

Surveillance and Broadcast Services

Alaska Industry Council

By: Wes Mooty, SBS Western Service Area,
Project Engineering Manager

Date: November 14, 2007



Federal Aviation
Administration



AGENDA

- **Opening Remarks – Wes Mooty**
- **Navigation Services Update – JoAnn Ford**
- **Operations Update – Jim Hill**
- **Chelton 6.0 Bravo update – Jim Wright**
- **Technical Update – Wes Mooty**
- **AIC Avionics Plan – Joe Pearson**
- **Round Table**



Opening Remarks

- **SBS Team Building meeting**
 - December Industry Council impact
- **TIS-B Modification**
 - ASR-11



Navigation Services Update

JoAnn Y Ford

ATO-W Navigation Services;
Navigation Systems
Engineering

Update Briefing to the Alaska
Aviation Industry Council

NOV 14, 2007



Federal Aviation
Administration



Navigation Services Update Profile

- **Current NAS LPV Totals**
- **Latest Alaska WAAS Availability**
- **Aviation Expo North – NAV SVCS Outcomes**
 - Resolution of Fairbanks GARMIN 480 issues
- **Galena Update**



NAS LPV Procedure Publication Progress to Date (Current and all prior years)

LPVs Published to non-ILS Runways 548

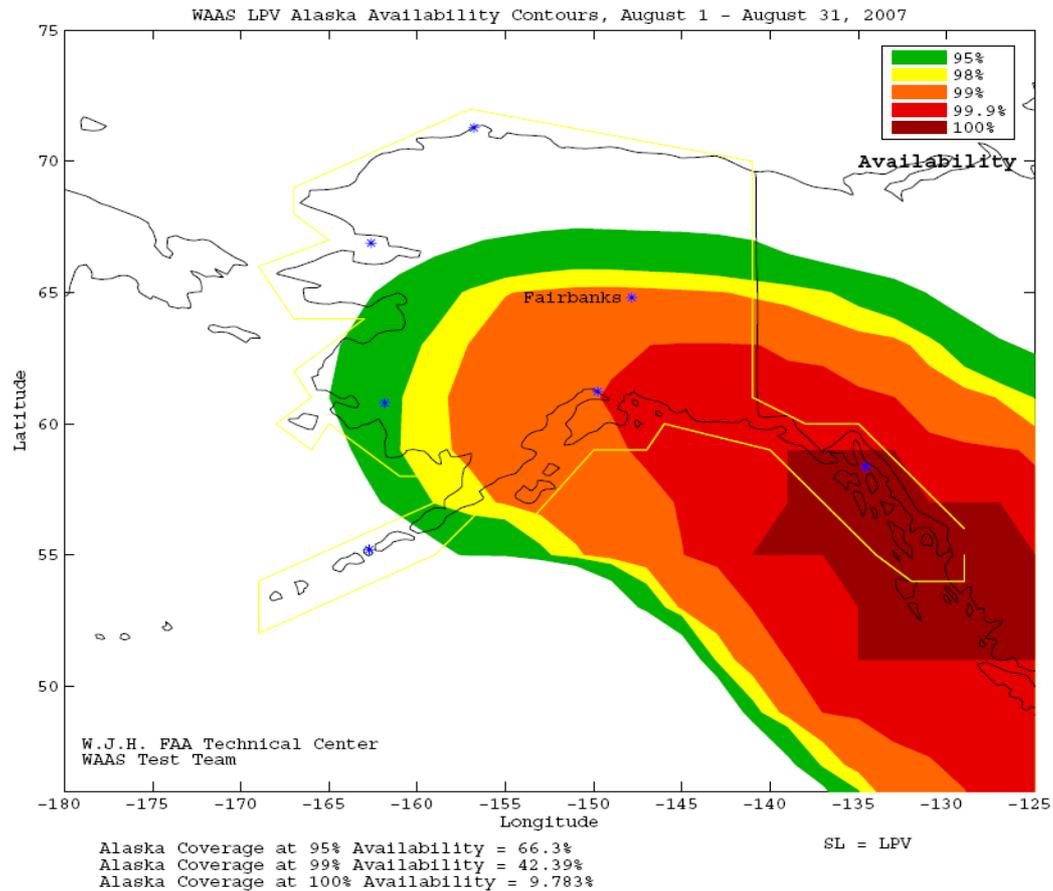
LPVs Published to ILS Runways 416

Cumulative LPVs Published to Date 964

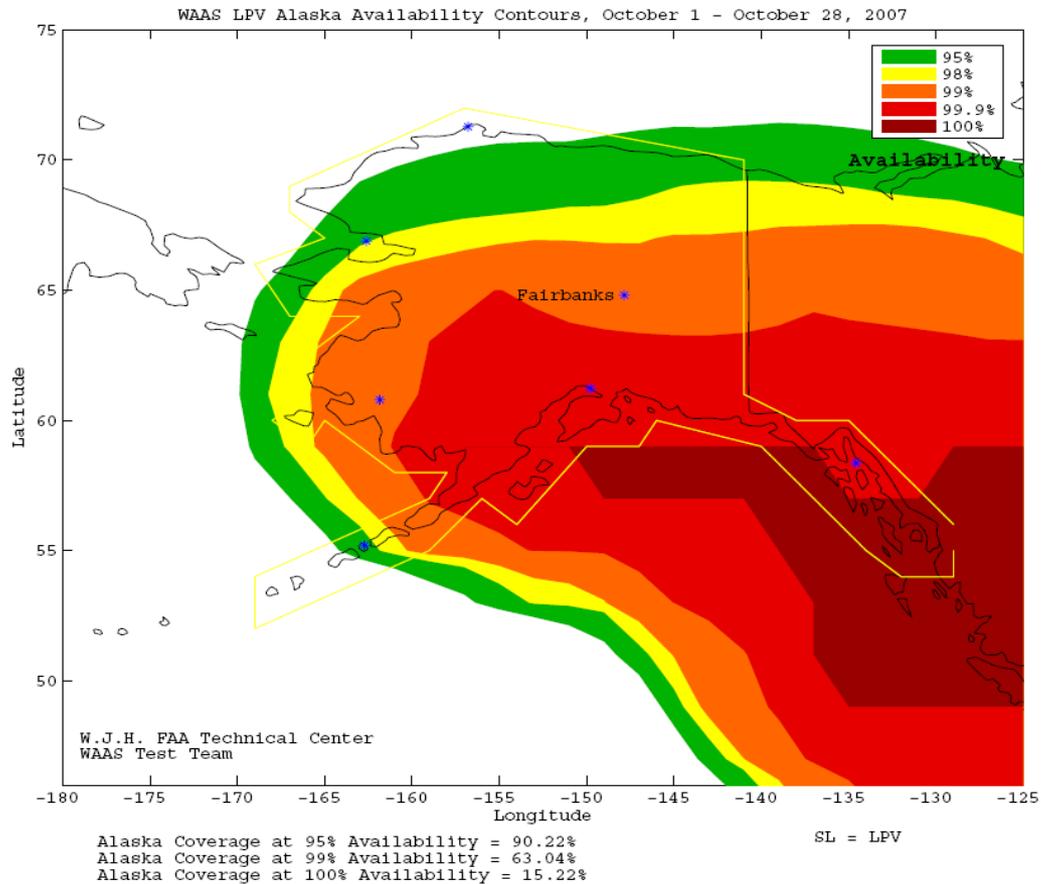
(Successful LPV Flight Checks April 27, 2007: Anchorage, Homer, Emmonak, St. Michaels)

