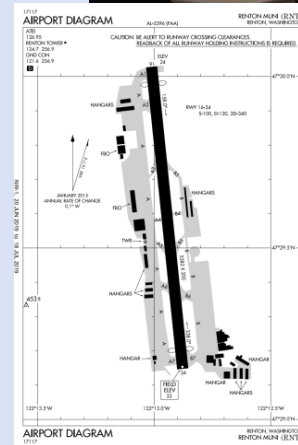
By July 2013 - 40% of the world's jetliner fleet has been manufactured at Renton.
Renton had produced an astonishing total of over 15,000 aircraft making it one of the most prolific aircraft factories, and the most prolific jetliner factory in history.

Mercer Island City Council's engagement with Renton Airport... ***(MI City Council's Representative to the RAAC is a designated "Voting Member")***

Mercer Island City Council Representative to the Renton Airport Advisory Committee (RAAC)

MI Representative Roles and responsibilities:

- **Routinely Attend RAAC Meetings**
- **Review Renton Airport Master Plan Revisions**
- **Vote on various RAAC Proposals and Alternatives**
- **Review and Comment on Renton Airport Operations, Flight Trajectories, and other matters of concern to MI (e.g., safety)**
- **Make recommendations to the RAAC for airport matters of interest to the Mercer Island Council and community**



Mercer Island City Council's engagement with Renton Airport... (MI City Council's Representative to the RAAC is a designated "Voting Member")

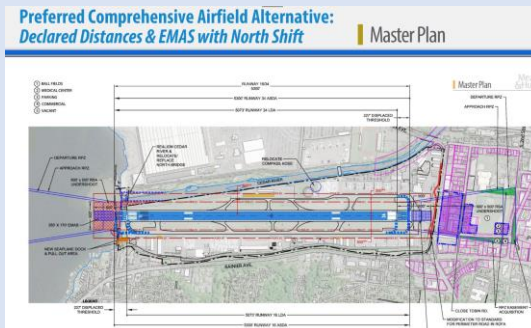
MI City Council Representative to the RAAC - Participation, reviews, votes, and recommendations since 2018:

- **Routinely Attended RAAC Meetings*** Attended RAAC Meetings* - Feb 20, 2018; May 8, 2018; August 28, 2018; January 8, 2019; June 4, 2019; June 25, 2019 (*Note: due to the standing schedule conflict with MI City Council Meetings held on Tuesday evenings, the same time as RAAC Meetings are normally held, a stand-in representative for the MI Council Member is used to attend the RAAC, with all votes and recommendations pre-coordinated with the MI Council member RAAC representative)
- **Comments on Renton Airport Master Plan Proposed Revisions:** Is the FAA Airport reclassification of Renton Airport from Category B to Category D actually needed or appropriate? It is arguably not justified. Support alternative Master Plan proposals which continue optimum support for "Industrial Use" (i.e., Boeing Production) so as to minimize the number of GA flight operations and noise exposure from overflying Mercer Island; Do not implement proposals which further increase GA flight operations, or increase the size or noise of more GA jet/turboprop operations; do not make changes to the airport that potentially facilitate introducing commercial service to Renton (as was the case at Paine Field, in spite of decades of regional opposition to Paine Field being a candidate for initiating commercial passenger service); maximize protection of the environment in any runway or landside proposals implemented – e.g., do not adversely affect or build into Lake Washington or the Duwamish river.
- **Comments on Renton Airport Operations and Flight Trajectories:** Maximize use of flight trajectories over the East Channel (water route) for operations into and out of Renton airport, and minimize use of any trajectories over the middle of the Island (e.g. over Island Crest Way). This includes for instrument flight operations (i.e., implementing RNP departure and arrival procedures over the East Channel for Renton – as were successfully used for decades, and were inappropriately phased out by FAA a decade ago); Phase out use of trajectories which fly low over south end schools and residences (e.g., shift emphasis away from the present RNAV 16 Approach and Bellevue 2 Departure which overfly MI, to better and safer procedures which overfly the East Channel). Support Master Plan alternatives proposals which continue optimum support for "Industrial Use" at Renton, rather than expansion of Non-Boeing production related operations – noting the importance of the Boeing operations to the region, country, and internationally, for both jobs and financial consequence).
- **Votes on various RAAC Proposals and Alternatives** — Assert that based on 7 decades of safe Renton Airport operations, with Boeing having constructed over 40% of the global jet transport fleet, and 1000s of military aircraft at Renton, there seems to be no valid reason for FAA to now be re-classifying Renton Airport, requiring expensive modifications totaling over \$100M tax dollars. The consequence of these proposed changes otherwise might be to potentially increase future Renton Airport jet operations, preparing to increase the numbers of non-Boeing large jet aircraft using Renton airport. Such changes potentially could have an adverse effect on both noise and safety on Mercer island. Accordingly, any RAAC votes by MI have been broadly along the lines of recommending no changes to be made at all, or selection of any alternatives which reflect minimal airport change, while minimizing environmental adverse consequences.

Airside: Consultant, Airport, RAAC, or City's Recommendations

- South Shift... or North Shift into the Lake
- Add Safety Areas (EMAS)

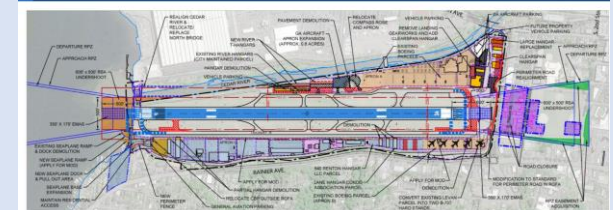
Renton City Council: Preferred Airside Alternative 5
The Renton City Council has determined that Airside Alternative 5 (declared distances and EMAS with north shift) is the preferred airside alternative to the Master Plan.



Landside: Consultant's Proposed Alternatives



Conceptual Development Plan (CDP)



FAA's Reclassification of Renton Airport "B" to "D"

Example - Revised Criteria* used by FAA

*Recommended Criteria for AIP Fund Qualification



U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Consolidated AC includes Change 1

Subject: Airport Design Date: 9/28/2012 AC No: AC 150/5300-13A
Initiated by: AAS-100 Change:

1. What is the purpose of this advisory circular (AC)?

This AC contains the Federal Aviation Administration's (FAA) standards and recommendations for airport design.

2. Does this AC cancel any prior ACs?

AC 150/5300-13, Airport Design, dated September 29, 1989, is canceled.

3. To whom does this AC apply?

The FAA recommends the standards and recommendations in this AC for use in the design of civil airports. In general, use of this AC is not mandatory. The standards and recommendations contained in this AC may be used by certificated airports to satisfy specific requirements of Title 14 Code of Federal Regulations (CFR) Part 139, Certification of Airports, subparts C (Airport Certification Manual) and D (Operations). Use of this AC is mandatory for all projects funded with federal grant monies through the Airport Improvement Program (AIP) and/or with revenue from the Passenger Facility Charges (PFC) Program. See Grant Assurance No. 34, Policies, Standards, and Specifications, and PFC Assurance No. 9, Standards and Specifications.

