

MERRILL FIELD (MRI/PAMR)

Instrument Flight Procedure Project



- Kolby Hickel- Deputy Municipal Manager & Acting Merrill Field Manager
- Dan Owen- owner Alaska Air Transit & MAAAC member
- Keenan Zerkel- owner Alaska Aircraft Sales & Maintenance and MAAAC Co-Chair

Why we're here.....

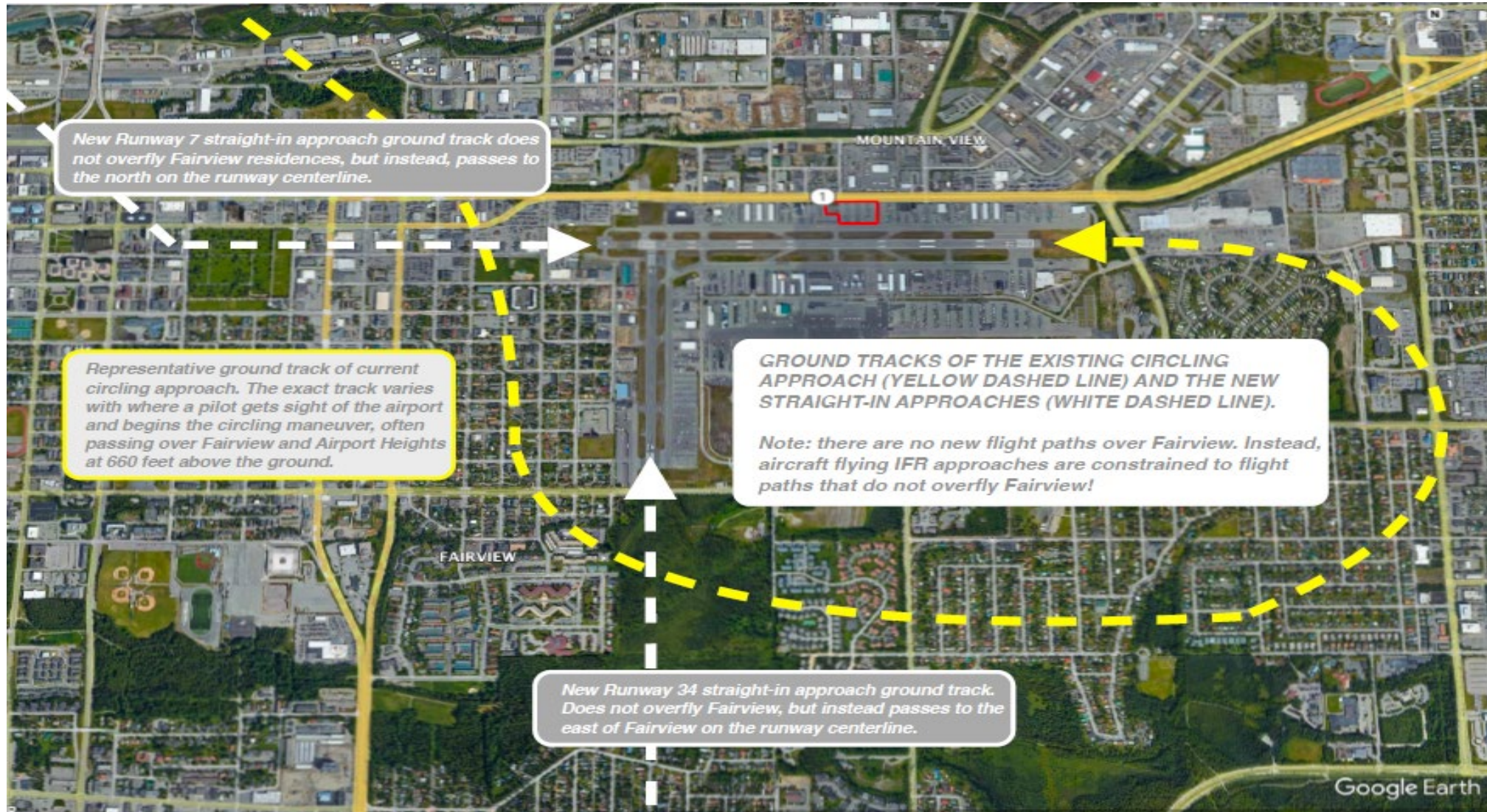


- Background on Hughes Aerospace and the Instrument Flight Procedures.
- Community concerns.
 - Runway Protection Zone- RWY 34 COPTER
 - National Environmental Policy Act (NEPA)
 - Size of aircraft
 - MOA Code: 11.60.120 section B.

