

Technical FAQs

T.1 Will wireless calls be routed to PSAPs based on the longitude and latitude (i.e. X/Y) of the caller?

No. W E9-1-1 calls will initially route based on the cell sector that received the call. Though Phase II technologies may eventually allow for X/Y-based routing, the Federal Communications Commission (FCC) Order does not mandate it and most Phase II technologies do not currently support it. For example, most GPS-based technologies take anywhere from 6 to 30 seconds to ascertain the location of the caller. This is too long to delay the initial delivery of the 9-1-1 call. As technologies improve, X/Y-based routing will be considered for all wireless calls.

T.2 Do I need a separate trunk group for wireless calls?

No, however a PSAP may want to segment their wireless trunks so wireless calls do not block wire-line calls and vice versa. The 9-1-1 Office will fund additional 9-1-1 trunks needed for Wireless E9-1-1 service, subject to pre-approval by the appropriate 9-1-1 Office consultant. Each additional trunk group installed requires its own alternate answer circuit (see below), so the 9-1-1 Office recommends that wireless 9-1-1 calls be grouped with wire-line calls. This also insures that wireless and wire-line calls get answered with the same priority of service. At those primary local PSAPs where wireless E9-1-1 calls are being received today, there have not been any occurrences of 9-1-1 call blocking due to excessive wireless E9-1-1 call volumes.

T.3 What happens to W E9-1-1 calls when I activate my alternate answer?

Alternate answer circuits control only a single 9-1-1 trunk group. Therefore, if you have more than one trunk group, you will need more than one alternate answer circuit to direct all of your 9-1-1 calls to another PSAP. If W E9-1-1 trunks are part of a wire-line trunk group that already has an alternate answer circuit, they will be sent to the alternate PSAP along with the wire-line calls. If not, they will require their own separate alternate answer circuit, leaving open the chance that not all 9-1-1 calls get sent to the alternate site when needed.

T.4 How long does a W E9-1-1 call take to get to my PSAP?

Tests have shown that a typical wireless call takes approximately 5-7 seconds from the time the caller presses SEND until ringing is heard. This is known as call set-up time.

T.5 Do I need additional trunks to my PSAP for W E9-1-1?

Typically no. If you are a PSAP taking W E9-1-1 calls directly, we may recommend additional trunks based upon call volume. If you are a PSAP simply receiving transferred calls, chances are that no additions will be needed.

T.6 What is a cell sector?

The cell sector refers to the coverage area (or coverage footprint) of a cellular antenna. Typically, in highly populated areas each cellular tower contains three antennas, which define three unique coverage areas or sectors. In rural areas, it is not unusual for a WSP to use omni-directional (360 degree coverage) antennas. This is key because wireless calls are currently routed to the appropriate PSAP based on the cell sector.

T.7 What is the size of a cellular antenna coverage area (cell sector)?

Cellular antenna range and therefore cell sector size vary with a number of factors: network design, expected number of users, radio frequency band, cellular air interface, level of service, etc. However, it is typical that cell sectors tend to be smaller and more concentrated in urban areas. Urban area sectors typically range from 0.5 to 3 miles radii, whereas in rural areas the range can extend 25 miles or more.

This is key to understanding Phase I, as the location information provided with Phase I will be only as specific as the cell sector.

T.8 Who determines which W E9-1-1 calls are in my PSAP jurisdiction?

The local PSAP and the CHP do. Your PSAP will meet with representatives of each WSP and the CHP in a confidential meeting to review WSP coverage maps and determine which cell sectors should be routed to your PSAP. If a cell sector covers any part of a freeway or other CHP-patrolled roadway, it should continue to be routed to the CHP.

T.9 How do W E9-1-1 calls get routed to my PSAP directly?

When a wireless call is made, the WSP knows which tower and sector from which the call has originated. From this information, the call is directed to your PSAP through the E9-1-1 network, using a Pseudo-ANI (P-ANI) routing key provided by a wireless database or the local exchange provider.

T.10 How do I count the W E9-1-1 calls to my PSAP?

Since all W-E9-1-1 calls will be terminating on E9-1-1 trunks at the PSAP, the state-funded Management Information Systems (MIS), "CARS" and "FRNIS," will count these calls. If wireless 9-1-1 calls are answered on the same trunks as wire-line calls, there may be a problem differentiating wireless calls from wire-line. Class of service (Residential, Business, Payphone, Wireless, etc.) is differentiated in FRNIS but is not currently differentiated in CARS. PSAPs may be able to use other systems at their disposal to count and distinguish wireless calls.

T.11 How will incorrectly routed calls be fixed for my PSAP?

PSAPs will undoubtedly need to help resolve routing issues. If a PSAP is receiving a high volume of calls from freeways, then an effort should be made to track the cell sector(s) from which these calls are originating. Sector information is provided with each call. Time invested up-front and coordination with the CHP, county (MSAG) coordinator and the WSPs will be the key to optimizing wireless call routing.

T.13 Will PSAPs be assigned an ESN (emergency service number) for wireless calls?

Yes. Each PSAP that directly answers W E9-1-1 calls will be assigned a wireless emergency service number (W-ESN) by a county coordinator. Unlike, wire-line ESNs, which have a unique set of agencies (police, fire, medical) associated with each ESN, W-ESNs will designate only the primary wireless PSAP. Hence, there will be no english language translations (teltales) or selective transfer associated with a wireless E9-1-1 call. This is due to the fact that routing is based on a wide area cell sector and therefore cannot be specified by exact location to the extent necessary for these features to be relied upon by the PSAP.

T.14 Who assigns the Wireless (W-ESN) for my PSAP?

The plan is for the Master Street Address Guide (MSAG) Coordinator (County Coordinator) in each county to be responsible for assigning W-ESNs for each participating primary PSAP. As an alternative, it may be more workable for one county coordinator to serve an entire region. Other primary PSAPs and secondary PSAPs that answer W E9-1-1 calls via transfer will not have assigned W-ESNs.