4. Are there any related documents?

Related documents to this AC are indicated in paragraph 108.

5. What are the principal changes in this AC?

This AC was substantially revised to fully incorporate all previous Changes to AC 150/5300-13, as well as new standards and technical requirements. This document was reformatted to simplify and clarify the FAA's airport design standards and improve readability. Users should review the entire document to familiarize themselves with the new format. Additional principal changes include:

- a. A new Runway Design Code (RDC) designation

AC 150/5300-13A

9/28/2012

- b. An expanded discussion on Declared Distances
- c. A new Runway Reference Code (RRC) designation
- d. An update to the Runway Protection Zone (RPZ) standards
- e. New Taxiway Design Group (TDG) categories for fillet design
- f. Guidance for intersecting and non-intersecting runway geometry
- g. Expanded discussion on Runway Incursion Prevention geometry for new construction
- h. Consolidation of numerous design tables into one interactive Runway Design Requirements Matrix (Table 3-8)
- i. Consolidation of several Appendices in to the runway and taxiway design chapters
- j. A new Aircraft Characteristics Database and a refresh to all listed Appendices

Hyperlinks (allowing the reader to access documents located on the internet and to maneuver within this document) are provided throughout this document and are identified with underlined text. When navigating within this document, return to the previously viewed page by pressing the "ALT" and "←" keys simultaneously.

Figures in this document are representations and are not to scale.

6. How are metrics represented?

Throughout this AC, customary English units will be used followed with "soft" (rounded) conversion to metric units. The English units govern.

7. How can I get this and other FAA publications?

You can view a list of all ACs at http://www.faa.gov/regulations_policies/advisory_circulars/. You can view the Federal Aviation Regulations at http://www.faa.gov/regulations_policies/faa_regulations/.

Michael J. O'Donnell
Director of Airport Safety and Standards

B

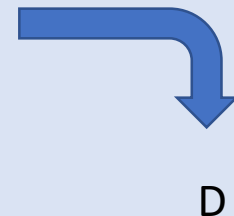
AC 150/5300-13A Appendix 7 9/28/2012

Table A7-6. Runway design standards matrix, A/B - IV

ITEM	DIS ¹	VISIBILITY MINIMUMS			
		Visual	Not Lower than 1 mile	Not Lower than 3/4 mile	Lower than 3/4 mile
RUNWAY DESIGN					
Runway Length	A	Refer to paragraphs 302 and 304			
Runway Width	B	150 ft	150 ft	150 ft	150 ft
Shoulder Width		25 ft	25 ft	25 ft	25 ft
Blas Pad Width		200 ft	200 ft	200 ft	200 ft
Blas Pad Length		200 ft	200 ft	200 ft	200 ft
Crosswind Component		20 knots	20 knots	20 knots	20 knots
RUNWAY PROTECTION					
Runway Safety Area (RSA)		Refer to paragraph 302			
Length beyond departure end ¹	R	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Length prior to threshold ¹¹	P	600 ft	600 ft	600 ft	600 ft
Width	C	500 ft	500 ft	500 ft	500 ft
Runway Object Free Area (ROFA)		Refer to paragraph 302			
Length beyond runway end	R	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Length prior to threshold ¹¹	P	600 ft	600 ft	600 ft	600 ft
Width	Q	800 ft	800 ft	800 ft	800 ft
Runway Obstacle Free Zone (ROFZ)		Refer to paragraph 302			
Length		Refer to paragraph 302			
Width		Refer to paragraph 302			
Precision Obstacle Free Zone (POFZ)		Refer to paragraph 302			
Length		N/A	N/A	N/A	200 ft
Width		N/A	N/A	N/A	800 ft
Approach Runway Protection Zone (RPZ)		Refer to paragraph 302			
Length	L	1,000 ft	1,000 ft	1,700 ft	2,500 ft
Inner Width	U	500 ft	500 ft	1,000 ft	1,600 ft
Outer Width	V	700 ft	700 ft	1,510 ft	1,750 ft
Acres		13.770	13.770	48.978	78.914
Departure Runway Protection Zone (RPZ)		Refer to paragraph 302			
Length	L	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Inner Width	U	500 ft	500 ft	500 ft	500 ft
Outer Width	V	700 ft	700 ft	700 ft	700 ft
Acres		13.770	13.770	13.770	13.770
RUNWAY SEPARATION					
Runway centerline to Parallel runway centerline	H	Refer to paragraph 316			
Holding Position ¹	D	250 ft	250 ft	250 ft	250 ft
Parallel taxiway/taxiway centerline ²	D	400 ft	400 ft	400 ft	400 ft
Aircraft parking area	G	500 ft	500 ft	500 ft	500 ft
Helicopter touchdown pad		Refer to AC 150/5300-2			

Note:
1. Values in the table are rounded to the nearest foot. 1 foot = 0.305 meters.

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D

9/28/2012 AC 150/5300-13A Appendix 7

Table A7-9. Runway design standards matrix, C/D1 - III

ITEM	DIS ¹	VISIBILITY MINIMUMS			
		Visual	Not Lower than 1 mile	Not Lower than 3/4 mile	Lower than 3/4 mile
RUNWAY DESIGN					
Runway Length	A	Refer to paragraphs 302 and 304			
Runway Width ¹¹	B	150 ft	150 ft	150 ft	150 ft
Shoulder Width ¹¹		25 ft	25 ft	25 ft	25 ft
Blas Pad Width ¹¹		200 ft	200 ft	200 ft	200 ft
Blas Pad Length		200 ft	200 ft	200 ft	200 ft
Crosswind Component		16 knots	16 knots	16 knots	16 knots
RUNWAY PROTECTION					
Runway Safety Area (RSA)		Refer to paragraph 302			
Length beyond departure end ¹	R	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Length prior to threshold ¹¹	P	600 ft	600 ft	600 ft	600 ft
Width	C	500 ft	500 ft	500 ft	500 ft
Runway Object Free Area (ROFA)		Refer to paragraph 302			
Length beyond runway end	R	1,000 ft	1,000 ft	1,000 ft	1,000 ft
Length prior to threshold ¹¹	P	600 ft	600 ft	600 ft	600 ft
Width	Q	800 ft	800 ft	800 ft	800 ft
Runway Obstacle Free Zone (ROFZ)		Refer to paragraph 302			
Length		Refer to paragraph 302			
Width		Refer to paragraph 302			
Precision Obstacle Free Zone (POFZ)		Refer to paragraph 302			
Length		N/A	N/A	N/A	200 ft
Width		N/A	N/A	N/A	800 ft
Approach Runway Protection Zone (RPZ)		Refer to paragraph 302			
Length	L	1,700 ft	1,700 ft	1,700 ft	2,500 ft
Inner Width	U	500 ft	500 ft	1,000 ft	1,600 ft
Outer Width	V	1,010 ft	1,010 ft	1,520 ft	1,750 ft
Acres		29.465	29.465	48.978	78.914
Departure Runway Protection Zone (RPZ)		Refer to paragraph 302			
Length	L	1,700 ft	1,700 ft	1,700 ft	1,700 ft
Inner Width	U	500 ft	500 ft	500 ft	500 ft
Outer Width	V	1,010 ft	1,010 ft	1,010 ft	1,010 ft
Acres		29.465	29.465	29.465	29.465
RUNWAY SEPARATION					
Runway centerline to Parallel runway centerline	H	Refer to paragraph 316			
Holding Position ¹	D	250 ft	250 ft	250 ft	250 ft
Parallel taxiway/taxiway centerline ²	D	400 ft	400 ft	400 ft	400 ft
Aircraft parking area	G	500 ft	500 ft	500 ft	500 ft
Helicopter touchdown pad		Refer to AC 150/5300-2			

