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Implementing new street naming, numbering and signage solutions with spatial analytics

October 2018
2018 European Transportation GIS Summit

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Who we are…

Working across cities, infrastructure and transport, Steer is a consultancy that combines commercial, economic, technical and planning expertise to find powerful answers to our clients' complex questions.

- Global transportation consultancy;
- Operate in Rail, Aviation, Bus, Active travel, Major Developments and Digital Solutions;
- GIS team sits in our Design for Movement Team

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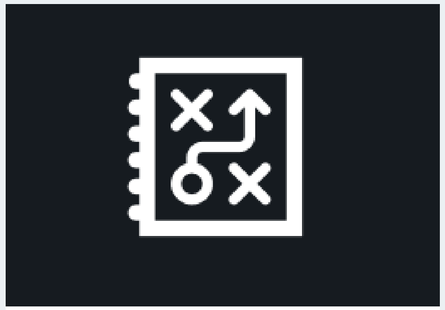
Spatial analytics at Steer

Robust evidence base

Central to our work is our management of geo-spatial data. We have over 250 GIS layers in our central GIS warehouse that we maintain, update and are experts in using.



Advanced spatial analytics

We use geo-spatial analytical techniques to help answer complex questions. Combining multiple data sources in a spatial context often provides new insights.

Award winning cartography

Our mapping outputs have been recognised throughout the transport and cartography industry providing award winning cartography.

Digital Intelligence

We have expertise in working with new data sources and are developing with clients intuitive data collection methods and data visualisation products.

Core to our consultancy offer

Our projects teams appreciate the value of spatial analysis and our GIS consultants are embedded within our project teams to assist in the development of projects

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The team

Oliver Russell
GIS Manager

Clare Seldon
Principal Cartographer

Ed Bryan
Senior GIS Consultant

Helen McKenzie
Senior GIS Consultant

Tim Goss
Assistant Consultant

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Our offices

We have 21 offices across four continents. Since 1978 we have worked in over 150 countries.

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Panama Nomenclature

Panama Nomenclature
Implementing a new street naming and numbering strategy

Commissioned through the mayor of Panama and the city authority, brief was to:

- Reviewing existing situation;
- Review international best practice and proposed methods;
- Recommend solutions for Panama;
- Implement and test in neighbourhoods;
- Design and implement new street signage.

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Panama Nomenclature
Implementing a new street naming and numbering strategy

More than just a canal!

- Comprised two cities – Panama and San Miguelito;
- Approximate population 2.5 million;
- Economic centre of Central America;

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Constrained by natural features

Pacific ocean to South;
Canal to West
Mountains and Rain Forest to North and East

A growing city

Seeing rapid growth due to economic prosperity

Diverse neighbourhoods

Historic core, downtown, official and unofficial residential areas

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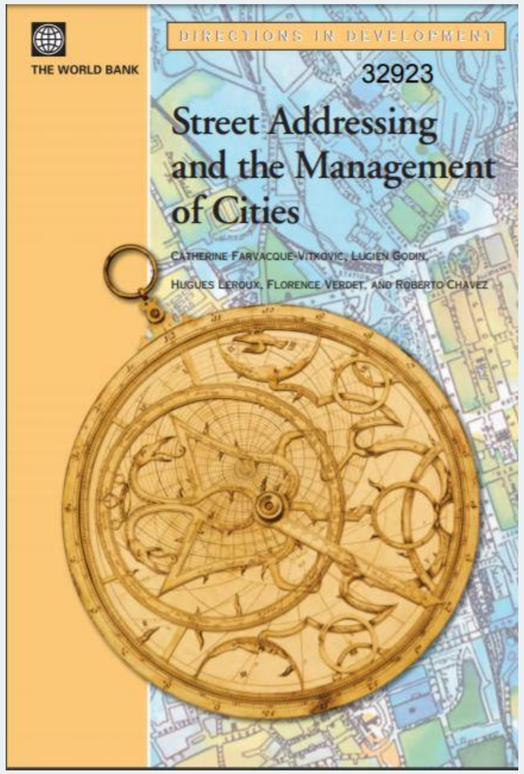
Panama Nomenclature – review of existing situation

Implementing a new street naming and numbering strategy



International Best Practice

World bank: Street Addressing and the Management of Cities

Universal postal union: Addressing the world – An address for everyone

Geoplace – BS7666

Geosolutions provided consultancy support from Panama.

