

# Civil Report Card On GPS Performance

## June 2009

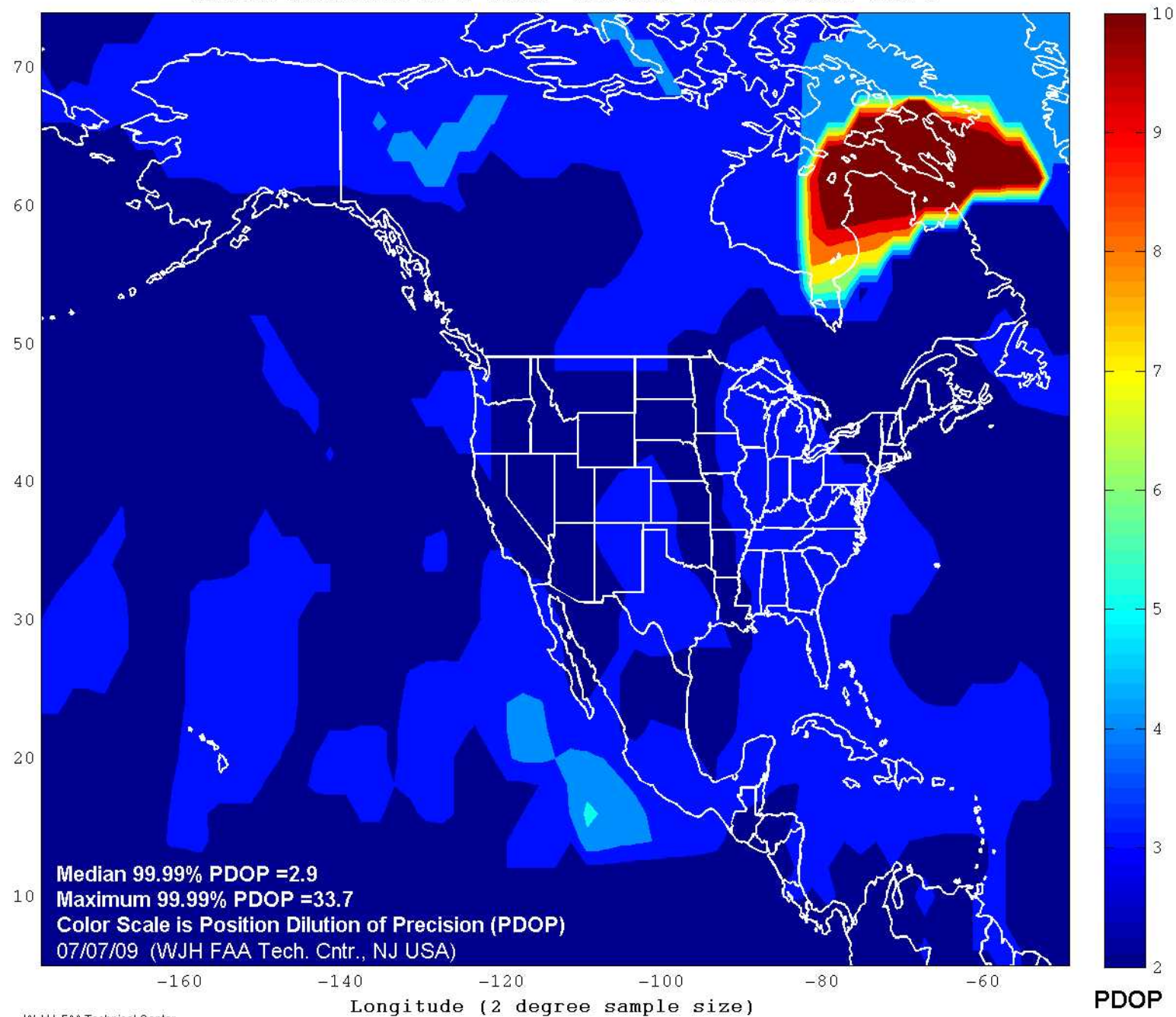
| Operational Performance Parameter                           | CY 2008           | May 2009          | June 2009       | Long term | Short term |
|-------------------------------------------------------------|-------------------|-------------------|-----------------|-----------|------------|
| <b>Availability Parameters</b>                              |                   |                   |                 |           |            |
| <i>Average Number of satellites usable</i>                  | 30.48             | 30.98             | 30.84           | ↑         | ↓          |
| <i>Average number of satellites usable in primary slots</i> | 23.95<br>(99.80%) | 23.98<br>(99.90%) | 24.00<br>(100%) | ↑         | ↑          |
| <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               | 1.4               | 1.5             | ↑         | ↓          |
| <i>Worst Site</i>                                           | 5.8               | 4.6               | 8.7             | ↓         | ↓          |
| <b>99.99% Vertical DOP</b>                                  |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 3.3               | 2.5               | 2.5             | ↑         | →          |
| <i>Worst Site</i>                                           | 17.6              | 11.7              | 32.6            | ↓         | ↓          |
| <b>99.99% Position DOP (PDOP)</b>                           |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 3.6               | 2.9               | 2.9             | ↑         | →          |
| <i>Worst Site</i>                                           | 18.3              | 12.6              | 33.7            | ↓         | ↓          |
| <b>Accuracy Parameters</b>                                  |                   |                   |                 |           |            |
| <b>RMS Single Frequency User Range Error</b>                |                   |                   |                 |           |            |
| <i>Constellation Median</i>                                 | 1.72              | 1.57              | 1.41            | ↑         | ↑          |
| <i>Worst Satellite</i>                                      | 2.14              | 1.96              | 1.99            | ↑         | ↓          |
| <b>95% Horizontal Error</b>                                 |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 2.36              | 2.08              | 1.94            | ↑         | ↑          |
| <i>Worst Site</i>                                           | 3.35              | 2.99              | 2.50            | ↑         | ↑          |
| <i>Availability (% &lt;4.5m (historical 3-sigma))</i>       | 99.77%            | 99.98%            | 99.98%          | ↑         | →          |
| <b>95% Vertical Error</b>                                   |                   |                   |                 |           |            |
| <i>Area Median</i>                                          | 4.46              | 3.90              | 3.21            | ↑         | ↑          |
| <i>Worst Site</i>                                           | 4.95              | 4.65              | 3.95            | ↑         | ↑          |
| <i>Availability (% &lt; 9m (historical 3-sigma))</i>        | 99.94%            | 99.99%            | 99.99%          | ↑         | →          |