The technology that enables the new approaches:

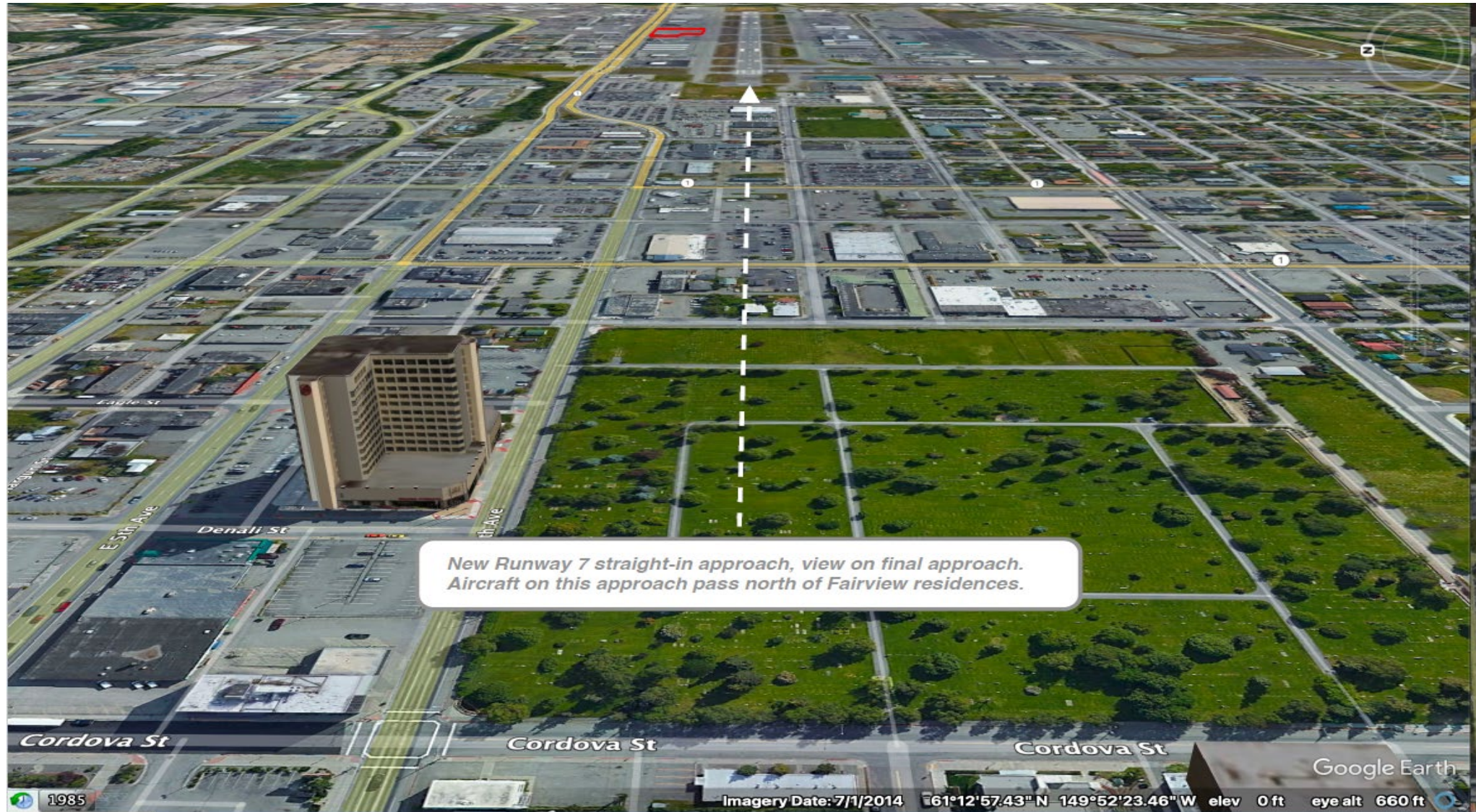
- WAAS GPS is a highly improved GPS system consisting of space based, terrestrial, and aircraft-based components that work in concert to significantly improve navigation accuracy and reliability.
- Modern WAAS GPS technology provides ILS like accuracy without the need for expensive ground-based navigation infrastructure at each individual airport.
 - “To have ILS-like capability is really a game changer” – *EMS pilot Jeremy Fryer in Modern Helicopters Speed up the Golden Hour* [FAA Navigation Programs AJM-32](#)
- Straight in Approaches w/glide path greatly increase the likelihood of safe, successful instrument approaches and landings.
 - Currently available in a MAJORITY of instrument approaches in State of Alaska
- Alaska is an aviation safety technology pioneer. In June, 2009, Northern Air Cargo was certified to fly with WAAS. NAC is the first Boeing 737 in the U.S. to acquire certification to fly with full WAAS GPS capability.
 - Equipped to use the extremely accurate navigation service provided by WAAS, NAC can now take advantage of WAAS approach procedures throughout rural Alaska.