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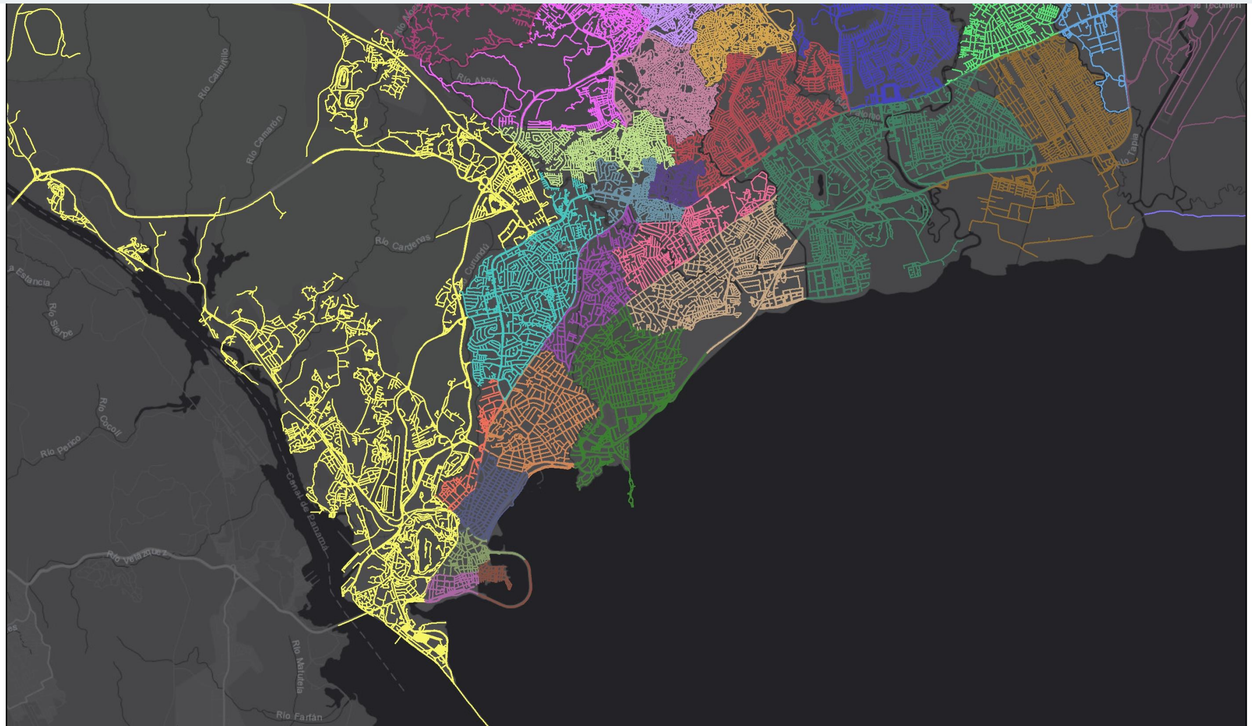
Panama Nomenclature
Implementing a new street naming and numbering strategy



Initial data set to review contained approximately:

