

**WAAS Technical Report**  
**William J. Hughes Technical Center**  
**Pomona, New Jersey**  
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***DR#51: Loss of LPV service area in Alaska due to IGP GIVE set to 15.***  
***GPS Week/Day: Week 1419 Day 6 (3/24/2007)***

**Discussion:**

On Week 1419 Day 4 Alaska area experienced a drop in LPV service, where the 99% availability was just at 17%. Figure 1 show the instantaneous LPV WAAS coverage trend in Alaska. Base on the figure, the largest drop in the availability happened around GPS time 554310 (9:58:31 GMT).

Figure 1

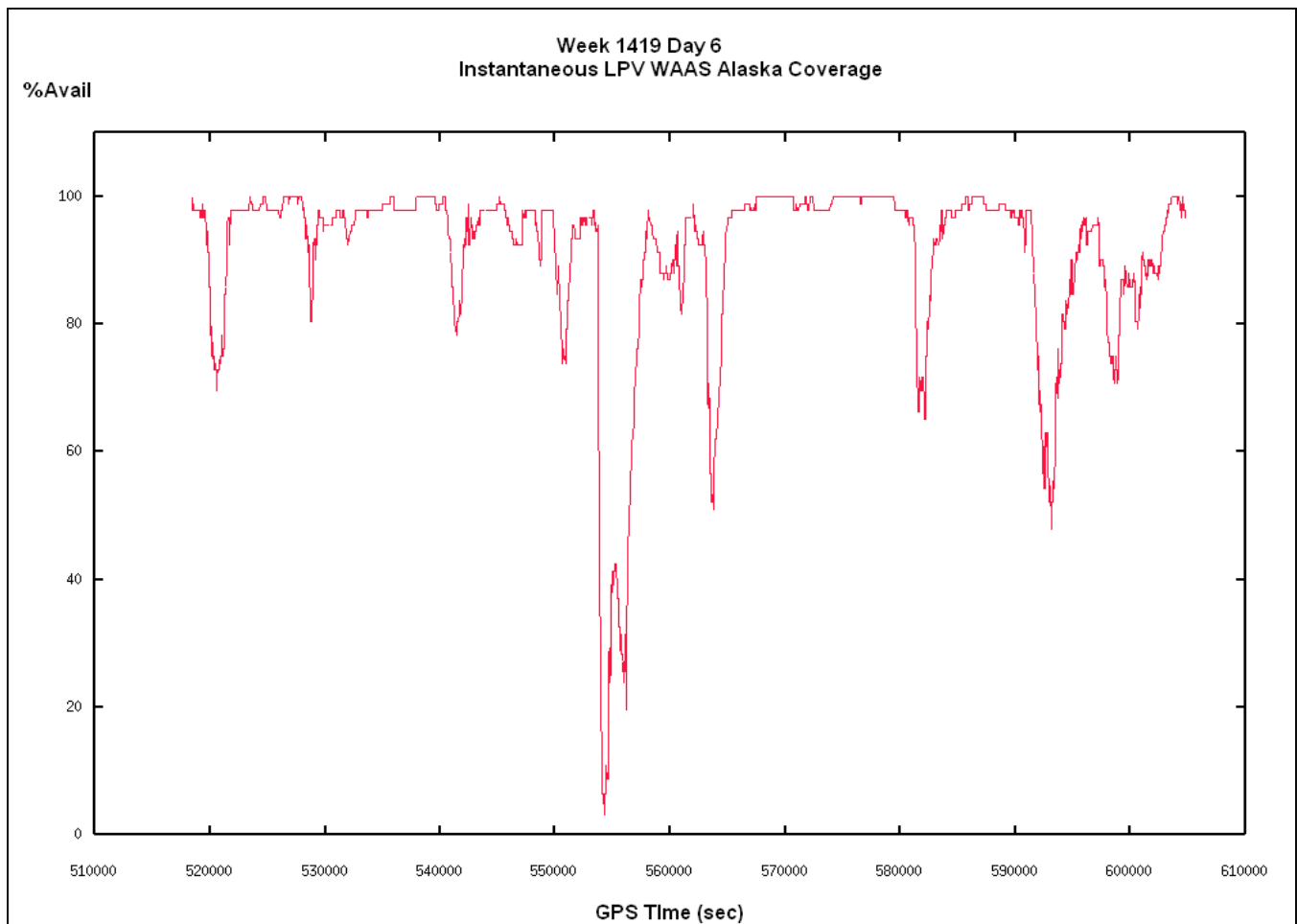
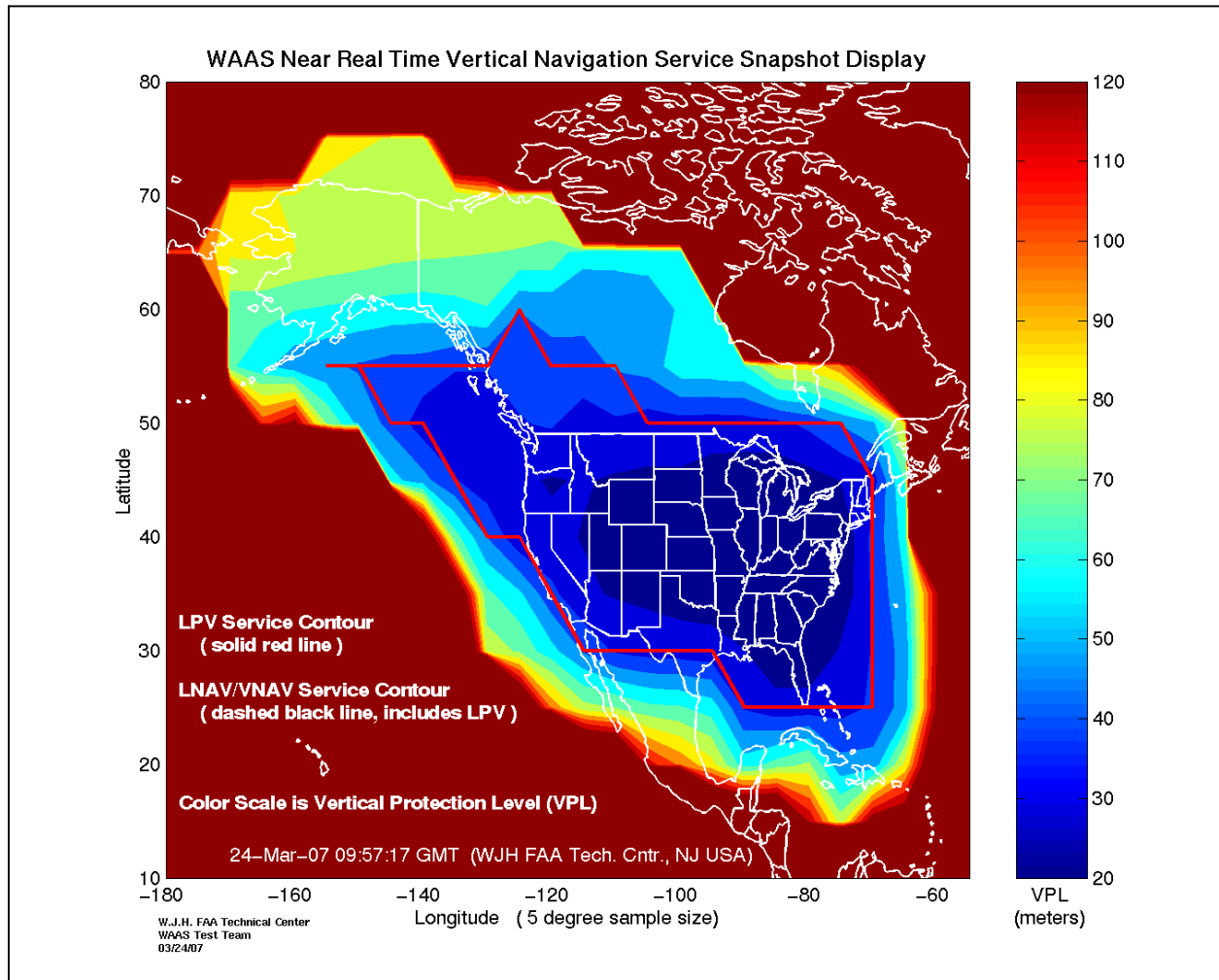


