

# Civil Report Card On GPS Performance

## October 2008

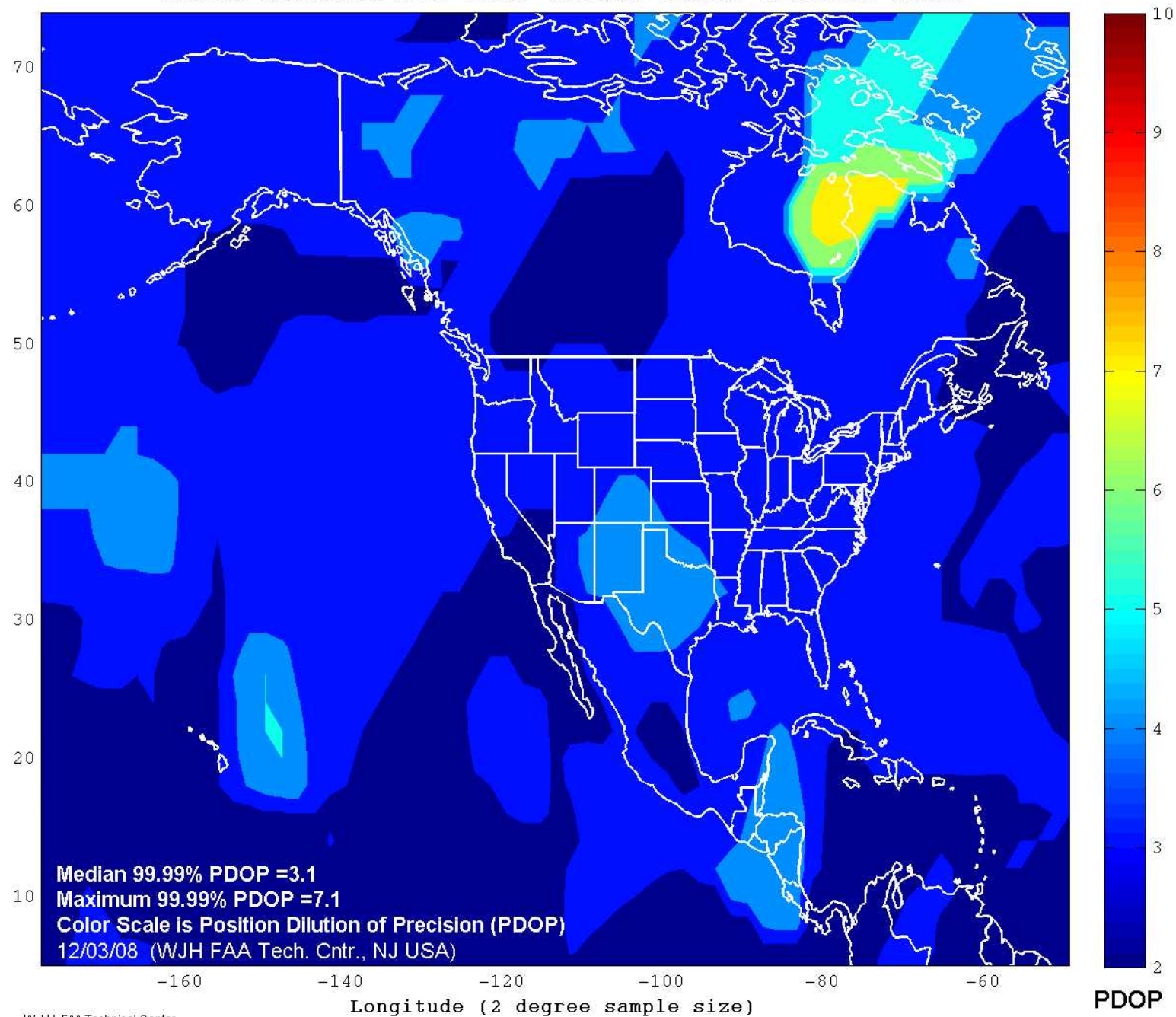
| Operational Performance Parameter                           | CY 2007           | Sept 2008         | Oct 2008          | Long term | Short term |
|-------------------------------------------------------------|-------------------|-------------------|-------------------|-----------|------------|
| <b>Availability Parameters</b>                              |                   |                   |                   |           |            |
| <i>Average Number of satellites usable</i>                  | 29.80             | 30.44             | 30.90             | ↑         | ↑          |
| <i>Average number of satellites usable in primary slots</i> | 23.91<br>(99.62%) | 23.95<br>(99.78%) | 23.97<br>(99.85%) | ↑         | ↑          |
| <i>Average availability of 6 satellites in view</i>         | 99.99%            | 99.99%            | 99.99%            | →         | →          |
| <b>99.99% Horizontal DOP</b>                                |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 1.8               | 1.6               | 1.5               | ↑         | →          |
| <i>Worst Site</i>                                           | 3.4               | 3.4               | 3.6               | ↓         | ↓          |
| <b>99.99% Vertical DOP</b>                                  |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 3.3               | 3.0               | 2.8               | ↑         | ↑          |
| <i>Worst Site</i>                                           | 7.4               | 6.0               | 6.5               | ↑         | ↓          |
| <b>99.99% Position DOP (PDOP)</b>                           |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 3.6               | 3.3               | 3.1               | ↑         | ↑          |
| <i>Worst Site</i>                                           | 7.8               | 6.7               | 7.1               | ↑         | ↓          |
| <b>Accuracy Parameters</b>                                  |                   |                   |                   |           |            |
| <b>RMS Single Frequency User Range Error</b>                |                   |                   |                   |           |            |
| <i>Constellation Median</i>                                 | 1.77              | 1.60              | 1.77              | →         | ↓          |
| <i>Worst Satellite</i>                                      | 2.29              | 2.03              | 2.38              | ↓         | ↓          |
| <b>95% Horizontal Error</b>                                 |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 2.32              | 2.00              | 2.10              | ↑         | ↓          |
| <i>Worst Site</i>                                           | 3.63              | 3.04              | 3.66              | ↓         | ↓          |
| <i>Availability (% &lt;4.5m (historical 3-sigma))</i>       | 99.81%            | 99.95%            | 99.90%            | ↑         | ↓          |
| <b>95% Vertical Error</b>                                   |                   |                   |                   |           |            |
| <i>Area Median</i>                                          | 4.45              | 4.01              | 4.35              | ↑         | ↓          |
| <i>Worst Site</i>                                           | 4.95              | 4.72              | 5.01              | ↓         | ↓          |
| <i>Availability (% &lt; 9m (historical 3-sigma))</i>        | 99.92%            | 99.98%            | 99.97%            | ↑         | →          |