35 districts; 26 in Panama City and 9 in San Miguelito

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Panama Nomenclature
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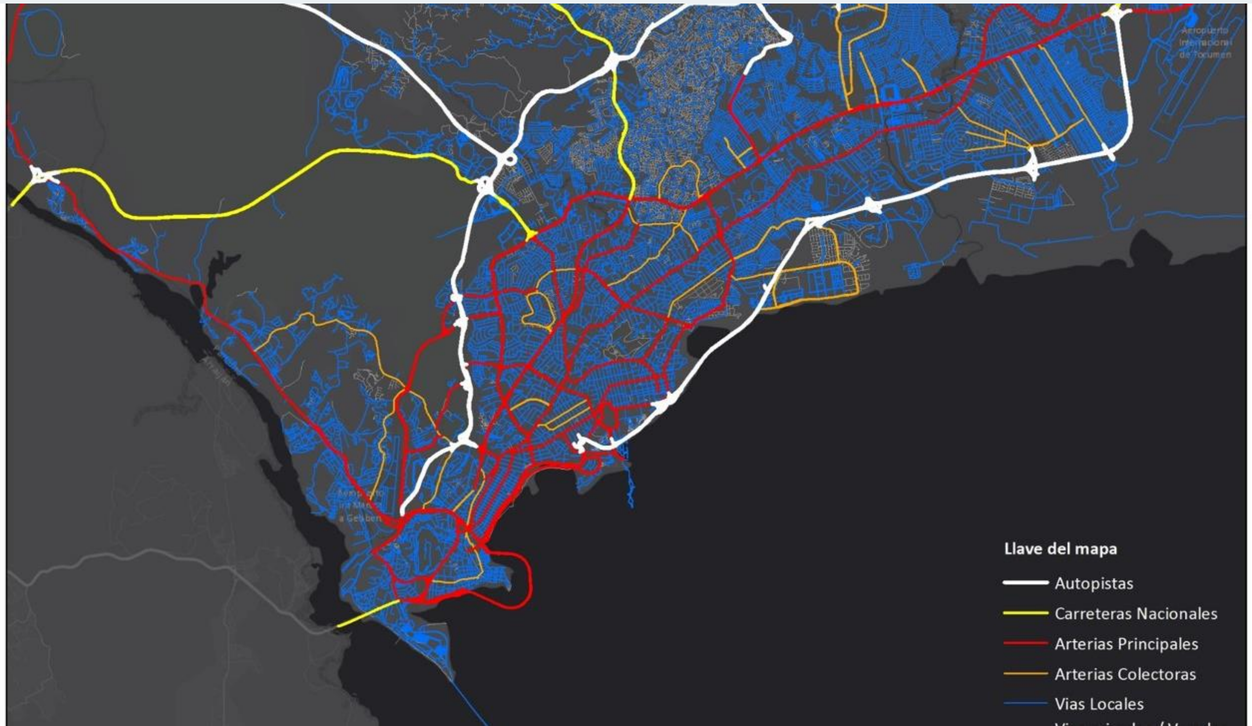
Initial data set to review contained approximately:

- 35 districts; 26 in Panama City and 9 in San Miguelito
- 65,000 street segments – 45,000 of which had no naming convention



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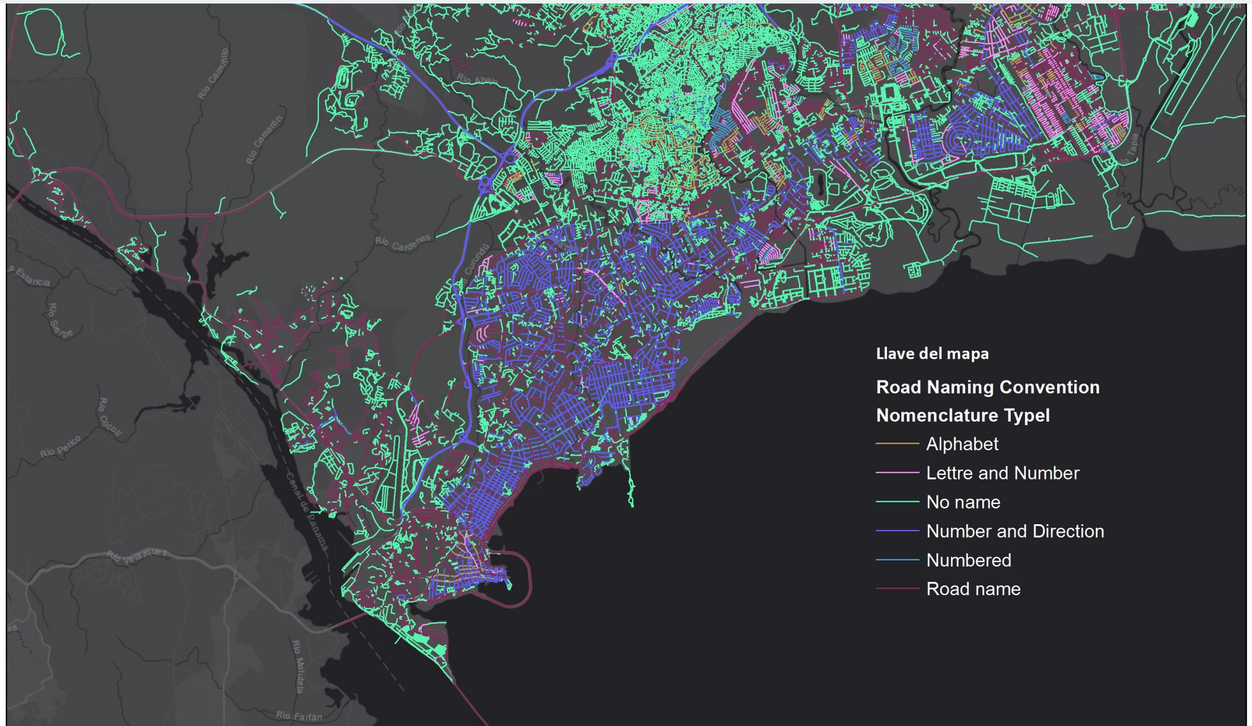