Ground track of existing approach (yellow), and new straight-in approaches (white)



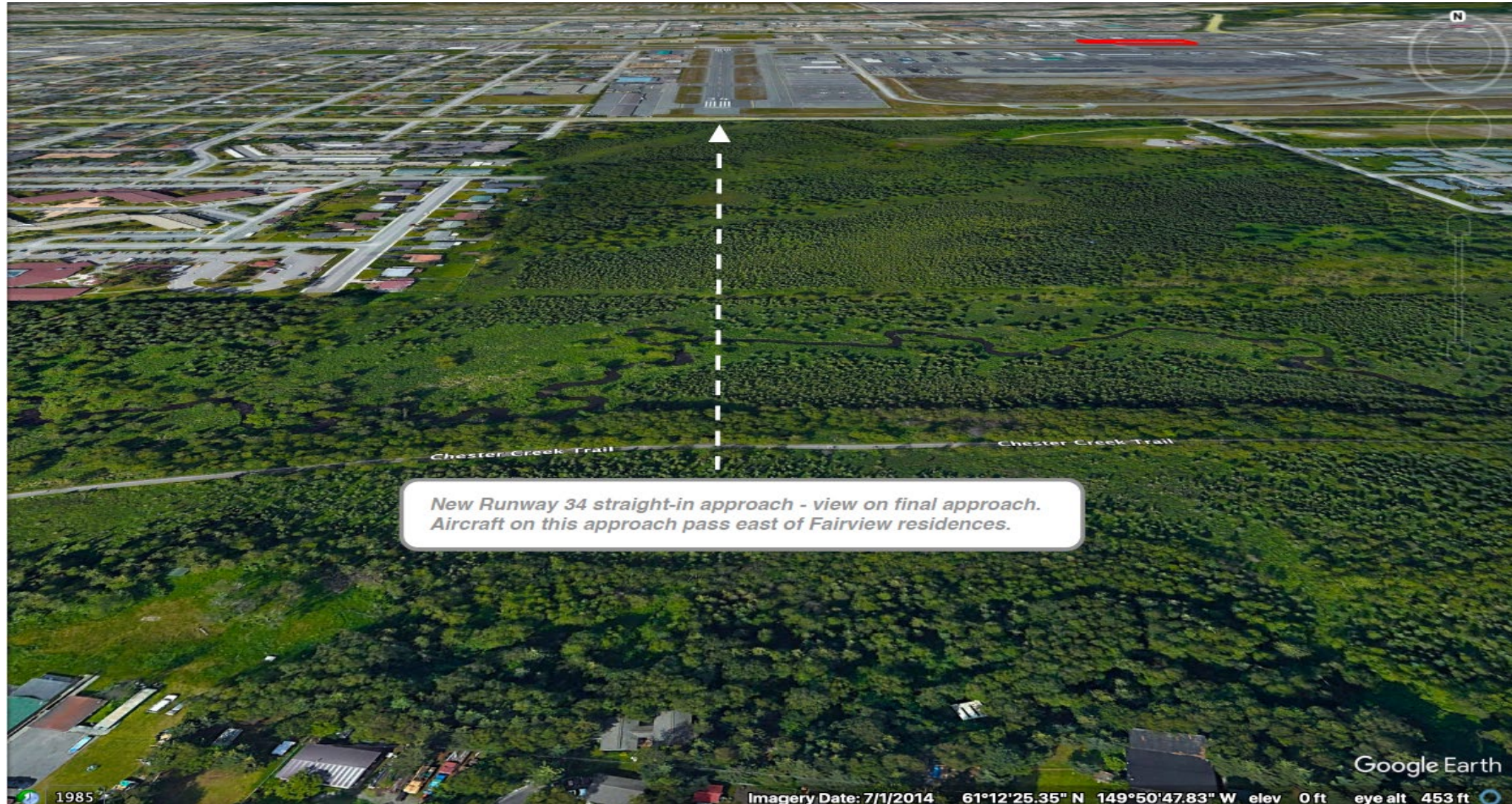
Pilot view of new Runway 7 straight-in approach