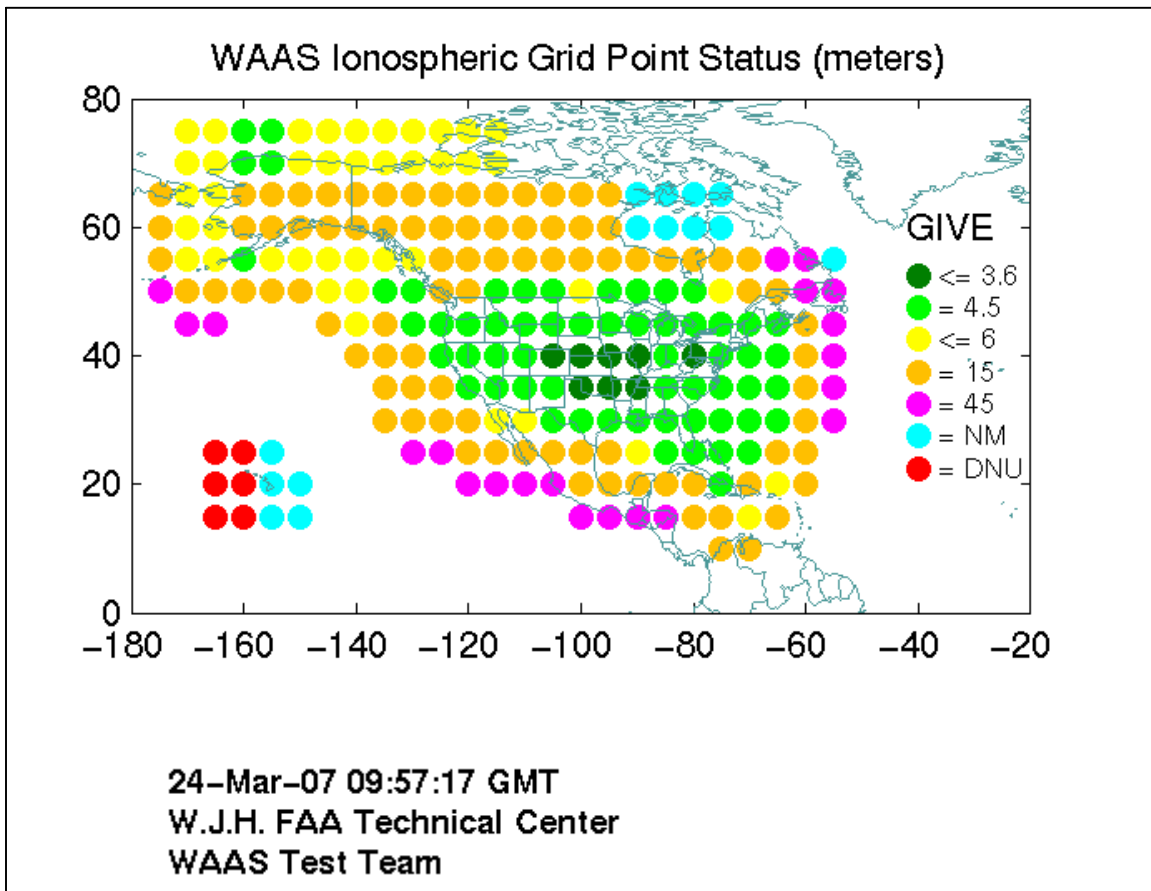
Figure 2 shows the real time vertical navigation service snapshot contour plot at 09:57:17 GMT on the same day, which is approximately the same time when the largest drop in Alaska LPV availability occurred. The plot shows a smaller LPV service contour (solid red line) and Alaska area is completely excluded from the service.

Figure 2



On the same day and time (09:57:17 GMT), Figure 3 shows the WAAS Ionospheric Grid Point (IGP) Status across North America. In the Alaska area, the figure shows that the IGP GIVE values at 65 degrees latitude and from 140 to 160 degrees longitude were 15 meters at that time.

Figure 3



Based on the daily operational service, the Alaska area shows similar instantaneous LPV coverage drops each day. However, on this day the coverage around 9:58:31 GMT dropped lower for a longer time than usual, compared to a normal day. The IGP GIVE values in Alaska area during this time were also higher than a normal day, which have been 6 meters or less. With the IGP GIVE values of 15 meters, the Vertical Protection Level (VPL) exceeded 50 meters.

There were not any other events on this day that would have affected the LPV service in Alaska area. Examples of similar days when the LPV service in Alaska area was affected by IGP GIVE values being set to 15 meters are Week 1417 Day 2 (3/6/2007) and Week 1418 Day 0 (3/11/2007).

### **Conclusion**

More IGP GIVE values were set to 15 meters rather than 6 meters or less on the Alaska area compare to a good or normal day. The increase in the GIVE values at certain IGPs contributed to the loss of availability in Alaska.