Note:
1. Values in the table are rounded to the nearest foot. 1 foot = 0.305 meters.

FAA Advisory Circulars are policy guidance material and are not regulatory – variances are possible

Mercer Island's Preference: No Runway Configuration Change Necessary...

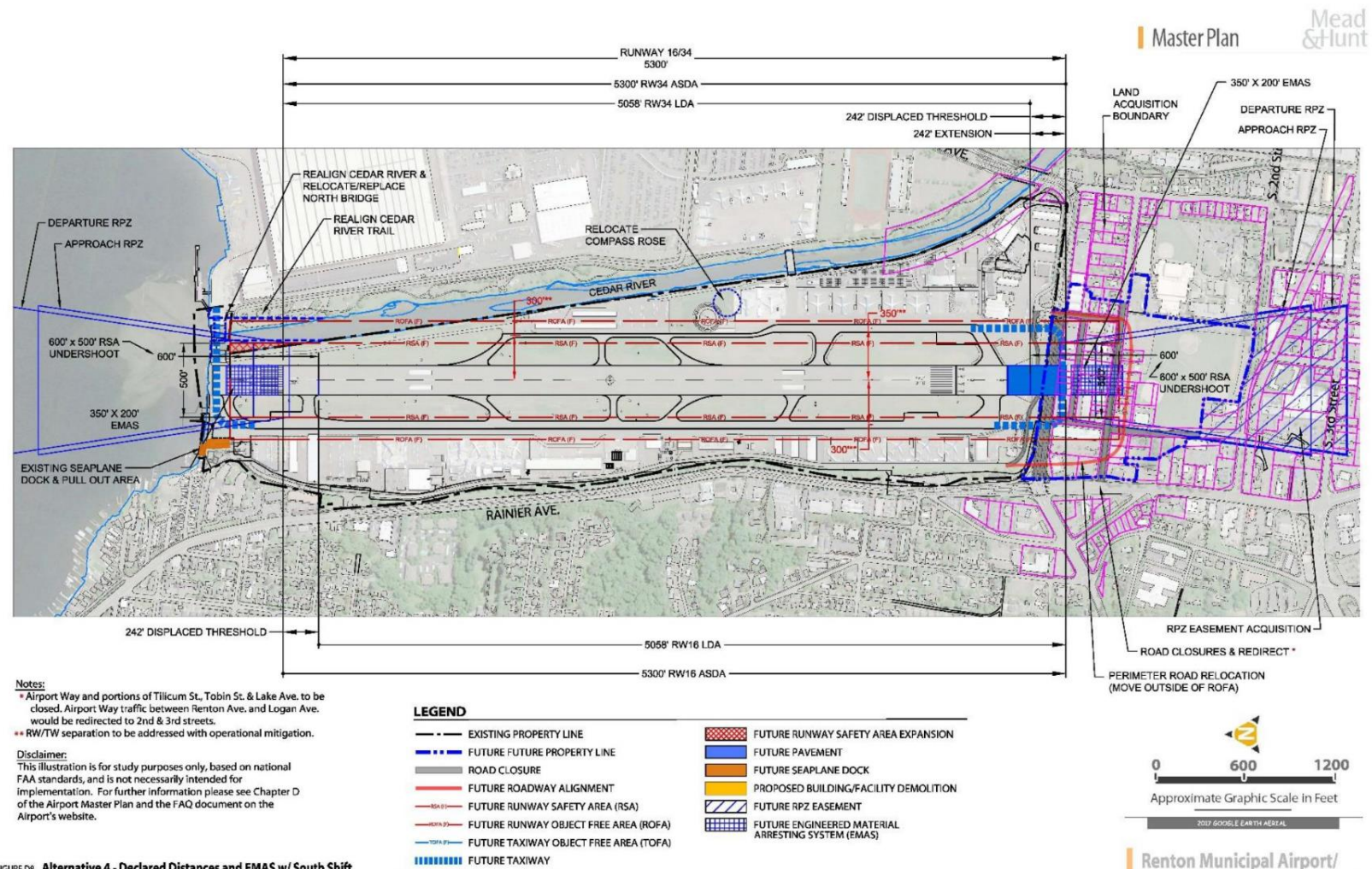
MI Prefers: "No change needed" to the present runway configuration.

The airport has been safely used for over a half-century "as is", including building 40% of the world's jet transport fleet, plus 1000's of large military aircraft, ...with a good safety record.

If a runway change must be made... ???

then MI Prefers: **ALTERNATIVE 4**
"A Runway South Shift with EMAS using Declared Distances"

Alternative 4 was the RAAC preferred and recommended choice to the Renton City Council.