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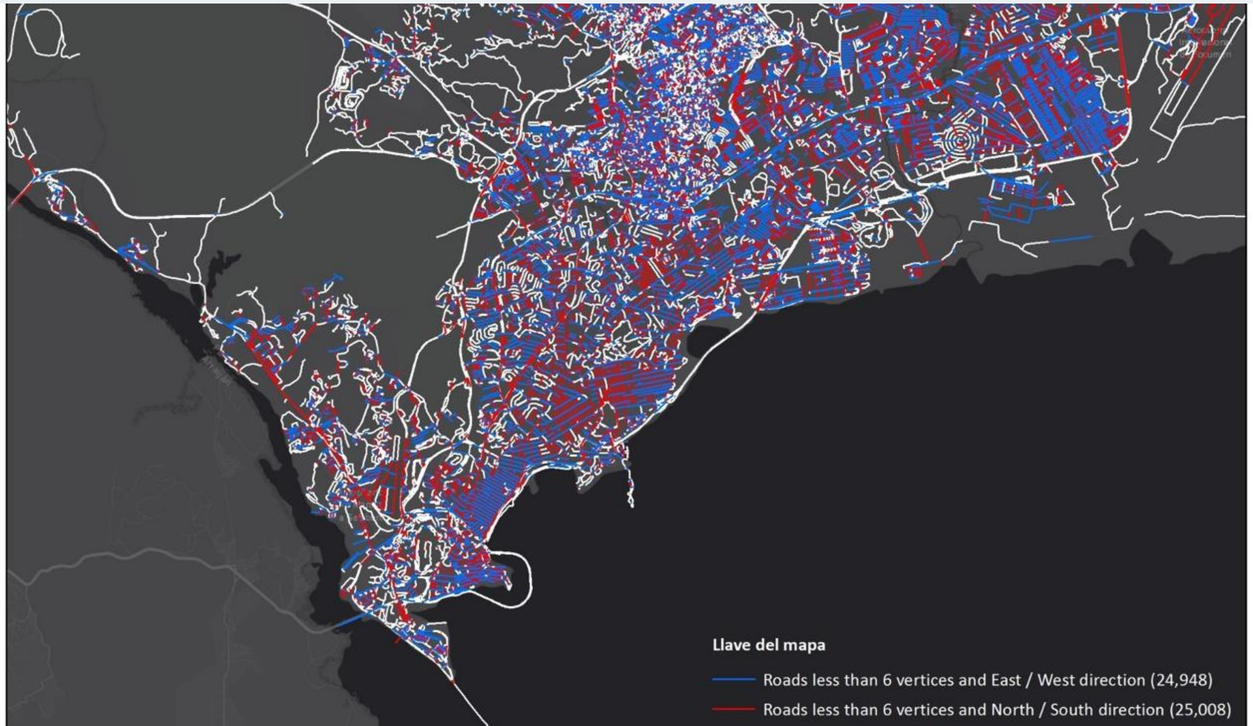

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Panama Nomenclature – applying a method

Overall approach

Step 1

Has the street been defined?

Yes

Apply city administrative geography and codification system to road, to create official road ID

No

Use GIS to define the start and end of the street and combine street sections

Apply city administrative geography and coding system to road to create official road ID

Step 2

Does the road already have a name?

(When to use the *official* road ID, when to use the *common* road name and how to apply road names where none exists)

Yes

An *official* ID will be generated and used for official purposes as the road's unique identifier.

Existing road names will be captured and used as the public name of the street - referred to as a *common* name.

No

Option 1: consult with the local population to capture the names used by local people. This will help with public awareness of project.

Option 2: If the consultation exercise does not identify a suitable name, the city can generate a *common* name based on famous people, places, etc...

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On review we recommended that the main priority of our project was to:

- Define a street extent; automate as much as possible!
- Quality control and reassign segments on visual inspection.