Key: ↑ improving ↓ worsening → no significant change

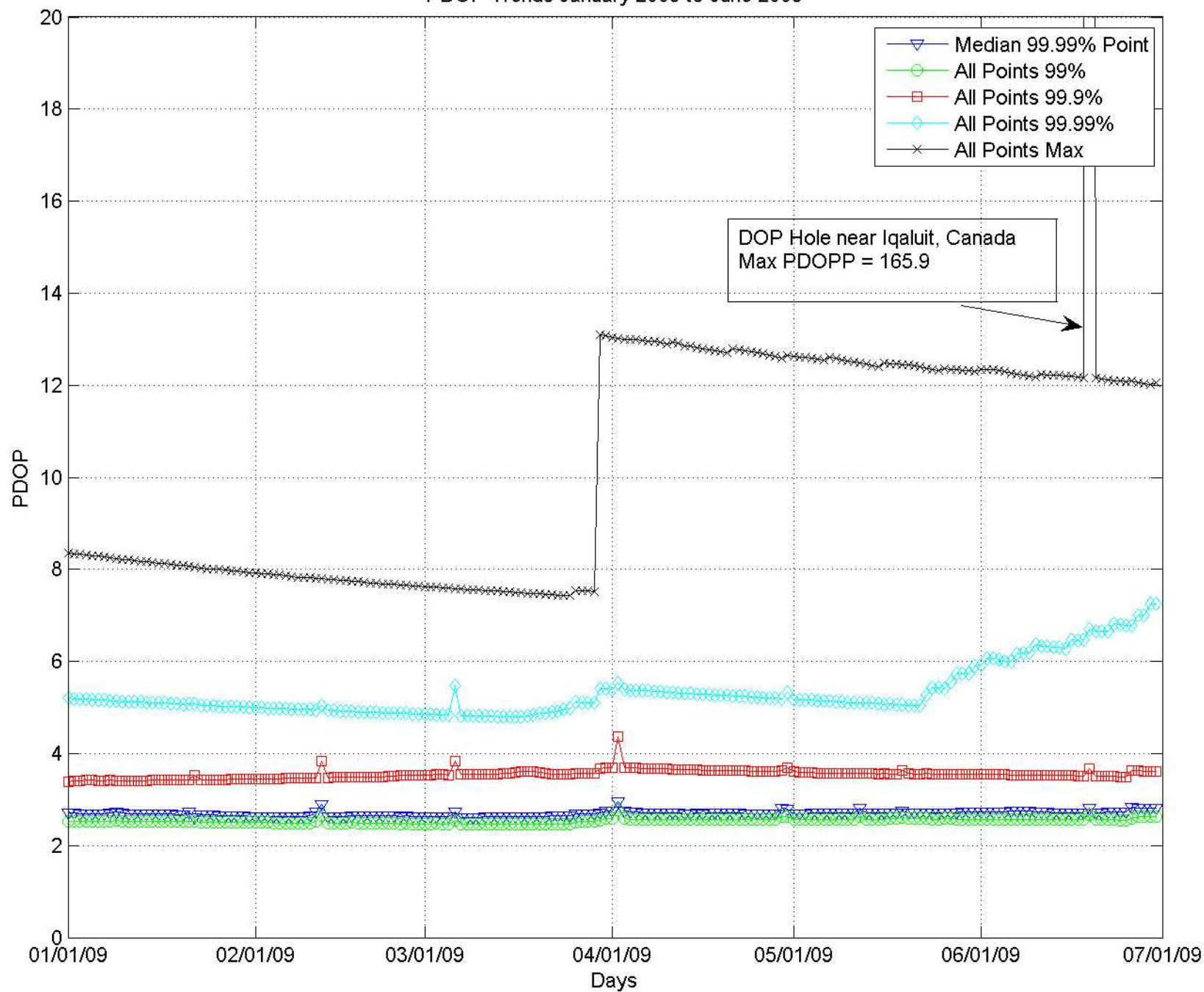
Long Term is current month vs. prior 24 months; Short Term is current month vs. prior month