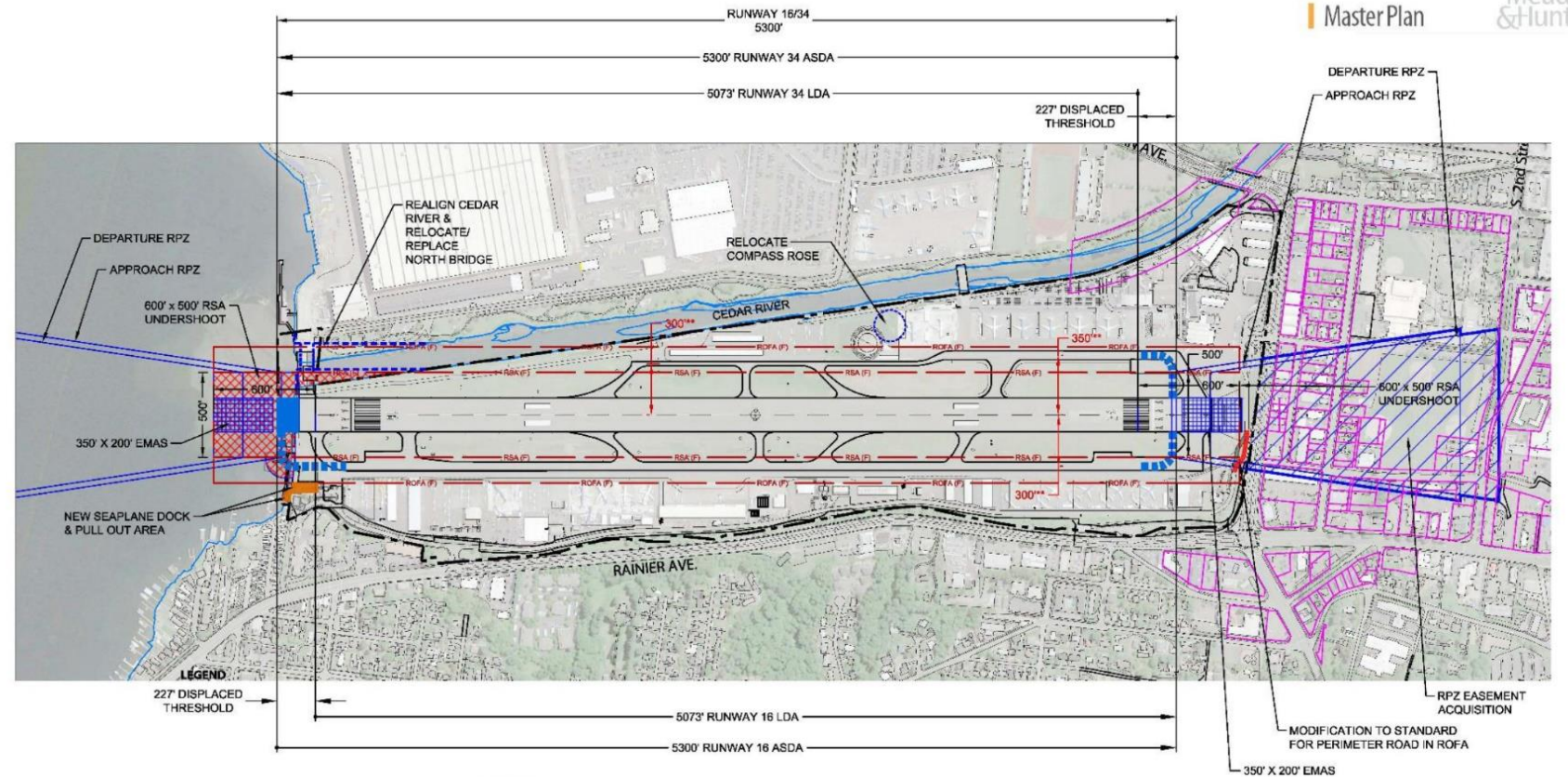
Renton City Council's Selected Preference: Alternative 5

Contrary to the RAAC's Recommendation

The Renton City Council apparently independently selected Alternative 5 to move forward for the Master Plan.

ALTERNATIVE 5

"A Runway shift NORTH into Lake Washington with EMAS using Declared Distances"



Notes:
** RW/TW separation to be addressed with operational mitigation.

Disclaimer:
This illustration is for study purposes only, based on national FAA standards, and is not necessarily intended for implementation. For further information please see Chapter D of the Airport Master Plan and the FAQ document on the Airport's website.

LEGEND

- EXISTING PROPERTY LINE
- ROAD CLOSURE
- FUTURE ROADWAY ALIGNMENT
- RSA (F) FUTURE RUNWAY SAFETY AREA (RSA)
- ROFA (F) FUTURE RUNWAY OBJECT FREE AREA (ROFA)
- TOFA (F) FUTURE TAXIWAY OBJECT FREE AREA (TOFA)
- FUTURE TAXIWAY
- Future Runway Safety Area Expansion
- Future Pavement
- Future Seaplane Dock
- Proposed Building/Facility Demolition
- Future RPZ Easement
- Future Engineered Material Arresting System (EMAS)

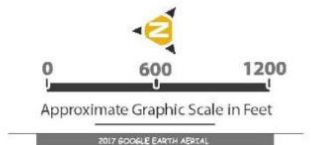
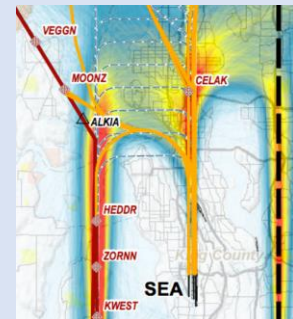
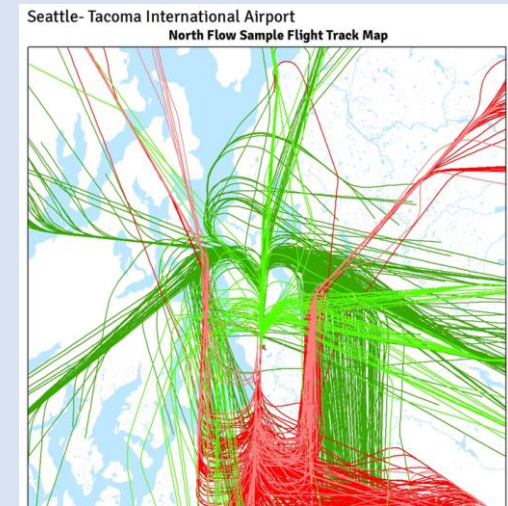


FIGURE D9 Alternative 5 - Declared Distances and EMAS w/ North Shift

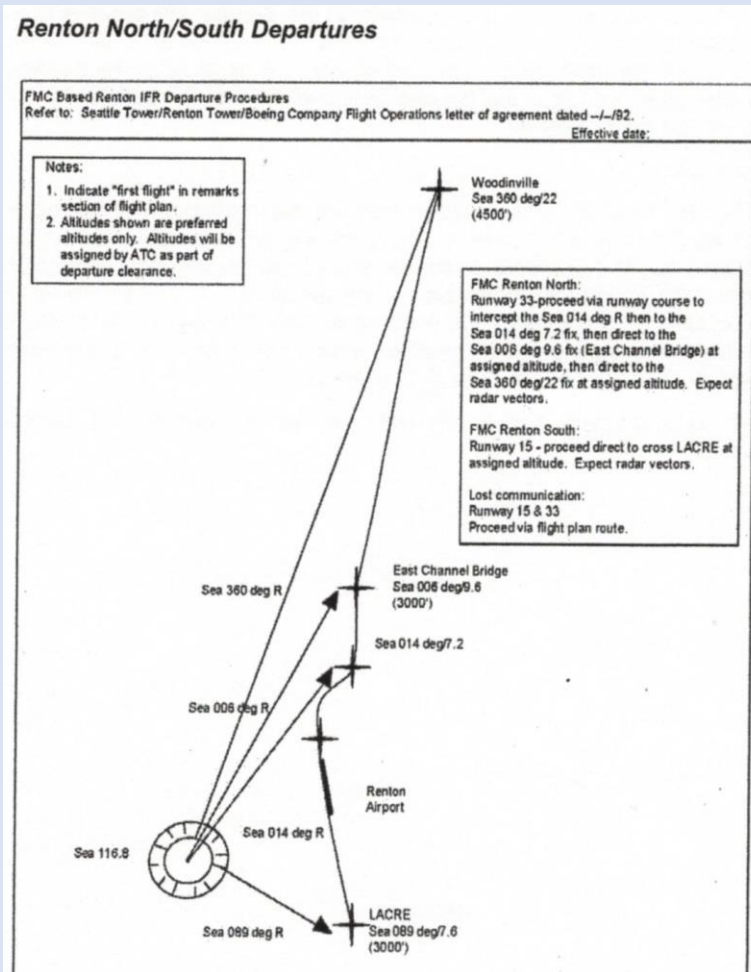
Why does it matter to MI?