Fairview residences are to the south



Pilot view of new Runway 34 straight-in approach

Fairview residences are to the west



Addressing Fairview Neighbor's Concerns about the New Instrument Approaches

1. Concern: the RPZ will expand and FAA or Merrill Field will take away your homes – Not true: (1) the graphic depicting RPZ expansion over Fairview residences was false, based on a misapplication of FAA rules! (2) Neither the FAA nor Merrill Field has the authority to take away your home.
2. Concern: more planes flying over your house – aircraft on straight-in instrument approaches to Runways 7 or 34 are constrained to the extended runway centerline, and therefore restricted from flying over your house. This is in contrast with the current circling approach, where planes must often fly over Fairview residences during the circling maneuver in order to line up with a runway. Therefore, fewer planes flying over your house (although you may not notice a difference, since the planes that fly IFR at Merrill Field are the quietest planes on the airport).
3. Concern: larger airplanes will be landing at Merrill Field – Nope; Municipal code restricts aircraft to the size that currently operate at Merrill Field.
4. Concern: more airplanes will be flying into Merrill Field – Not so. Nearly all aircraft that fly IFR into Merrill Field are commercial air carriers who are returning to their Merrill Field home base. They just want to do it more safely and reliably.

4 mi. Final - Anchorage International Runway 7



2 mi. Final - Anchorage International Runway 7



1 mi. Final - Anchorage International Runway 7



Short Final - Anchorage International Runway 7



1 mi. Final - Merrill Field Runway 7



View on Final - Merrill Field Circling Approach

Not lined up with any runway and too high to land safely – must circle



Safety Considerations of Circling IFPs



SAFETY ALERT 084

NTSB National Transportation Safety Board

March 2023

Circling Approaches: Know the Risks!

Before conducting a circling approach, be sure it is the best option and then brief the approach, plan its execution, and acknowledge your own limitations.

AVIATION
HIGHWAY
MARINE
RAILROAD
PIPELINE

The problem

- Circling approaches can be riskier than other types of approaches because they often require maneuvering at low altitude and low airspeed during the final segment of the approach, increasing the opportunity for loss of control or collision with terrain. These risks are heightened when conducting circling approaches in marginal or reduced visibility conditions and increased focus is required.
- While circling approaches might be necessary to accommodate traffic flow at airports, or are advantageous due to wind conditions, pilots sometimes do not evaluate the risks of these approaches fully before accepting them, which can result in unstabilized approaches.
- Often, circling approaches do not allow for stabilized approach criteria to be met. Approaches should be stabilized by 1,000 feet height above touchdown (HAT) in instrument meteorological conditions (IMC), and by 500 feet HAT in visual meteorological conditions (VMC).
- When circling approaches are conducted in IMC, transitioning from instruments to ground references can cause the "illusion of high speed" if the instruments are not properly monitored.

Stabilized Approach

In IMC, you must continuously evaluate instrument information throughout an approach to properly maneuver the aircraft or monitor autopilot performance and to decide on the proper course of action at the decision point (DA, DH, or MAP). Significant speed and configuration changes during an approach can seriously degrade situational awareness and complicate the decision of the proper action to take at the decision point.

For the final segment of a circling approach maneuver, the approach must be stabilized 500 feet above the airport elevation or at the MDA, whichever is lower. These conditions must be maintained throughout the approach until touchdown for the approach to be considered a stabilized approach. This also helps you to recognize a wind shear situation should abnormal indications exist during the approach.

