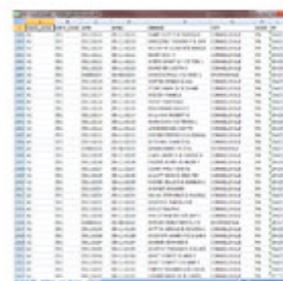# *The Why and How of the Enterprise Addressing System*

Almost everything that a city or county government does or any service they provide is tied to an address.

Whether it is firefighters responding to a 911 call, public works staff responding to work orders, or an individual applying for a street-parking permit, the ability of a city or county to provide services depends on knowing the address of where someone or something is located.

## Addressing Across the Enterprise Has Long Challenged Local Governments

To meet this need for address data, individual departments within local governments often develop their own solutions for entering, maintaining and using address data. This can range from a list of addresses in an Excel spreadsheet to a highly vertical application/database. Few systems have been designed to manage and share addresses **across** departments and applications.

For example, a county's E911 dispatch addressing system and assessor parcel addressing database are typically managed by several people in different departments with greatly differing jurisdictions and priorities. Across departments, the same basic address data might be entered twice using different standards. Consequently, address management systems usually do not sync-up. This duplication is not only a waste of time, it opens the door to errors, inconsistencies, lost revenues and poor customer services.

**Assessor Parcel Address Database** ≠ **E911 Dispatch Address Database**

## Why is Standardized Addressing so Challenging?

Standards for address management do exist, and some local governments do use GIS to try and manage addresses in a more formal way. But this approach requires a county or city government to have trained technical staff to key address data into a GIS. Moreover, the underlying GIS typically aren't address-centric so a GIS operator needs to do significant work to make the GIS system understand how to manage an address. Perhaps even more problematic, the GIS operators aren't the people using the addresses. So you're asking someone who isn't going to use the data to be managing the data.

It's tempting to try and give the people who actually rely on addresses GIS tools to help maintain the data. Unfortunately, most people don't have the time to learn GIS, let alone manage it. And their department probably doesn't have the money to allocate to the yearly licenses and on-going training.

## The Enterprise Addressing System Solution

That's the context and motivation behind the development of the Enterprise Addressing System (EAS), an Open Source web-based master address repository, maintenance, management, query and validation system that Farallon developed in partnership with the City and County of San Francisco.

We developed the EAS with several tenants in mind:

1. Addresses are critical data to all organizations
2. It's a challenge to keep address systems up-to-date
3. It's almost impossible to keep systems synced across departments
4. You can't ask departmental staff to manage addresses using traditional desktop GIS tools because the technology's too challenging and too expensive

## Creating an Addressing System Users Want and Know How to Use

Our first priority was to make the EAS easy-to-use. This required the EAS to be web-based in order to ensure that all address users could easily access, maintain and update addresses from a single authoritative database. This also meant that the rules that go into confirming address data are complete and valid, would need to be transparent to the people using the EAS.

An EAS user doesn't have to know anything about how to access addresses data or how to confirm that addresses are valid. If for example, you're working at a help desk or you have to confirm that an address actually exists before you can take the next step in your workflow, such as issuing a permit, you just log in to this web application and type in an address. It's either there and you find it or if it isn't, the system shows you the nearest valid address. With the EAS, getting access to the authoritative data is simpler and you know it's consistent across every department.

## Make Enterprise Address Maintenance and Management Simple

The importance of ease-of-use applies to address maintenance, just as it does for address querying or address entry. For example, if an address isn't in the system, is it because of the spelling or a transposition of numbers? Or is because the address doesn't exit or needs to be updated in some way.

In any of these cases, EAS offers a straightforward, consistent way of requesting an address update through a validated workflow. So anybody who has account privileges to edit addresses can say, "I'd like to make this change to this address," or, "I'd like to add this address," or, "This address doesn't exist anymore and should be replaced with this new address." The EAS processes this as a change request and the

information is automatically passed on to someone who has authorization to review and approve that request.

If it is approved, great, it goes into the system. If it isn't approved it's sent back to the requester with a message explaining why the address change request wasn't approved and the additional information or changes that need to be made before it can be approved. The workflow is very structured and controlled but highly streamlined and very easy to implement.

The address maintenance workflow represents what is fundamental to the EAS. It turns a difficult job that happens everyday across many departments into a significantly easier task if you're just an address consumer and an order of magnitude easier to manage if you're an address creator or an address approver.

It is important to note two additional things about EAS: It is *Open Standards-based* and *Open Source*.

## Open Standards Addressing Solutions Enables Cross Application Integration

The Enterprise is standards-based. It is compliant with the recently FGDC approved standard for managing address and ensures that every single address point can be resolved back to a street or a parcel. So this gives you a consistent way, standards-based way of managing addresses that can be integrated with other systems that rely on addresses.

The classic example is dispatching systems. You want your fire department and your police department to go to the right place. So it is essential that your dispatching system comes from and integrates with some kind of authoritative address system.

As anyone who's worked with E911 systems knows, it's pretty common to get a call that the system can't automatically tie to an address. When

this happens, dispatchers often insert a new address into their E911 system.

This means there's always a potential for the dispatch addressing database and the police/fire department addressing database to diverge. But using the EAS and standards-based data, the dispatcher can go ahead and add the address to their system for this mission critical task. A web service from the dispatching system could then communicate with the EAS and automatically submit an address change request that goes to through the same structured review process as any other address update request. This keeps these different mission critical systems in sync.

Permitting is another example of cross application integration using standards. You might not want to issue a permit if the building's address doesn't exist in the EAS or if it's address is out of date or needs to be modified because you're splitting a parcel. So the EAS is built to enable you to integrate with a legal document system such as permitting and match this against an address list. As a side note, the EAS-generated address list remembers lineage. So for example if you had a building that had an address of 610 Mission St back in the 1960s, but then that building was torn down and it was replaced by a building called 612 Mission Street, there's still a way to link those two addresses to the same location.

## Take it for a Test Drive

We built the Enterprise Address System (EAS) as an Open Source solution. This means you can access it and test it or fully implement it without any licensing costs.

Once you've done the test drive and you confirmed that it does the essential things that you need it to do, then you can go ahead and begin customizing it as needed.

The Open Source approach also means that you aren't beholden to a single vendor's timeframe for updating it, augmenting it, customizing it.

A common analogy that I like is to imagine that you're thinking of buying a car. With proprietary software you are buying a car with the hood welded shut. You're forced to go to the car manufacturer for maintenance, parts, and improvements.

With the EAS Open Source solution you are buying a car where you can chose where to have your car serviced and maintained. You can even open the hood yourself and make modifications wherever you want. And since it is based on open standards, you aren't restricted to buying one kind of tire from a particular manufacturer. You can buy tires or any add-ons from any vendor you choose. On top of that, you can take the whole thing out for an extended test drive before you buy.

## Low Risk for High Return

Analogies aside, the take away from the Open Source approach is that the EAS is a low risk, high return way of getting an authoritative solution implemented in your organization to manage a headache common to almost every city or county.

Want to learn more?  Give us a call 415.227.1140 or drop us an email info@fargeo.com.

Learn more at Fargeo.com/enterprise-addressing/.

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## About Farallon Geographics

Since our inception in 1997, we've worked with inspiring clients on innovative projects to protect people and resources, manage assets, and improve government. Our mission is always the same: intelligently apply geospatial technologies to solve our clients' business challenges.