Key: ↑ improving ↓ worsening → no significant change

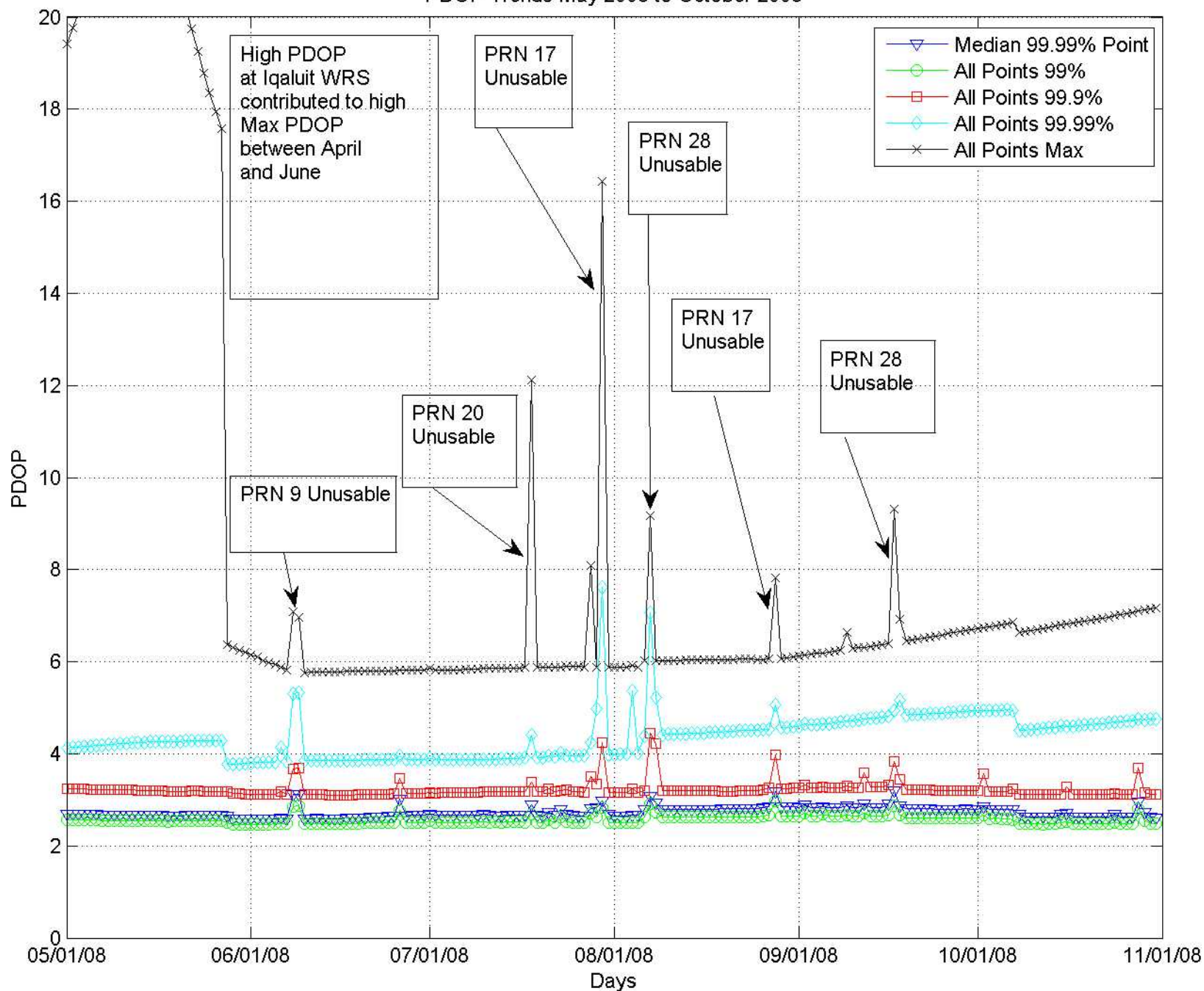
Long Term is current month vs. prior 24 months; Short Term is current month vs. prior month