Many Part 121 and 135 operators are restricted from conducting circling approaches below 1,000 feet MDA and 3 SM visibility by Part C of their OpSpecs.

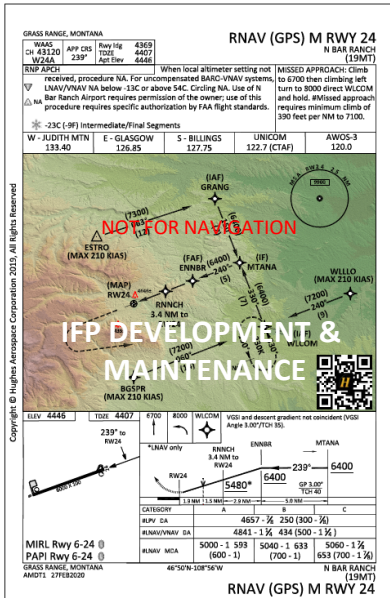
2017 Instrument Procedures Handbook FAA-H-8083-16B

Lake & Pen Air
Lake Hood Airport
Sunday, Nov 5, 2023, 1:30 pm





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OBSTACLE SURVEY – AERODROME CERTIFICATION



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INTRODUCTIONS

Presentation

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NON-FAA AIR NAVIGATION SERVICE PROVIDER

ABOUT HUGHES AEROSPACE

Houston based Hughes Aerospace Corporation is a globally recognized and fully credentialed Air Navigation Services Provider. Our mission is to provide our customers and the flying public, the safest, most advanced instrument flight procedures without compromise.

HUGHES DESIGNS, IMPLEMENTS, AND MAINTAINS INSTRUMENT FLIGHT PROCEDURES FOR THE FAA & GOVERNMENT AUTHORITIES WORLDWIDE. WE ARE THE LARGEST & ONLY FAA CERTIFICATED PUBLIC SERVICE PROVIDER, EXPERIENCED IN DEVELOPING AND MAINTAINING BOTH CFR 14 PART 97 PUBLIC INSTRUMENT FLIGHT PROCEDURES.

Hughes is also endorsed by the International Civil Aviation Organization (ICAO) as an Air Navigation Service Provider as well as several other regulatory authorities worldwide. Hughes also possess certification for complete Flight Inspection & Validation services, conducted with our own aircraft. We have participated in landmark airspace projects that involve *PBN* throughout North America, Latin America, Asia, Europe, and the Middle East.



*Instrument Procedure Night Evaluation
Seattle, Washington*



HUGHES is a certified FAA Public Service Provider under 14CFR Part 97, in the United States of America

HUGHES AEROSPACE PROPRIETARY INFORMATION
UNCONTROLLED WHEN PRINTED



*HUGHES - ICAO endorsed
Instrument Procedure Design Facility
ICAO Endorsed 3rd Party ANSP
MEMBER - ICAO PBN Go-Team*

Instrument Flight Procedure Project Merrill Field Airport (PAMR) – Anchorage, AK

Former Merrill Field Airport Manager, Ralph Gibbs engaged with HUGHES in July 2020, looking to provide the operator's better access and safety enhancements to the airport. After months of discussions, feasibility studies, and contract negotiations, HUGHES started work in March 2021 with the goals below.

OBJECTIVES:

- **Develop new CFR 14 Part 97 Public RNAV (GPS) Instrument Flight Procedures RWY 07 / RWY 34**
- **Develop Instrument Flight Departure Procedure (RNAV SIDs)**
- **COPTER Approach Instrument Procedure**

BENEFITS:

