

CHAPTER 5 – SUMMARY AND FUTURE TRENDS

Emerging technologies such as automated machine guidance and intelligent vehicle highways will continue to drive the demands for real-world spatial data and true 3-D designs. Interestingly, high demand, high dollar positioning activities such as intelligent vehicle systems don't necessarily require accurate positions, but their demands for extremely high levels of reliability (i.e. 3 to 5 sigma criteria, 99.999% system confidence) are achieved through many of the same techniques that make real-time survey-quality positioning possible. In the years ahead, miniaturization will catch up with desires for a laser scanner that resembles today's total station instruments in size and cost. Applanix, the manufacture of the airborne positioning system used for Sevenmile Road, is already promoting a backpackable combination of inertial-aided real-time GPS that will take GPS surveying under trees, inside buildings and tunnels. Real-time GPS networks are appearing today that literally spell the end to ever visiting a horizontal or vertical control point in the future. When high-speed bandwidth reaches everyone's desks, designers will no longer be satisfied with even emailed CADD files to replace standard blueprints. Project websites with interactive applications and fly-through movies will be the expectation in the next decades.

Through projects such as those described above, the Federal Lands Divisions of the Federal Highways Administration have taken a deliberate active position to understanding and implementing technological innovations. Developing these innovations into operational methods will demand further investigations and motivated personnel supported with continuing education and training.