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DISTRICT	CORREGIMIENTO	DISTRICT CODE	CORREGIMIENTO CODE	ROAD ID PREFIX
PANAMA	24 DE DICIEMBRE	PA	DD	PADD
PANAMA	ALCALDE DIAZ	PA	AD	PAAD
PANAMA	ANCON	PA	AN	PAAN
PANAMA	BELLA VISTA	PA	BV	PABV
PANAMA	BETANIA	PA	BE	PABE
PANAMA	CAIMITILLO	PA	CA	PACA
PANAMA	CHILIBRE	PA	CH	PACH
PANAMA	CURUNDU	PA	CU	PACU
PANAMA	DON BOSCO	PA	DB	PADB
PANAMA	EL CHORRILLO	PA	CH	PACH
PANAMA	ERNESTO CORDOBA CAMPOS	PA	EC	PAEC
PANAMA	JUAN DIAZ	PA	JD	PAJD
PANAMA	LA EXPOSICION O CALIDONIA	PA	LE	PALE
PANAMA	LAS CUMBRES	PA	LC	PALC
PANAMA	LAS GARZAS	PA	LG	PALG

On review we recommended that the main priority of our project was to:

- Define a street extent;
- Apply a codification system to the street to create unique IDs;

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On review we recommended that the main priority of our project was to:

- Define a street extent;
- Apply a codification system to the street to create unique IDs;
- Assign buildings to the street;

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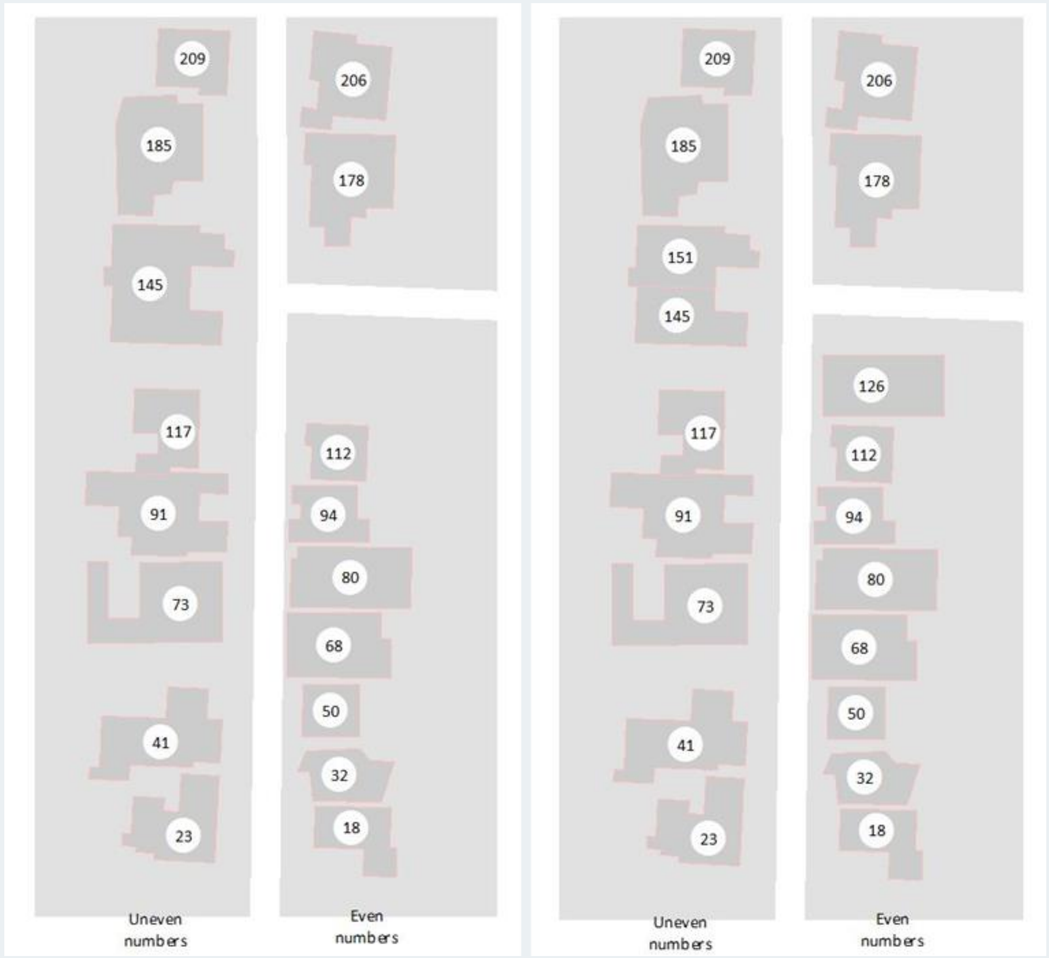

On review we recommended that the main priority of our project was to:

- Define a street extent;
- Apply a codification system to the street to create unique IDs;
- Assign buildings to the street;
- Implement a metric building numbering system;

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What would an address look like?