LPVs Published to <250' Decision Altitude = 12

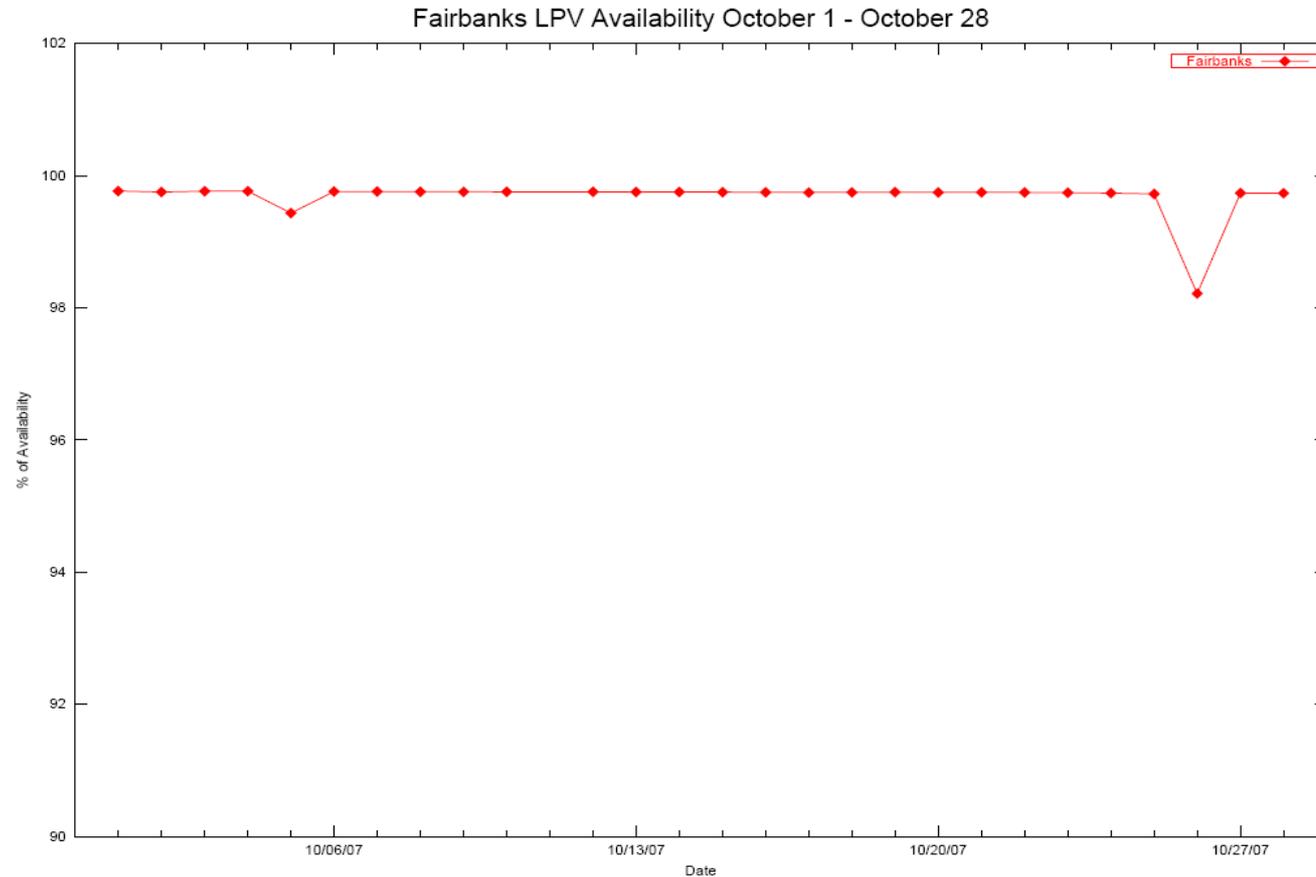
Actual - August 2007 WAAS LPV Coverage in Alaska (30 day analysis)



