

Course Length – USATF Certified Courses

We often receive questions about course length compared to GPS readings, therefore we provide this information regarding all HMF USATF certified courses:

The course you ran was certified and accurately measured by USA Track and Field, the governing body for road running in this country. Courses are not measured by GPS, tape measure, surveying equipment, car or by walking with a measuring wheel. All USATF certified road race courses are measured by a standard bicycle fitted with a calibrated mechanical counter on the front wheel.

GPS readings on the course are almost always slightly longer than the distance measured with this mechanical counter. There are several reasons for these differences:

- 1) Courses are measured by the shortest-possible route available to runners on race day. This means that the measuring bicycle is ridden within one foot of the curb and turns are “straightened out” as much as possible. This method is used to ensure that no one runs shorter than the stated distance. With other runners on the course, this shortest route can be difficult to run exactly as measured.
- 2) All certified courses include a 1/10th of 1 percent (one-thousandth percent) “short course prevention factor.” This is a small extra cushion to also make sure no one runs less than the stated distance. In other words, a certified 10 km (10,000 meters) road race is actually measured as 10,010 meter. For a full marathon, that means 42.1925 extra meters or a little more than 135 feet. This extra cushion is spread out throughout the course, not simply added to the start and finish, and is present in ALL USATF certified courses.
- 3) Consumer GPS devices are not 100% accurate and are typically 1-to-2% off. GPS accuracy is affected by elevation, the number of turns, tree coverage, tall buildings, bridges, overpasses, and the quality and quantity of satellite reception. In a half marathon, a 1% difference is more than a tenth of a mile. So, readings of 13.25 miles or more for a 13.10938-mile certified half marathon course and 26.50 miles or more for a certified 26.21876-mile marathon are not unusual and are expected.

We realize this may be a long answer to a simple question, but we take course distance very seriously. All of our USATF certified races are certified by experienced internationally accredited measurers, with decades of experience. When our certifier measures a course with a mechanical counter, there is also a Garmin Edge 705 mounted on his bike handlebars for reference, elevation, and computer mapping. Garmin readings are always longer than the distance measured with the mechanical counter. For example, a recently measured half marathon, which is 13.109876 miles, showed GPS reading of 13.30 miles.

It is also important to note that mile markers, though accurately measured, are not certified. Only the total race distance measured is certified.

The GPS is a useful and informative training device. Most runners have come to understand and accept that the information it provides about distance, pace-per-mile, average pace, elevation, etc., though very close, is not 100% accurate. Trust the stopwatch function, of course, but know the distance feature will almost always give a reading that is “too long” when used on a certified course. (Consequently, the “pace per mile” or “average pace” functions will be too fast.)

If you want more information about how courses are measured, visit the “Course Certification” section of the USA Track and Field Website: [HERE](#)

If you have any questions about HMF course distances, contact Technical Director, Josh Miller at Josh@Hartfordmarathon.com.

Thank you for participating and best wishes for your training and racing.

HMF Team