Compiled from WAAS network as requested by the Defense Science Board

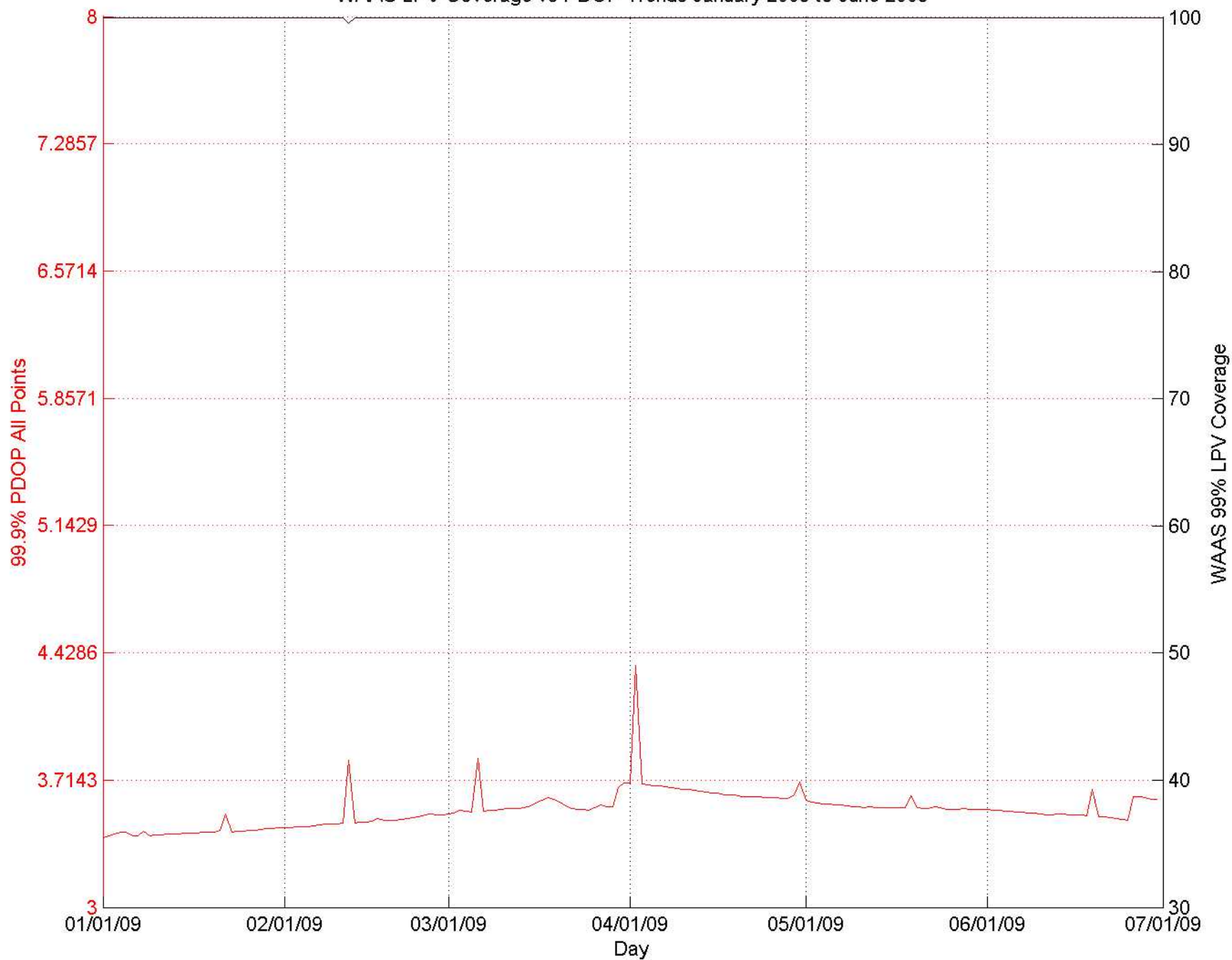
# North America GPS PDOP 99.99% Index June 2009



PDOP Trends January 2009 to June 2009



WAAS LPV Coverage vs PDOP Trends January 2009 to June 2009



Six Satellite Availability Trends January 2009 to June 2009