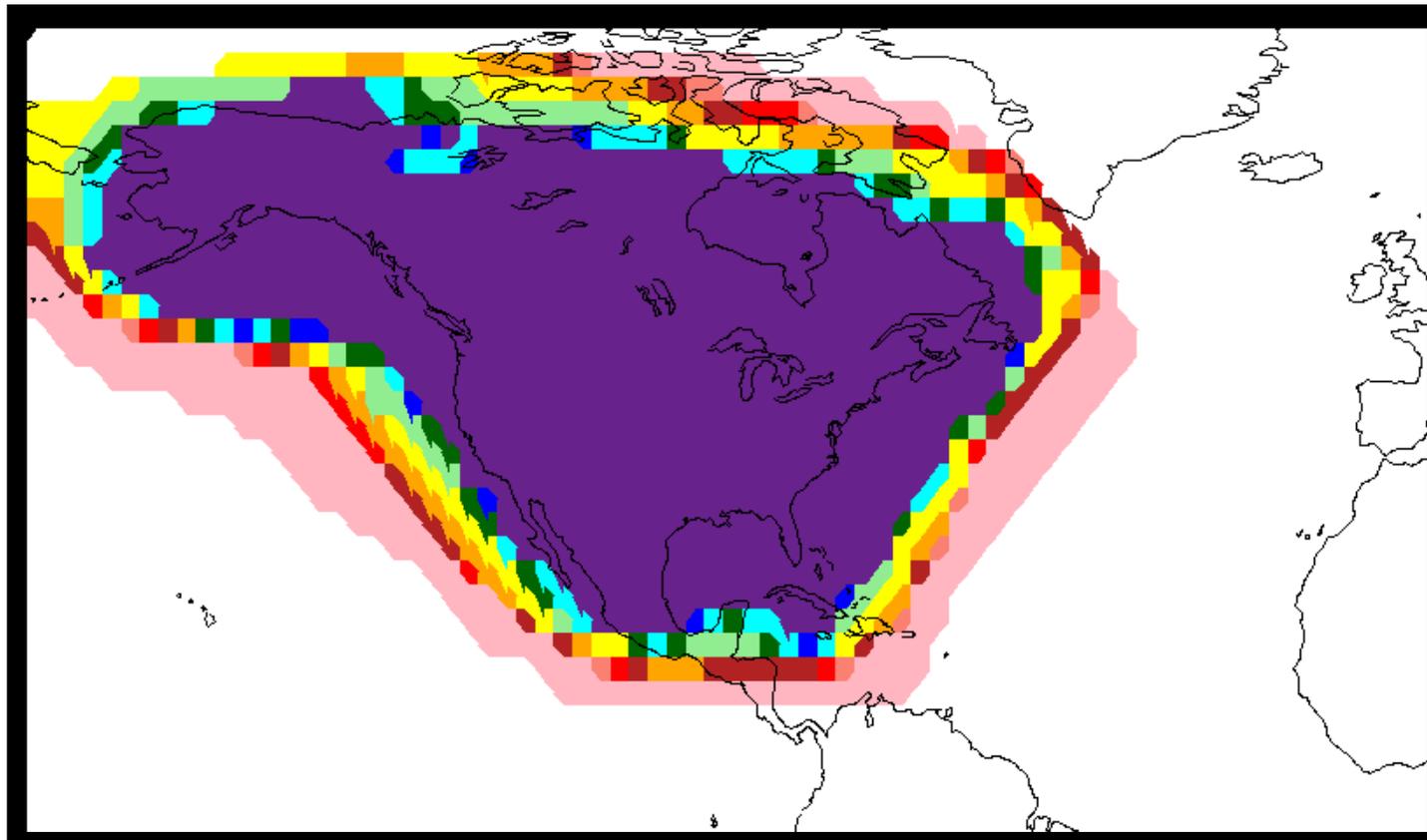
Actual - October 2007 WAAS LPV Coverage in Alaska (30 day analysis)



Daily WAAS LPV Availability at the Fairbanks WRS during October 2007



FLP WAAS Service Area for LPV (HAL = 40 m; VAL = 50 m), With No Satellite Failures