- More MI Overflight Noise and nuisance
- Less Safety – Increased “P | aircraft accident” on MI or in its adjacent waters
- Pressure on KRNT to substantially Grow regionally as a jet reliever
- Pressure to change SEATAC traffic flows - to increasingly adversely affect MI overhead airspace - to accommodate more SEATAC traffic, as airline pressure mounts on KPAE & KBLI



Example: Previously FAA Accepted Renton Airport “RNP” Based Departure

North Departure Path – Flown directly over the East Channel of Lake Washington



- RNP Procedure provided a safer aircraft path and less noise exposure to Mercer Island
- These RNP Procedures were accepted by FAA and safely and successfully used for decades
- Optimum path over the East Channel was also successfully demonstrated for prospective use for RNP based arrivals

Renton Airport Visual Procedures



GENERAL VFR DEPARTURE PROCEDURES

SOUTH FLOW : RUNWAY 16

FACTORIA DEPARTURE: Fly runway centerline until reaching 1,000' then make standard left downwind west of I-405. When abeam the **Control Tower**, make 45° right turn to exit traffic pattern. Cross over I-405 and then fly direct toward **Factoria** to exit Delta airspace.

KENT DEPARTURE: Fly runway centerline until reaching 1,000' then fly direct toward the east side of **Valley Medical Center**. Continue straight ahead toward a point 1 mile east of SR-167 to exit Delta airspace without entering Boeing's Delta airspace.

LAKE YOUNGS DEPARTURE: Fly runway centerline until reaching 1,000' then turn left and fly direct toward the southwest side of **Lake Youngs** to exit Delta airspace.

BURIEN/SEACAT CROSSING: Request with Renton Ground on initial contact. If approved by Seattle Tower, you'll receive a transponder code. Make standard right downwind departure. Do not turn west until you establish two-way radio contact with Seattle Tower on frequency 119.9. Renton Tower will instruct you when to change frequencies after any potential traffic conflicts are resolved. Do not turn west until you establish two-way radio contact with Seattle Tower on frequency 119.9. Remember, you must receive a specific clearance from Seattle to enter their Bravo airspace.

MUSEUM/KRBI DEPARTURE: Request with Renton Ground on initial contact. Fly centerline and do not turn west until you establish two-way radio contact with Tower on frequency 118.3. Renton Tower will tell you when to change frequencies after any potential traffic conflicts are resolved.

NORTH FLOW : RUNWAY 34

EAST CHANNEL DEPARTURE: Fly runway centerline until 1 mile past departure end of runway then fly outbound over the middle of the East Channel. Fly direct toward the **East Channel Bridge** to exit Delta airspace.

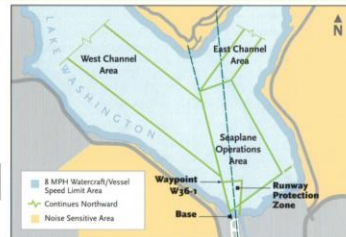
LAKE YOUNGS DEPARTURE: Fly runway centerline until reaching 1,000' then make a standard right downwind west of I-405. When abeam the **Control Tower**, make 45° left turn to exit traffic pattern. Cross over I-405 and then fly direct toward northeast side of **Lake Youngs** to exit Delta airspace.

BURIEN/SEACAT CROSSING: Request with Renton Ground on initial contact. If approved by Seattle Tower, you'll receive a transponder code. Make standard right downwind departure. Do not turn west until you establish two-way radio contact with Seattle Tower on frequency 119.9. Renton Tower will instruct you when to change frequencies after any potential traffic conflicts are resolved.

MUSEUM/KRBI DEPARTURE: Request with Renton Ground on initial contact. Fly runway centerline and do not turn west until you establish two-way radio contact with Boeing

WILL ROGERS-WILEY POST SEAPLANE BASE

All takeoffs, landings, and idle taxiing should be carried out within the area identified as the Seaplane Operations Area with regard for wind, weather, and boat traffic. The Seaplane Operations Area is east of an imaginary line extending from the seaplane dock on a heading of 320 degrees. **NO STEP TAXIING.** Operations are at your own risk. Use caution for localized shoaling and shallow water as you approach the seaplane base and around the seaplane docks and launch ramp.



WASHINGTON ONE DEPARTURE: On initial contact with Renton Tower, advise your specific location on the lake (e.g. east or west of the extended runway centerline and whether you are east or west of line of sight behind buildings). Request the "Washington One Departure" and tell the controller whether you will use the east or west channel. State the appropriate ATIS code. You must establish two-way radio contact prior to entering Delta airspace (i.e. prior to becoming airborne). Departure from the lake is at pilot's own risk-report airborne. Fly mid-channel to avoid noise sensitive areas. West Channel departures remain at or below 800'

MSL while in the west channel, over the water, and until you're outside of Boeing airspace. **WASHINGTON ONE ARRIVAL:** On initial contact with Renton Tower, advise your location. Request the "Washington One Arrival" and tell the controller whether you will use the east or west channel. State the appropriate ATIS code. You must establish two-way radio contact prior to entering Delta airspace (i.e. prior to becoming airborne). Remain at or below 800' MSL while in the west channel, over the water, and in Boeing airspace. Landing on the lake is at the pilot's own risk-report on the lake.

Latitude : N47° 29.99'

Longitude : W122° 13.16'

Virtual Buoy : Wavpoint W36-1

Waterway 12-30 : 5000' x 200'

Waterway 12 : Right Traffic

GENERAL VFR ARRIVAL PROCEDURES

SOUTH FLOW : RUNWAY 16

EAST CHANNEL ARRIVAL: Make initial request approximately 8-12 miles (depending on airspeed) from KRNT. Enter Delta airspace via the **East Channel Bridge** and fly inbound over the middle of the East Channel. Unless otherwise instructed by Renton Tower, make straight-in. Report 2 mile final.

