Evolving 911 networks

An average of 240 million 911 calls are made every year in the US, 80 percent of which are from wireless devices.¹ The growing number of calls placed by wireless devices present a huge challenge for dispatchers and responders: accurate location data.

Behind the scenes are regional programs like the North Central Texas Emergency Communications District (NCT9-1-1 for short), which is responsible for planning, implementing, and maintaining the emergency 911 system for more than 40 Public Safety Answering Points (PSAP) across 13 counties outside the Dallas Fort Worth metro area.

Not only is geocoding a 911 call with an addressable location difficult, but pinpointing where in a large building a call is coming from is also a problem. NCT9-1-1 works with local Addressing Authorities to update address points, however, these local authorities are often underfunded with few resources to capture new roads and structures—leaving the program GIS incomplete. The program’s innovative spirit led them to Maxar for a new age solution.

Maxar Building Footprints delivers precision, GIS-ready polygons for expedited analysis for organizations across all industries.

HOW 911 CALLS WORK

When you call 911, the system routing your call is managed by a regional program like NCT9-1-1. The dispatchers who take the call work at the PSAPs, who in turn notify the closest available emergency responders.

The tricky part is that the emergency responders are responsible for their own navigation systems. So, the more information NCT9-1-1 can provide to the PSAP about the location of the call, the more quickly responders can take action regardless of whether their system is up to date or not.

On Jan 22, 2018, a 911 emergency call came from a high school in the North Texas town of Italy. To pinpoint the location of the call, NCT9-1-1 used building footprints to confirm the call was next to a building wall located in the center of the south building, between both buildings.

Building footprints
Committed to evolving 911 services, NCT9-1-1 sought to improve their mapping products with more comprehensive data. However, they needed an affordable solution that could easily integrate with their system, plus provide the resolution and coverage to scale their region. Ecopia Building Footprints, powered by Maxar delivered on quality and price point.

Using our building footprints, the NCT9-1-1 GIS team is able to distinguish building polygons without an address point (is it an addressable location or a barn?) and classify them to determine which structures are larger than a set threshold, giving the team a good indication of building occupancy and building use such as apartments, office suites, etc.

While aerial imagery remains a primary component to their mapping validation, NCT9-1-1 is able to quickly identify new developments or unmapped structures and use aerial budgets more cost-efficiently.

Additional value
An added benefit of working with the building footprints is change management. The GIS team and Addressing Authorities can now compare new footprint data with archived copies to cross-check address point data for improved accuracy.

This level of collaborative innovation is expediting work that previously took years, and was often lacking valuable context that saves time and lives.

Poor quality images like this one can be enhanced with precise building footprint polygons for a more reliable and accurate dataset.

REAL 911 CALL IN NCTCOG, TX (1/22)

“We wanted footprints for dispatch because in many cases the aerial imagery is outdated. With no address, the building footprints enable the call takers to determine if there is a structure at or near the location of the caller.

And now, the call takers can also notify responders about the location of the caller inside a large building and give them a better idea of where to access the property.”

— Rodger Mann
9-1-1 GIS Manager, NCT9-1-1