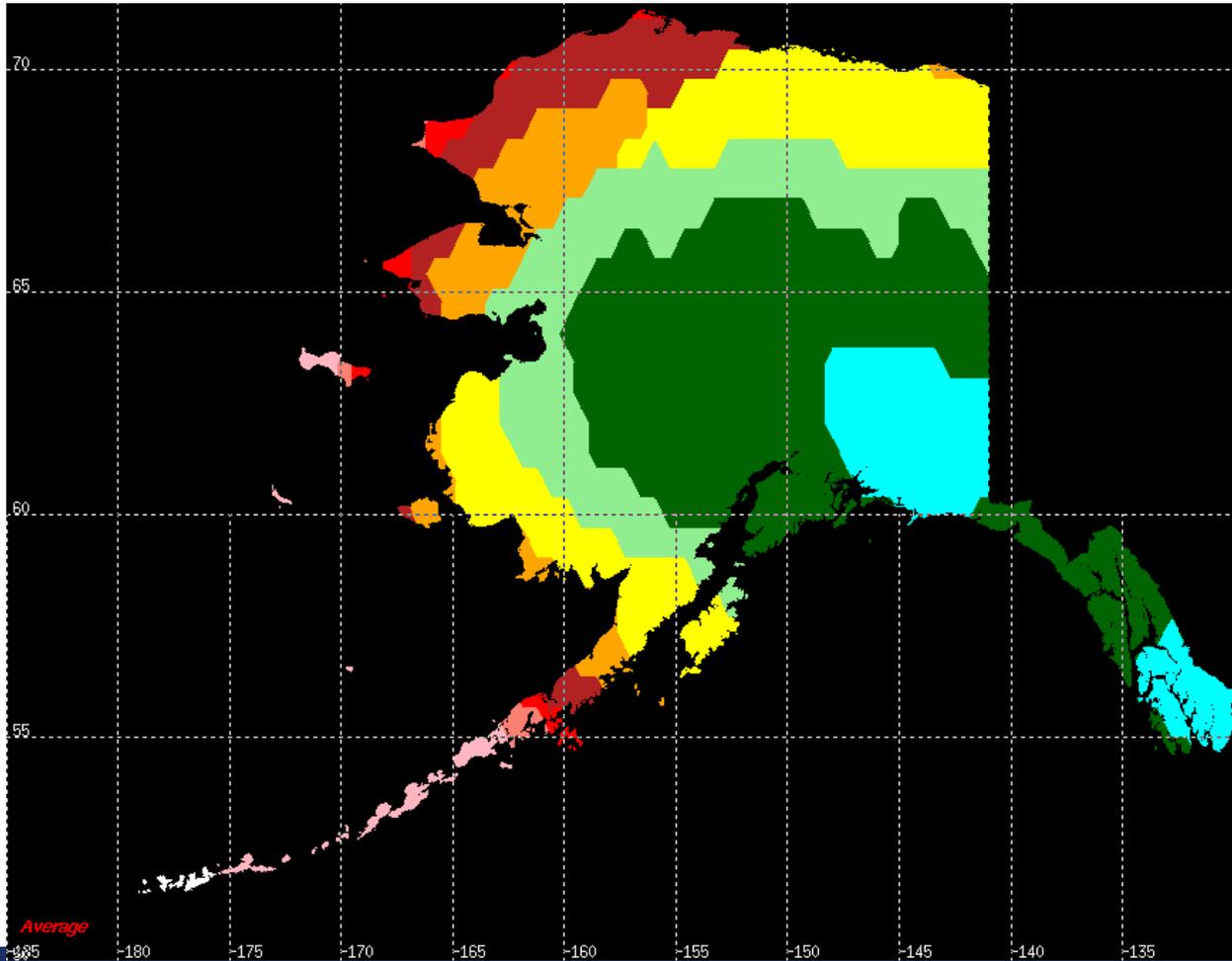


AVAILABILITY

0.9999<	<=1.0000
0.9995<	<=0.9999
0.9990<	<=0.9995
0.9950<	<=0.9990
0.9900<	<=0.9950
0.9800<	<=0.9900
0.9500<	<=0.9800
0.9000<	<=0.9500
0.8500<	<=0.9000
0.8000<	<=0.8500
0.7500<	<=0.8000
0.0000<	<=0.7500
	=0.0000

- The figure shows average LPV availability performance over 288 5-minute epochs (24 hours).
- The different colors correspond to different levels of LPV service availability as shown by the color bar on the right side of the figure
- The figure assumes a 24-satellite GPS constellation without failure and two WAAS GEOs with ranging function.

Near Term WAAS LPV Coverage: Standard Statistical Models for Satellite Failure and Restoration



Standard satellite failure and restoration model, nominal 24 satellite constellation