LAKE YOUNGS ARRIVAL: Make initial request approximately 8-12 miles (depending on airspeed) from KRNT. Enter Delta airspace via the northeast side of **Lake Youngs**. Fly direct to **Maplewood Golf Course**. Unless otherwise instructed by Renton Tower, make 45° to left downwind. Report over **Maplewood Golf Course**.

NORTH FLOW : RUNWAY 34

FACTORIA ARRIVAL: Make initial request approximately 8-12 miles (depending on airspeed) from KRNT. Enter Delta airspace via **Factoria**. Fly direct to the **Water Tower**. Unless otherwise instructed by Renton Tower, make 45° to right downwind. Report over the **Water Tower**.

KENT ARRIVAL: Make initial request approximately 8-12 miles (depending on airspeed) from KRNT. Enter Delta airspace 1 mile east of SR-167. Fly direct to the east side of **Valley Medical Center**. Unless otherwise instructed by Renton Tower, make straight-in. Report abeam **Valley Medical Center**.

LAKE YOUNGS ARRIVAL: Make initial request approximately 8-12 miles (depending on airspeed) from KRNT. Enter Delta airspace via the southwest side of **Lake Youngs**. Fly direct to **Maplewood Golf Course**. Unless otherwise instructed by Renton Tower, make a 1 mile right base. Report over **Maplewood Golf Course**.

VFR-VOLUNTARY NOISE ABATEMENT

Noise abatement procedures at Renton Airport are voluntary measures by pilots to "fly friendly" and be good neighbors to the citizens who live under aircraft flight paths. Pilots should only deviate from these procedures when necessary to comply with any Air Traffic Control requests or in the interest of safety. Pilots of large or turbine-powered aircraft must comply with the provisions of FAR 91.129(e), rather than these procedures. All altitudes are MSL.

FOR AIRCRAFT WITH A CONSTANT SPEED PROPELLER
After takeoff, pilots should reduce propeller RPM when at safe altitude at or below 700'. The propeller RPM may be increased when clear of noise sensitive areas or 2,000'. On approach for landing, pilots should not increase the propeller to full RPM until the power has been reduced to final approach power.

FOR TAKE-OFFS WHICH REMAIN IN THE TRAFFIC PATTERN
Pilots should climb at the Best Rate of Climb (Vy) or the Best Angle of Climb (Vx), or a combination thereof, to at least 700' before turning crosswind. At 1000', throttle down to pattern power and fly as close to downwind west of I-405. Depending on traffic, pilots should avoid descending below 800' over Kenydale or the Renton East Hill. Either turn base leg before these areas or maintain altitude as necessary to fly over them at 800' or above.

FOR DEPARTURES LEAVING THE TRAFFIC PATTERN
Pilots should climb at the Best Rate of Climb (Vy) or Best Angle of Climb (Vx), or a combination thereof, until reaching 1,000' and thereafter at cruise climb speed to departure altitude.

NOISE ABATEMENT PROCEDURES

Maintain highest FAA advised altitude over noise-sensitive residential areas identified in yellow on the map. (Reference VFR procedures for noise-sensitive areas in FAA A/C 91-36D)

Honor voluntary curfew of nighttime engine maintenance run-ups.

See special procedures for seaplanes and helicopters.

PILOT PROCEDURES

Pattern at or above 500' MSL and do not turn base

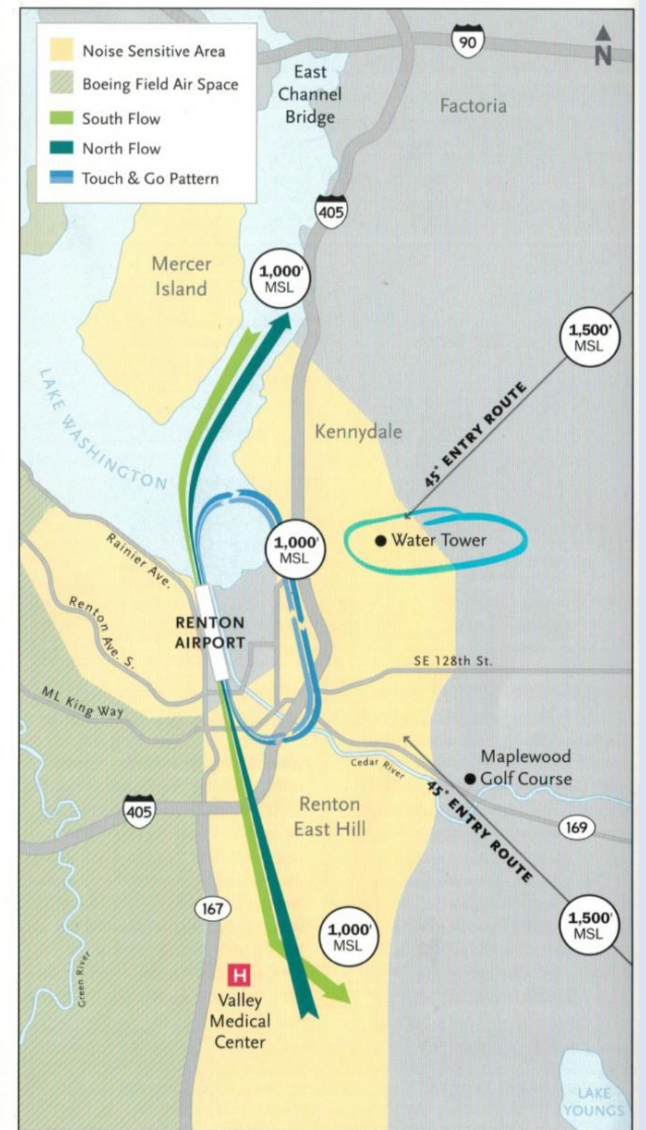
Out until .5 mile from the airport and 500' MSL

Departures: Fly as instructed by the Tower.

Runway 34 : 5042' x 200'