Sample address:

Building Number: 229

Official ID: *“PAJD 129”*

Common Name: N/A or a new road name

Corregimientos: Juan Diaz

District: Panama

Panama Nomenclature – next steps and challenges

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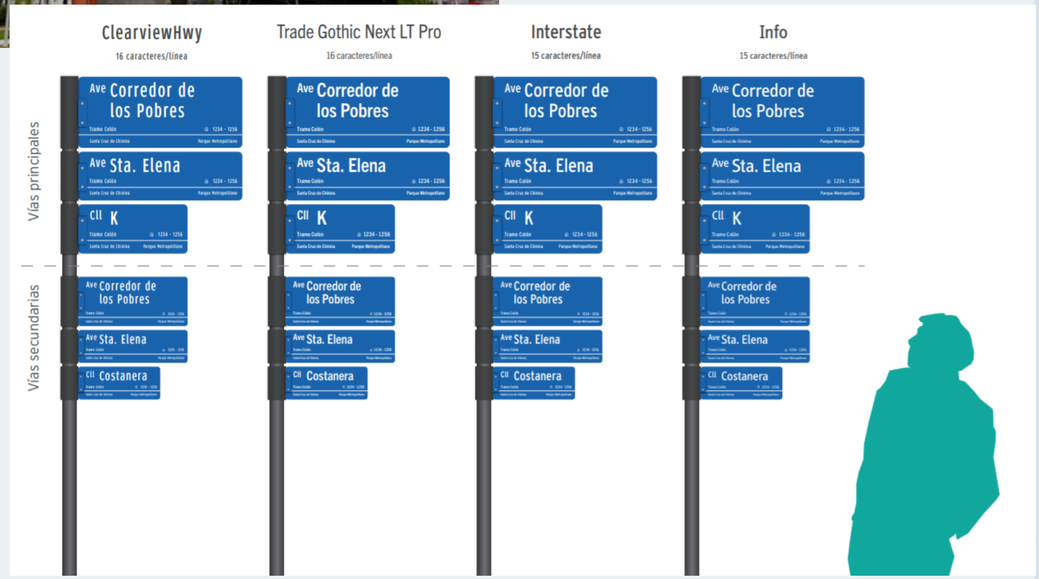

Next steps:

Apply method and approach to all areas in Panama: ensure the method can be applied at scale.

Communication plan: how will people find out their new address?

Development of street signs: How many and where to put them?

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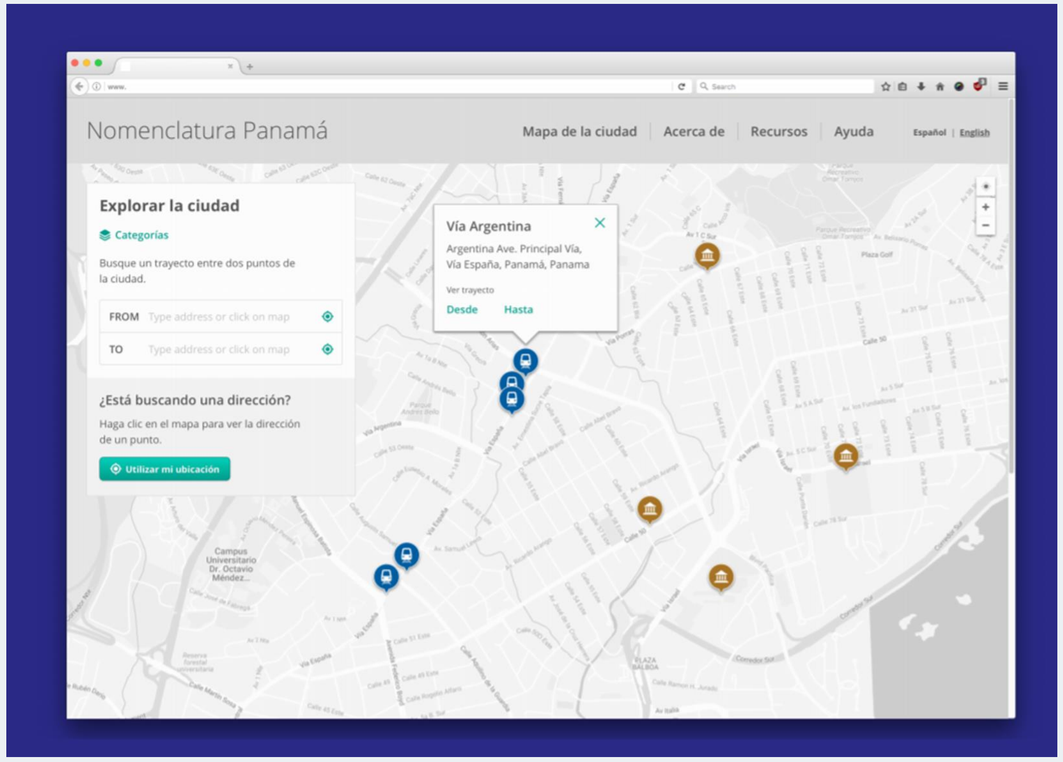