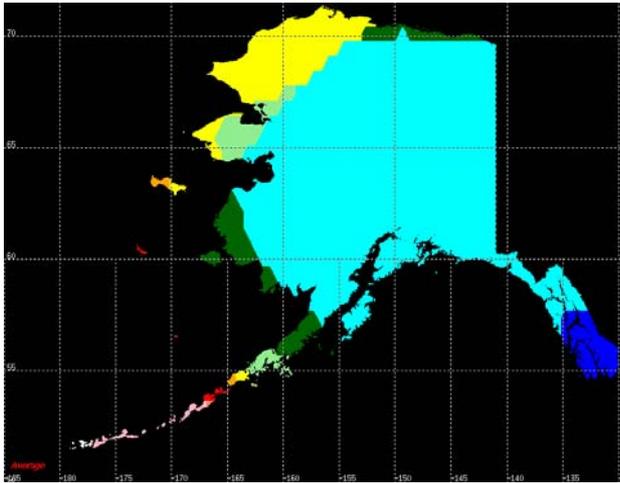
AVAILABILITY

0.9999<	<=1.0000
0.9995<	<=0.9999
0.9990<	<=0.9995
0.9950<	<=0.9990
0.9900<	<=0.9950
0.9800<	<=0.9900
0.9500<	<=0.9800
0.9000<	<=0.9500
0.8500<	<=0.9000
0.8000<	<=0.8500
0.7500<	<=0.8000
0.0000<	<=0.7500
	=0.0000

FLP 50 meter

VAL = 50 meters

A
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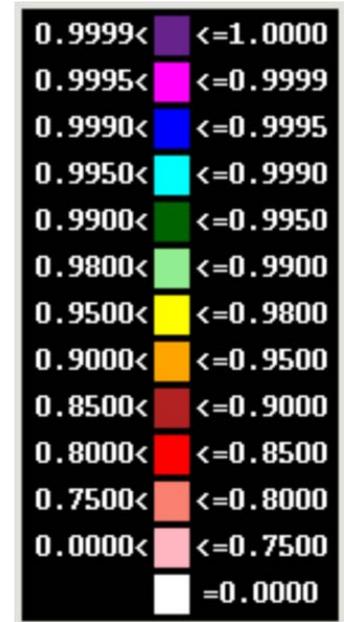


Standard satellite failure
and restoration model,
nominal 24 satellite
constellation

Results reflect modifications
through software release 8
Approx: 10/2007

GEO LOCATIONS

- PanAmSat: 133 W (UDRE = 7.5 m)
- Telesat: 107 W (UDRE = 7.5 m)



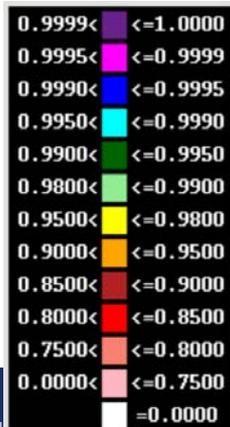
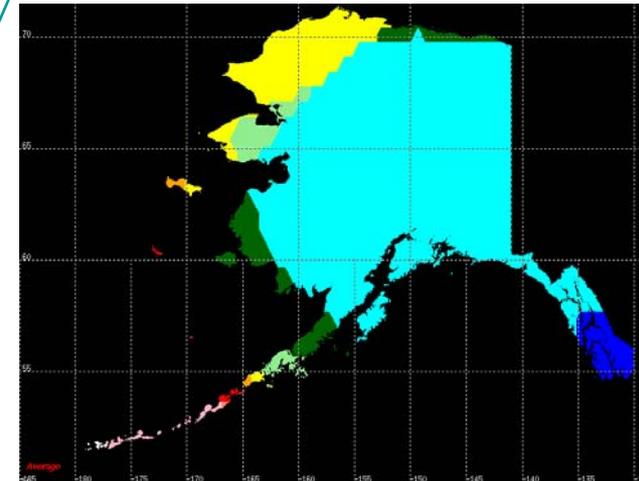
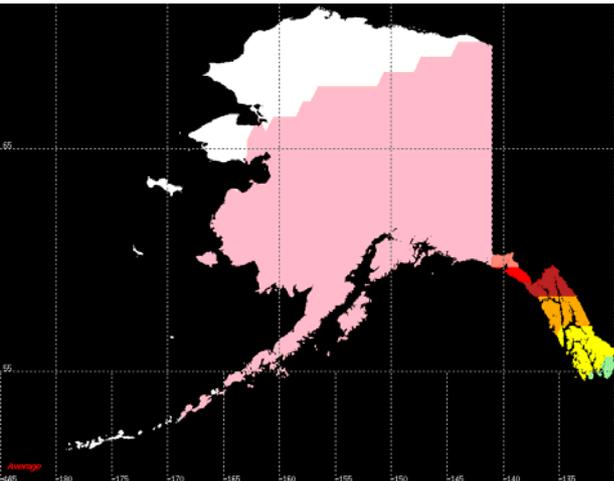
AVAILABILITY