Compiled from WAAS network as requested by the Defense Science Board

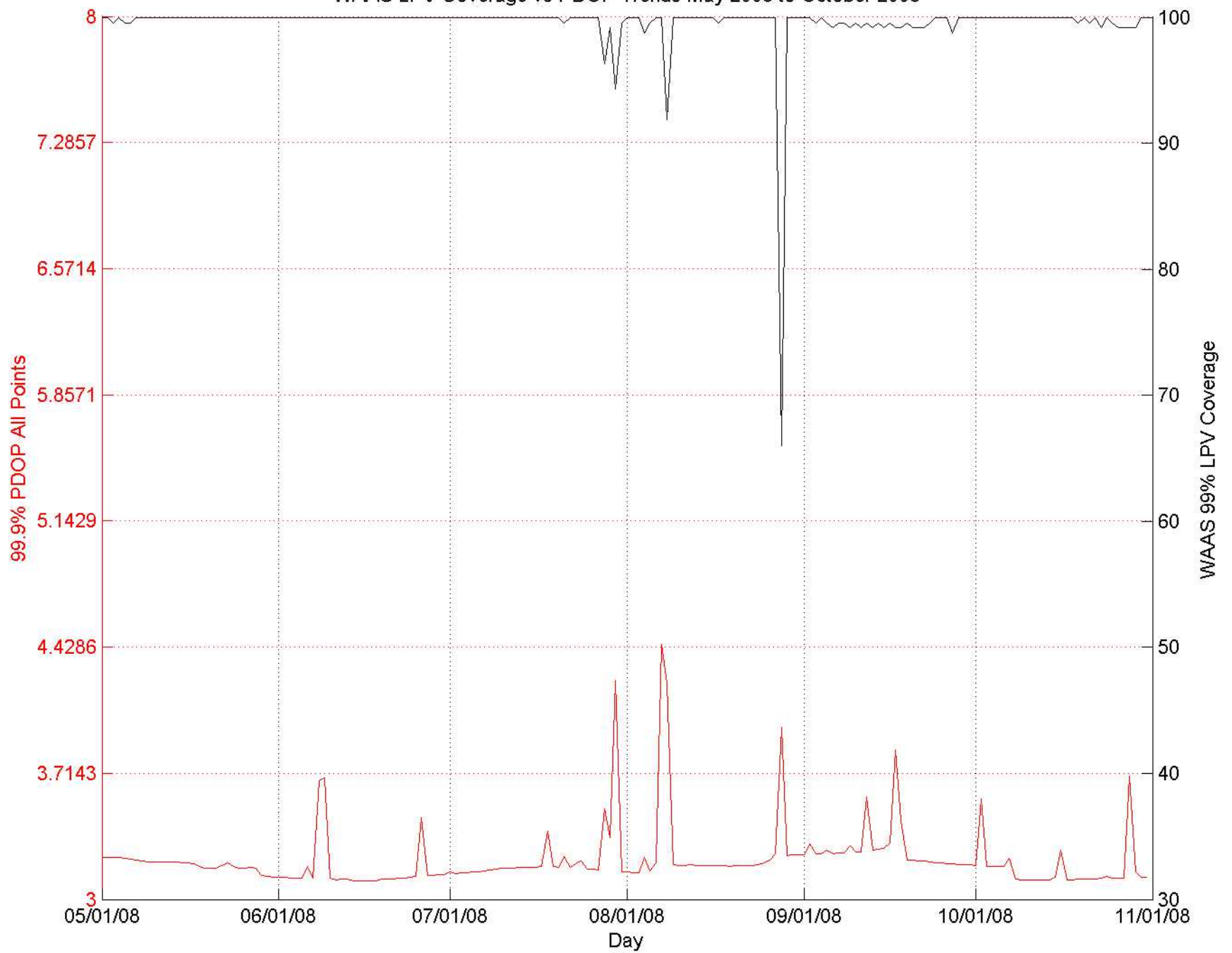
# North America GPS PDOP 99.99% Index October 2008



PDOP Trends May 2008 to October 2008



WAAS LPV Coverage vs PDOP Trends May 2008 to October 2008



Six Satellite Availability Trends May 2008 to October 2008