Challenges and how we overcame them

- Scale;
  - Applying the method to a city as a whole;
  - Automating the solution;
  - Quality control and sense checking;
  - Some really long roads!

  Solution – ArcGIS model builder and Network analyst allowed us to automate much of our analysis.

- Engagement;
  - How can we get the public and business to buy into the changes?

  Solution – online maps and website to help communicate the changes.

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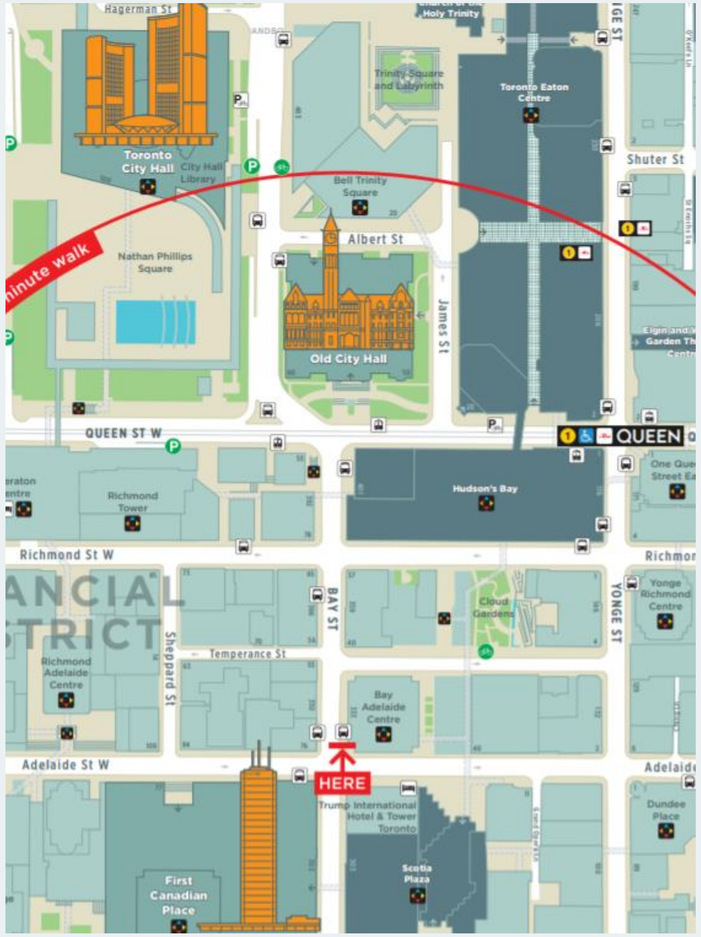

The future:

- Better wayfinding for city residents and visitors;
- A core dataset for which to build other data sets on;
- Improvements in congestion through better route planning; and
- How can other technology enhance an addressing solution?

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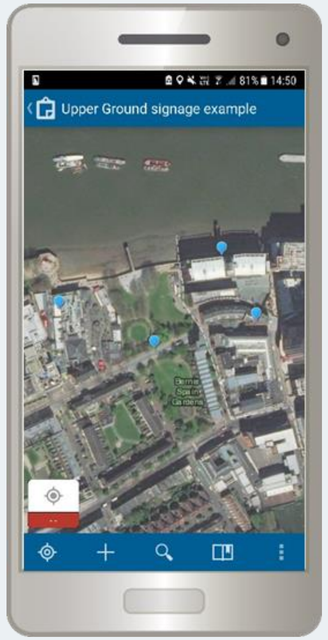
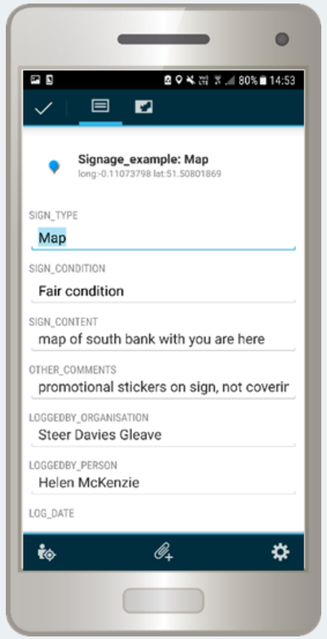
Success story – ArcGIS collector app