Planned Evolution of WAAS LPV (50 m VAL, 40 m HAL)

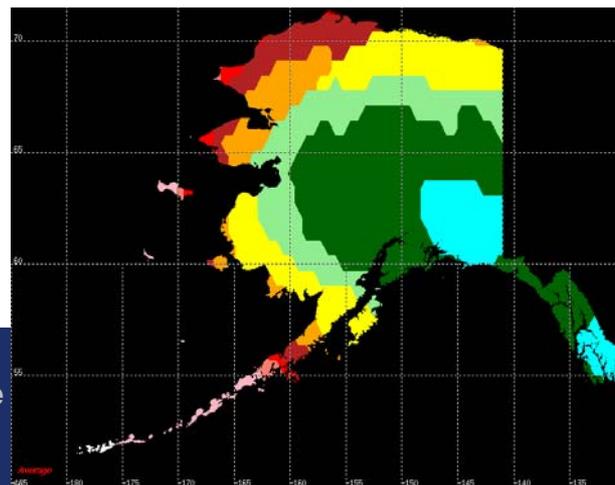


***Initial Operational Capability (IOC)**

Full LPV Performance (FLP)



*Planned Improvements
Include Releases 2 – 8*



Standard satellite failure
and restoration model,
nominal 24 satellite
constellation