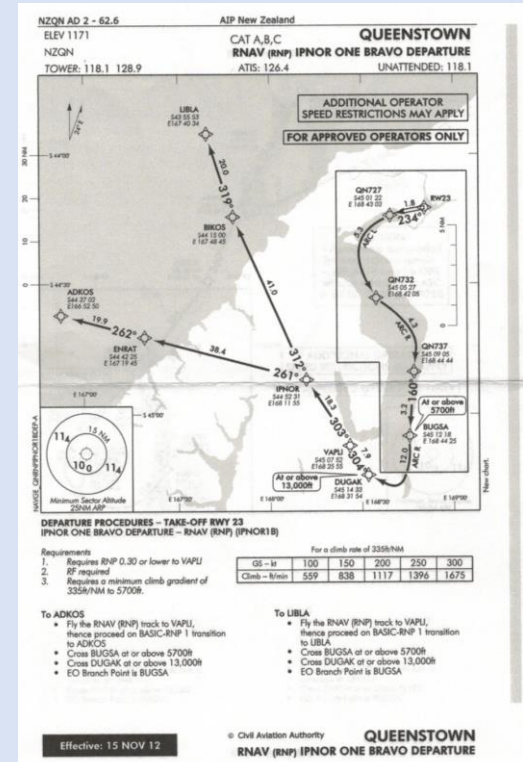
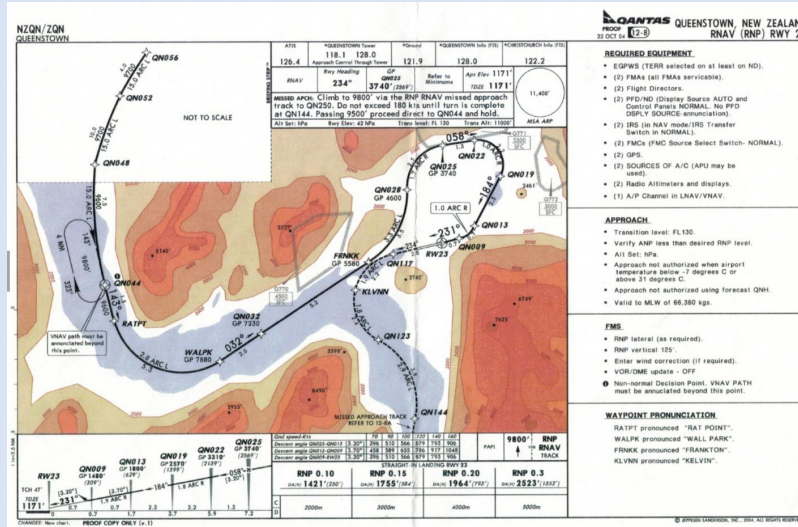
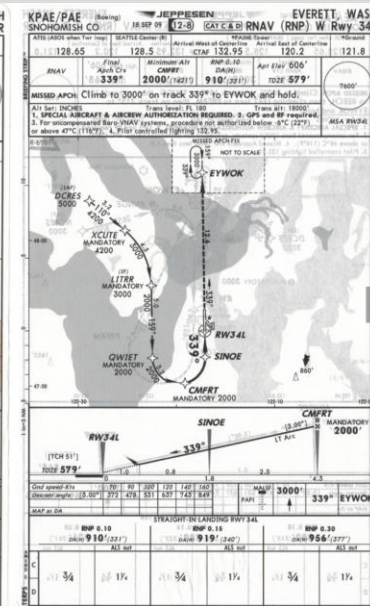
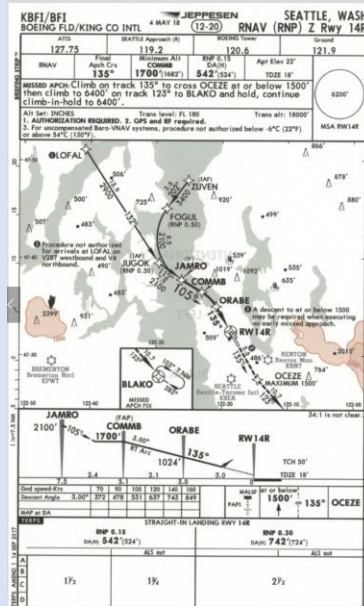
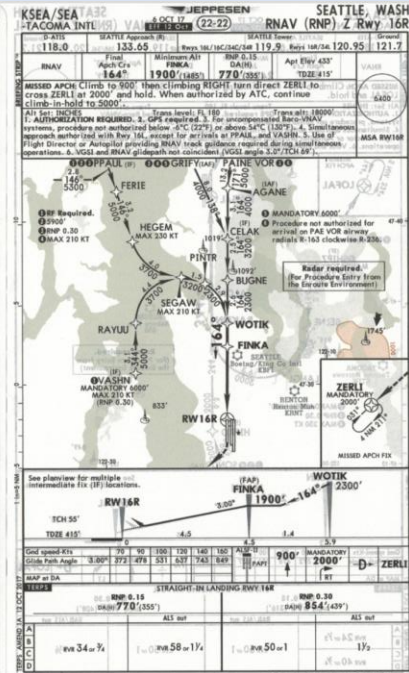
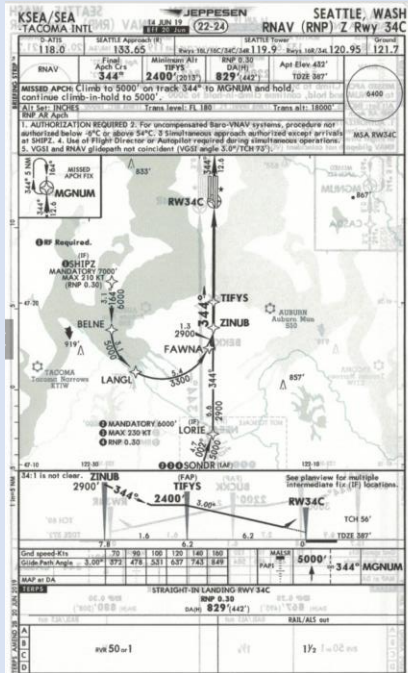
340' displaced threshold

Glide path is 3.75° - PAPI

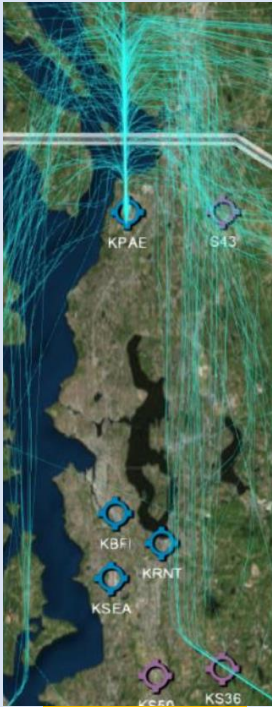


RNP* Instrument Procedure Examples

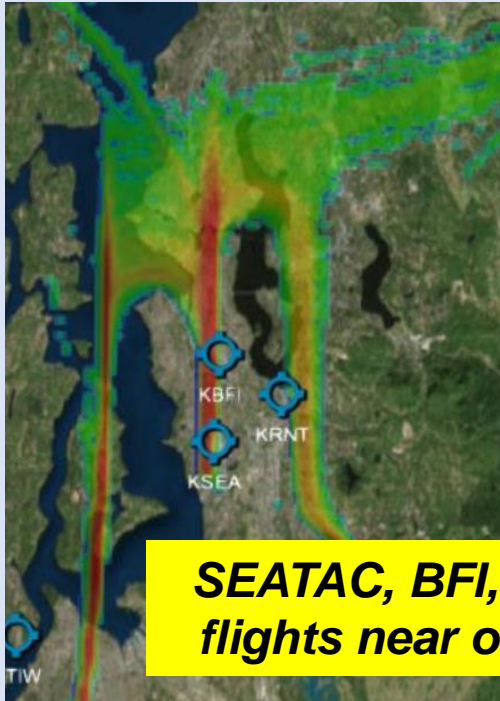
*RNP – Required Navigation Performance



What Should Mercer Island Advocate? Potential Noise and Safety Mitigation ...with better Renton RNP Procedures Over the EAST CHANNEL