ArcGIS Collector App
Signage assets





To help enhance user experience on site, Stansted Airport commissioned Steer to help them gain an in-depth understanding of the quantity, type, location and condition of vehicular signage across the campus.

Used the ArcGIS Collector App to undertake a signage audit of vehicular signs through airport campus.

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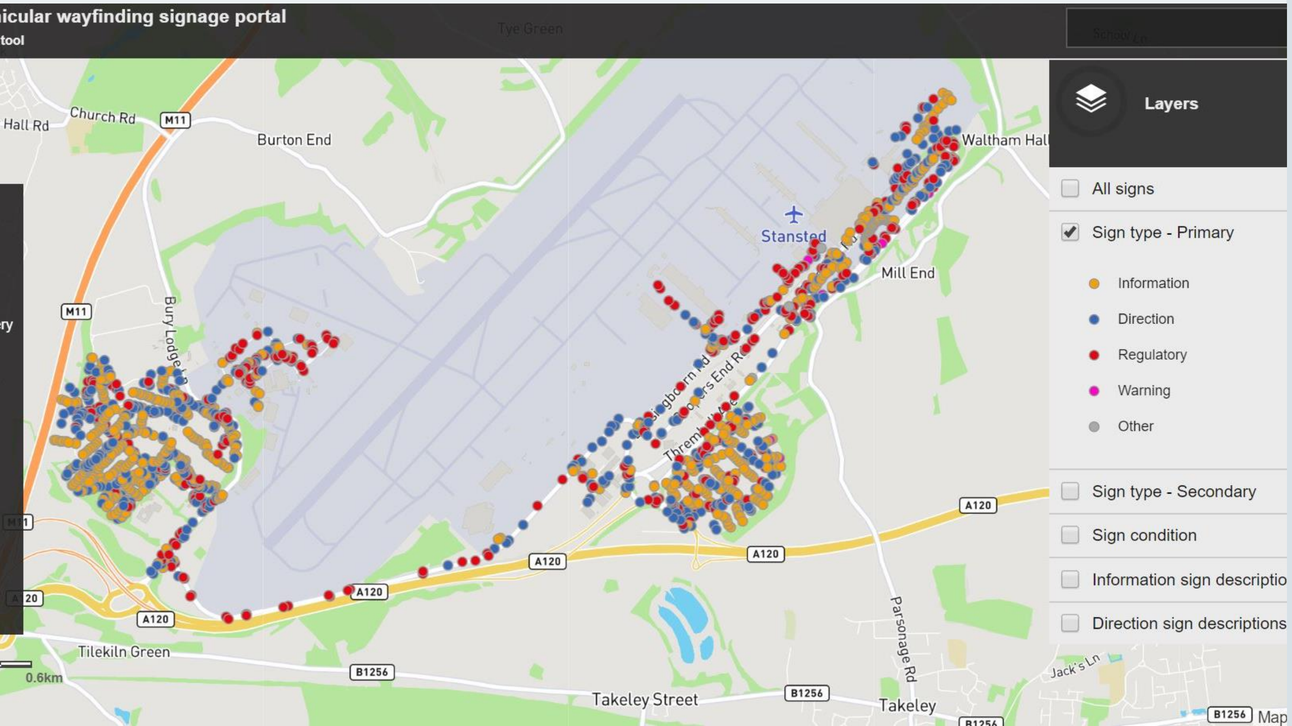
Signage strategy for Leading UK airport
Using ArcGIS online to manage assets



ArcGIS collector app:

- Data collection was quick and easy, captured 1,500 plus signs in around 10 days:
- Displayed content in an online web map in ArcGIS online enabling using to quick and easily interrogate;
- Helping airport understand how they can improve signage to ease customer experience as they travel round the site.

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Thank you

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