What is the WSRN?
How Can It Help Improve GIS Mapping?

GPS is a commonly utilized field technology for GIS and asset mapping.

And it has evolved rapidly…

For instance, GPS is just one of the navigation satellite systems. There are four key ones usable in the US. Together they compromise GNSS (global navigation satellite system**s**). More satellites means you can work in more places, like under many trees.

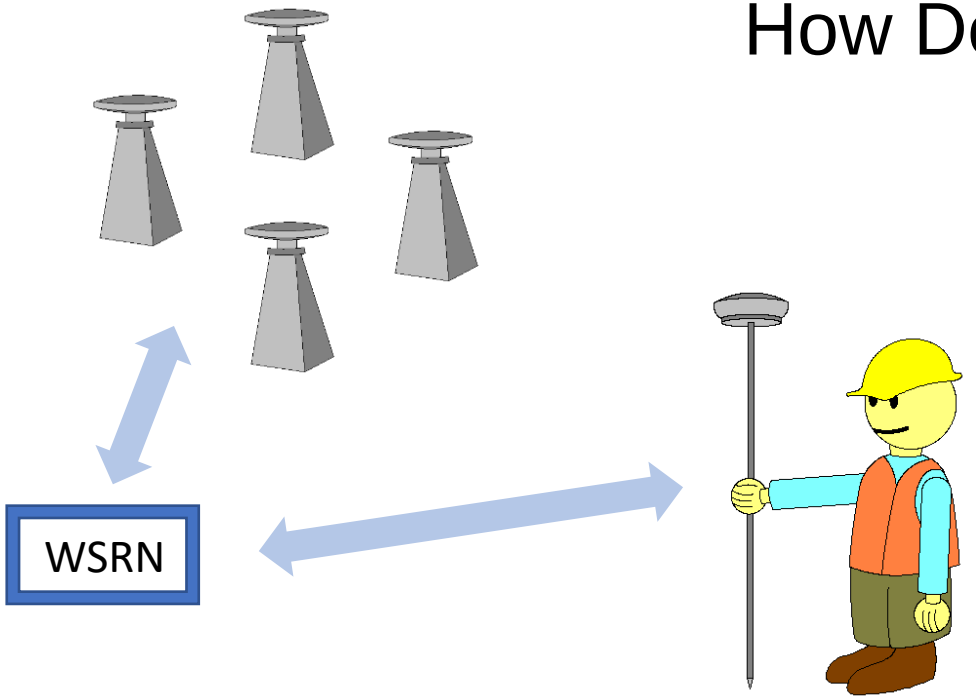
Yet out-of-the-box GPS/GNSS devices are quite imprecise and inconsistent: 3 meters to 20 meters.

But there are methods for *correcting* GPS/GNSS to bring precisions down to *centimeters*, and in real time.

The science behind this is called differential GNSS, and the most common method for centimeter results is real-time kinematics (RTK); commonly delivered by real-time networks (RTN).

The WSRN is the statewide cooperative RTN in WA.

What is the WSRN?
How Does It Work?



There are over 500 RTN worldwide, with many covering entire countries. They serve surveying, mapping, construction, utilities, public safety, navigation, autonomy, science, and more…. RTN have become a new utility for high precision positioning.

The WSRN has been the RTN for WA since 2002.

The WSRN receives GNSS data from 150 ground stations across the state.

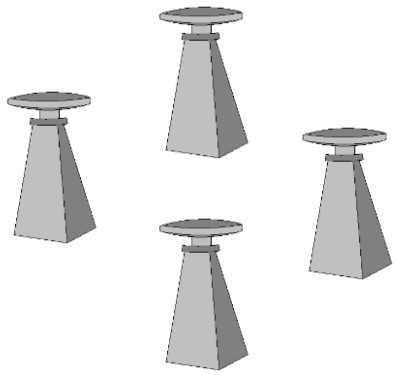
It processes this data to create *corrections* that are customized for the location of your field mapping devices. These corrections are delivered via the internet; mostly via cellular to field users.

Think of the WSRN as a being like a streaming music service. You have a device like your phone (hardware) that has an app (software) that can play that music.

But instead of music, it is GNSS corrections. Your hardware can use this to improve your GNSS position to centimeters, and then the data collected with your field mapping software can be much more precise.

The WSRN does not handle you GIS data, or support your hardware or software, we simply provide the corrections that make your devices and applications more precise.

What is the WSRN?
How Does My Field Mapping System Integrate It?



WSRN

The WSRN delivers corrections to improve the precision of your GPS/GNSS devices, in non-proprietary formats, useable by any GPS/GNSS devices that can use external corrections

WSRN

GPS/GNSS System
(Internal or External)

RTN Client App
(Generic Industry Standard)

Field Mapping App
A map-based user interface to do your field markups, add new items, update existing, etc.

Communications*
Phone cellular data, mobile hotspots, jetpacks, built-in modems etc.

Your Field Mapping Device

NOTE: Updates of your GIS with field data can be live or synchronized when you return to the office; this depends on the GIS software you use and is independent of WSRN services.

Your GIS

* You need live internet connectivity in the field or none of this will work. But there are some options for post-processing of position data if you lose connectivity.

Washington State Reference Network

wsrn.org
Washington State USA

A regional public-private cooperative of continually operating GNSS reference stations constrained the National Spatial Reference System (datums). Data from these are processed into the corrections that improve your field GPS/GNSS device precision