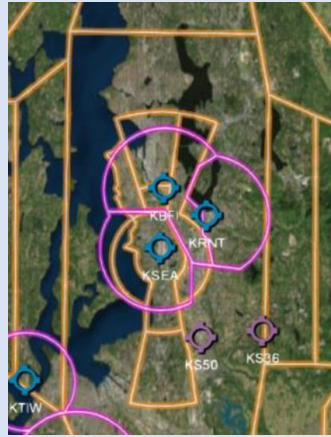


PAE Arrivals

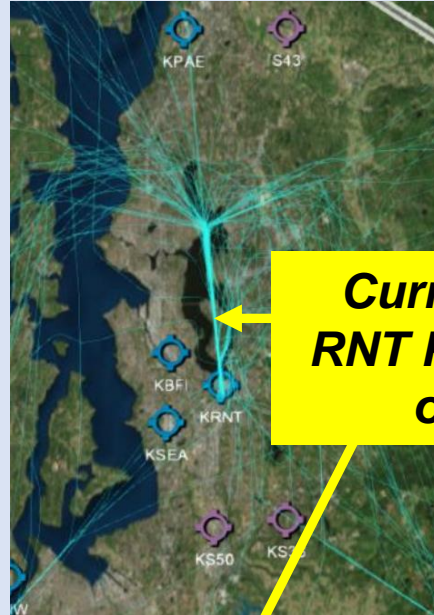


SEATAC, BFI, and PAE flights near or over MI

SEA Arrivals

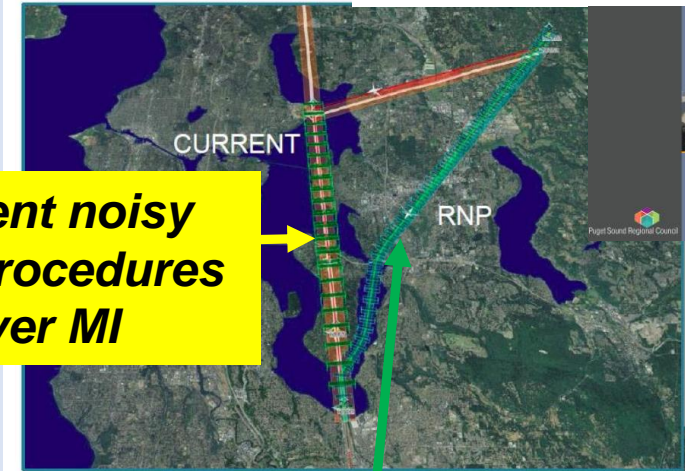


RNT Arrivals

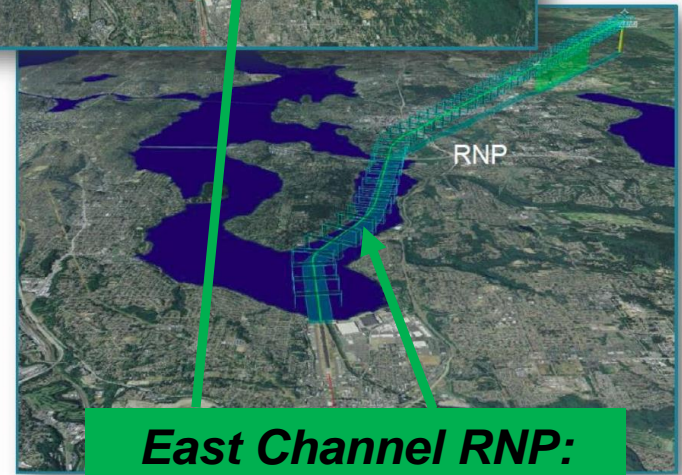


Current noisy RNT Procedures over MI

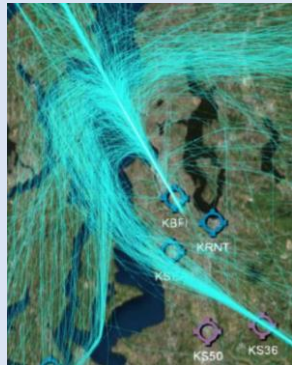
Figure 3.5 RNP-AR Approach, Runway 16



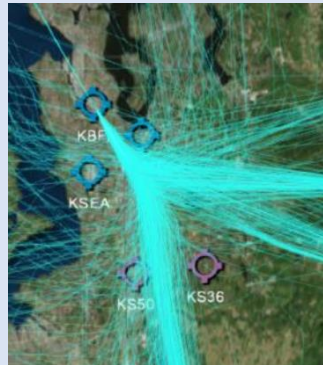
NextGen Airspace Optimization Study



East Channel RNP: Less Noise and More Safety for MI



BFI Arrivals



BFI Departures



Existing Southflow Arrival Procedure

Table 2.1 Aircraft Activity Levels for 2013 by Airport

TAF Operations (2013)	Yearly Aircraft Operations (Landings + Takeoffs)									
	KBFI	KRNT	KPAE	KTIW	KPWT	KPLU	SSO	S36	S43	
Air Carrier	9,107	438	3,905	1	0	0	0	0	0	0
Air Taxi	33,531	973	1,480	676	625	3,438	6,100	0	51	
General Aviation Local	46,903	53,854	50,020	14,708	32,438	34,695	60,882	16,250	91,122	
General Aviation Itinerant	90,980	38,133	48,347	21,615	21,025	63,712	99,874	180,000	50,430	
Military Local	275	334	291	492	0	0	0	0	0	
Military Itinerant	554	103	618	695	900	0	100	0	74	
TOTAL	181,350	93,835	104,661	38,187	55,588	101,845	166,956	146,250	141,677	
Operations by Category	KBFI	KRNT	KPAE	KTIW	KPWT	KPLU	SSO	S36	S43	
Air Carrier/Boeing	9,200	485	2,700	0	0	0	0	0	0	
Business Jet	23,000	3,452	4,400	602	0	0	0	0	0	
Twin Propeller	8,000	3,938	12,000	1,253						
Single Propeller	138,371	84,103	83,641	52,833						
Helicopter	2,500	1,447	1,350							
Military Fixed Wing	870	440	620	900						
TOTAL	181,940	93,895	104,661	55,588						

Source: Terminal Area Forecast, Federal Aviation Administration, January 2015
 Airport-reported operation information, Study Area Airports, January 2015
 *Airports do not report their operations beyond the TAF
 **Airport Operations by Category are estimated at airports where there is no definitive source

**Mercer Island's Interest in
Regional Aviation and Airspace Use**

Backup Slides

RNP* Instrument Procedure Examples