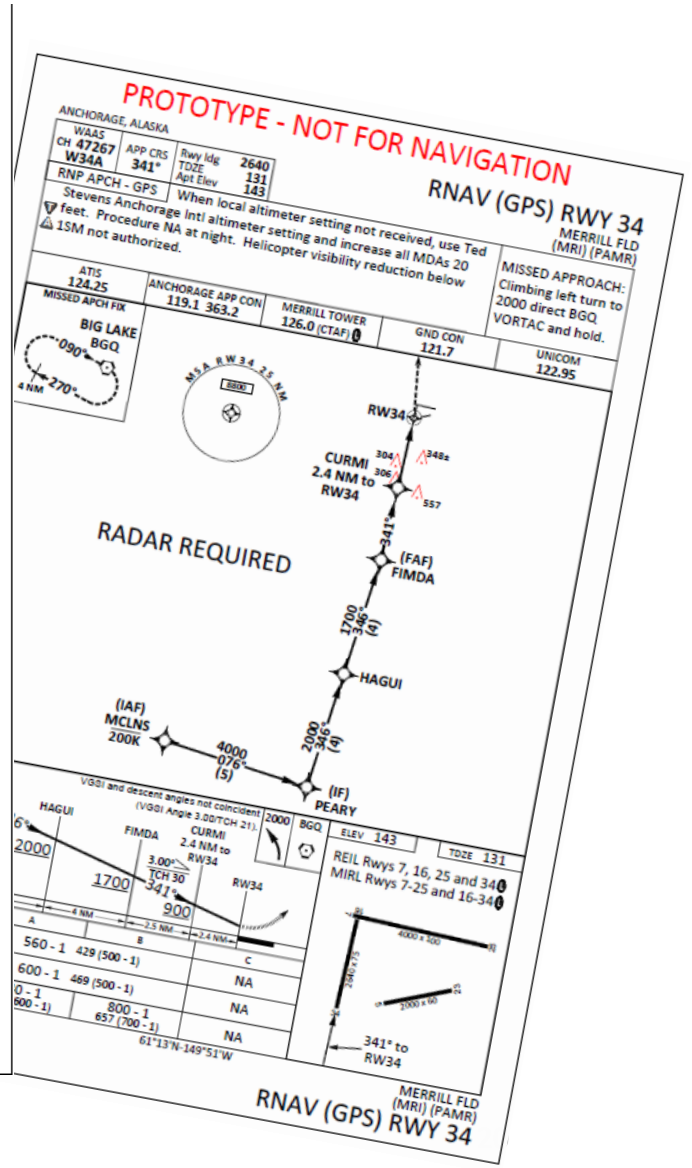
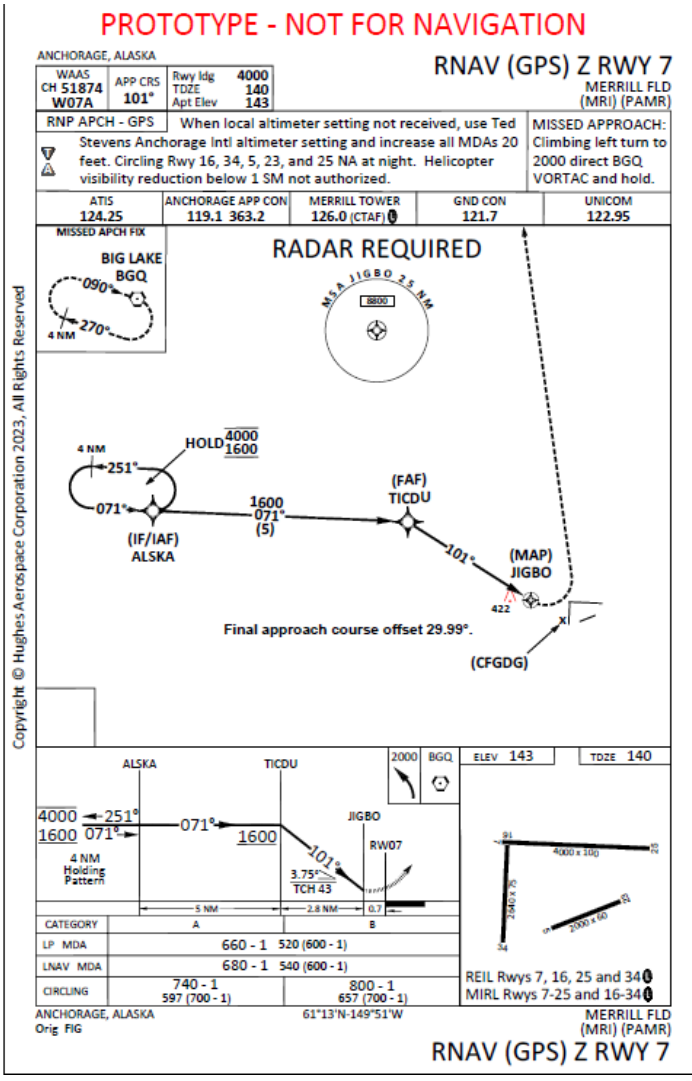
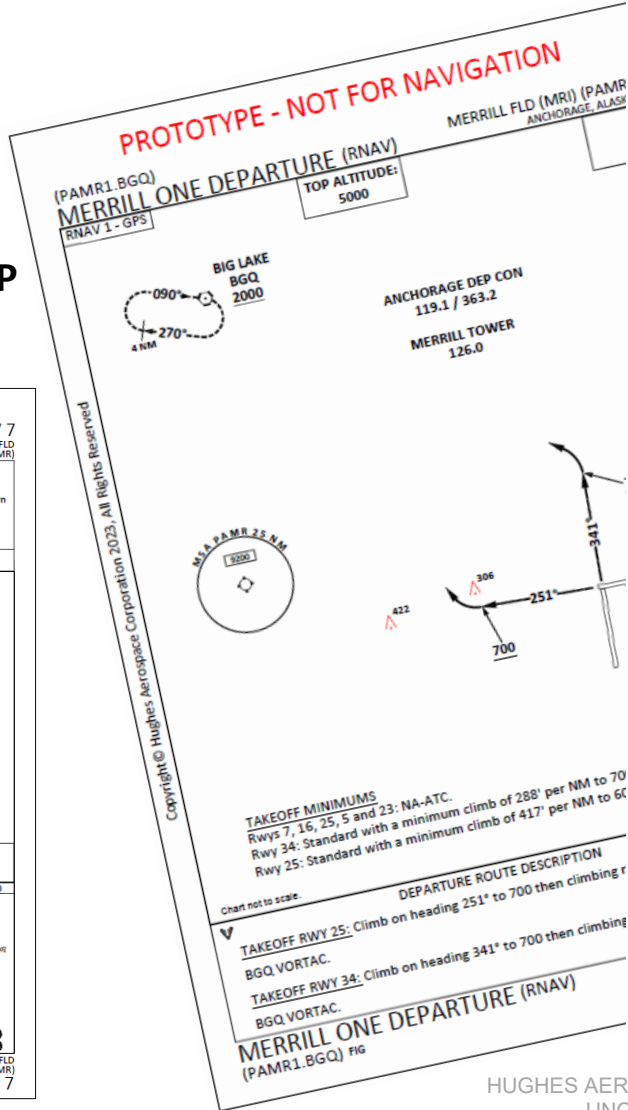
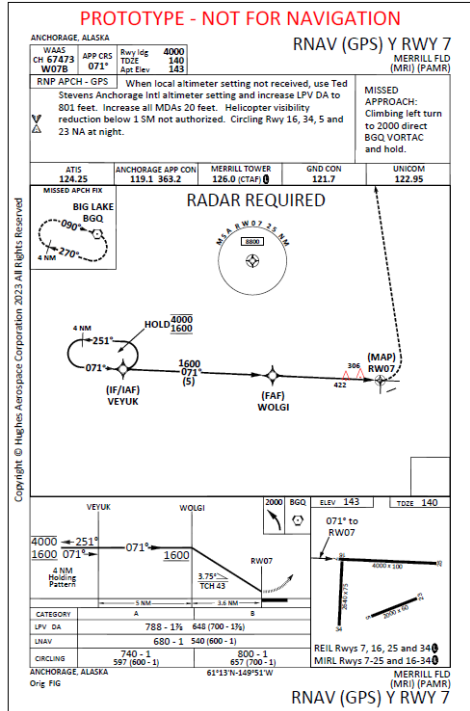
- **Increase in Safety, noise abatement and all-weather reliability.**
- **Protect the immediate airspace surrounding the Airport.**
- **Eliminate costly diversions, missed approaches and holding.**
- **Overall reduction in track miles & noise, saving fuel and environmental impact to the community.**

Procedures were successfully Flight Validated on 4/7/2023 and were forecasted for Publication on 7/10/2023

MERRILL FIELD INSTRUMENT FLIGHT PROCEDURES

READY FOR PART 97 PUBLIC IMPLEMENTATION:

- RNAV (GPS) RWY 34
- RNAV (GPS) Y RWY 7
- RNAV (GPS) Z RWY 7
- MERRILL ONE (RNAV) DP



Questions?