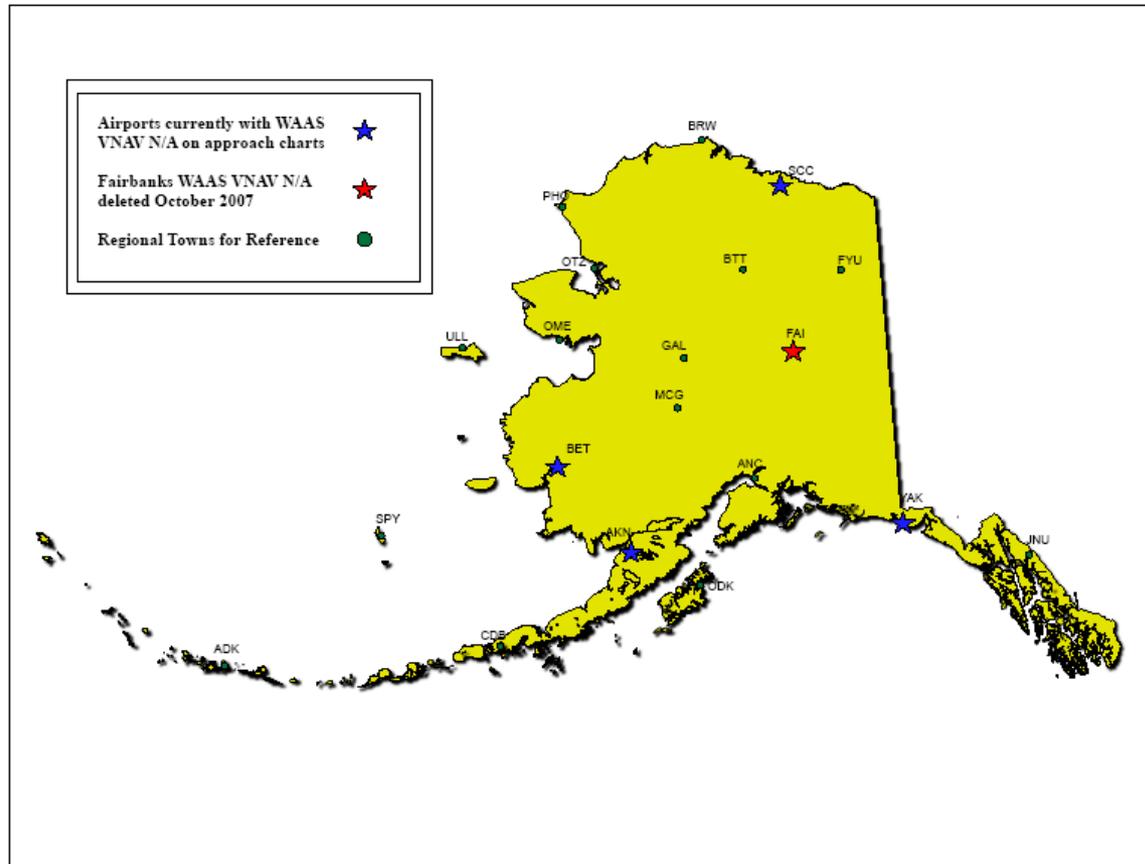


Aviation Expo North - Outcomes

- **Inquiries on future LPV production and WAAS availability**
- **Availability of GNSS-enabled routes; e.g., cancellation of NOTAMs**
- **GARMIN 480 issues – flying into Fairbanks**
 - original LNAV/VNAV approaches in Alaska prior to 2007
 - NOTAM was issued cancelling Fairbanks WAAS VNAV N/A statement on approach plate
 - JEPPESEN worked from NOTAM to update their database
 - LPV for Fairbanks is scheduled for 2009



Currently 4 WAAS VNAV N/A



Galena Update

- **Confirmed dates with military here in DC and Anchorage**
- Below is a summary of the Galena AWOS.
 - **11 AF does not plan to remove/demolish the AWOS at Galena until 1 Oct, 2008. Rationale for the Aug 07 Notice of Proposed Construction/Alteration is as follows:**
 - **11 AF elected to submit numerous Notices of Proposed Construction for all on-going activity at Galena, to include the demolition of the AWOS. A date is required to process the form so 25 Aug was chosen. However, there are no plans to demolish the AWOS until 1 Oct 08. This was an attempt by 11 AF to get ahead of the paperwork requirements related to the project. While the Notice of Construction is only valid for 180 days, 11 AF plans to request an extension for additional 180 days, presumably easier than refiling a separate notice.**
 - **The 11 AF POC that worked the issue are Mr. Randy Barker (611 ASG/CD)**

Galena Update (cont.)

- Military issue temporarily addressed; AIP remains major issue for maintenance, etc
- FAA approached Alaska DOT to accept a grant to procure the AWOS for Galena and they verbally told FAA they would not consider accepting such a grant.
- FAA sent Alaska DOT a letter last week asking them to put that in writing and they haven't gotten back to FAA yet.
- FAA Alaska Region Airports DIV will send the acting Dep DOT commissioner an email to get a status on the letter.
- FAA may approach North Slope Borough, if unsuccessful w/ State DOT.



SBS Operational Update

- **Performance Based Navigation (PBN)**
 - Status
- **Expansion of Surveillance Services**
 - Statewide Authorization
 - MEARTS Update
 - Transition Plan
- **Chelton 6.0 Bravo Update**
 - Items completed as of October
 - Flight Test will take place November 15, 2007
 - Memory Upgrade underway for Sims and 6.0B



SBS Technical Update

SBS/Segment I (FY 07-10)

- **Southwest Phase I**
 - 5 Ground Based Tranceivers (GBT's) providing critical services
 - 5 GBT's providing essential services
- **Southeast Phase II**
 - Ground Stations
 - Approximately 180 aircraft Capstone equipped
 - 11 sites fully operational providing Essential Services.
 - Initial acceptance activities at High Mountain
 - Completion expected November 30, 2007 (awaiting telco)
 - Joint Acceptance Activities scheduled for Sunnahae and High Mountain
 - Wide Area Multilateration (WAM)
 - System Architecture under development
 - Site Engineering and Design in progress
 - Site selections being revisited
 - Contract Proposal under review
- **Service Volume 6 (ANC-FAI), 11 (OME), and 13 (OTZ)**
 - 23% of the total FAA reported yearly flight hours
 - Deploy approximately 11 test Ground Stations for Essential Service, maintained by SBS Office
 - Engineering started for 5 GBT's (Kotzebue, Nome, Curry, Anchorage, Fairbanks)
 - 4 Automated Weather Sensing Systems (AWSS) (Brevig –Mission, White Mountain, Robert Bob Curtis, Shaktoolik)

AIC Update

- **AIC continues to meet bi-weekly**
- **Site Implementation Team**
- **Avionics Equipage Team**
- **External Coordination Team**
- **Final Plan v7.1**
- **Coordinate, State, Federal and FAA interests**



Avionics Equipage Team

