

# OpenStreetMap

Alvaro Anguix <aanguix@gvsig.com>

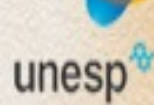
Jorge Sanz <jsanz@gvsig.com>

César Medina <ciesaremedina@gmail.com>



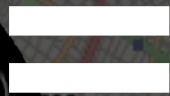
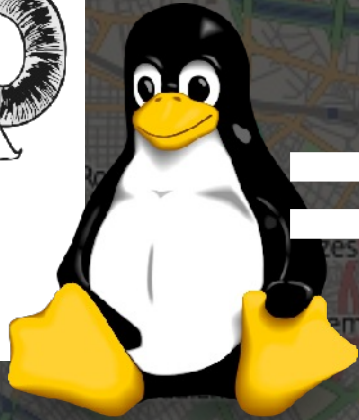
## 1<sup>as</sup> Jornadas Brasileiras gvSIG

22 a 24/09 de 2010 - Curitiba - Paraná

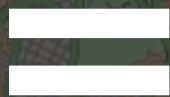
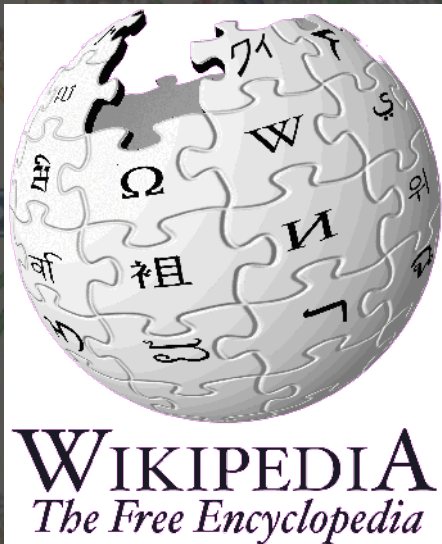
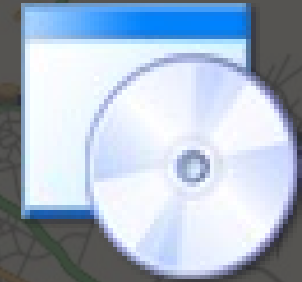




¿Qué es OpenStreetMap?



```
static int
read_fw (struct
usb_dev_handle *dev, char
*filename, long off)
{
    int fd, len, req,
llen, res, ret = -1;
    unsigned char data[4],
rdata[1024], *ptr;
```



```
{{taxobox
|name = Pleurodema borellii
|status = LC
|status_system = IUCN3.1
|regnum = [[Animalia]]
|phylum = [[Chordata]]
|classis = [[Amphibia]]
}}
```



**Pleurodema borellii**  
from wikipedia: the free encyclopedia

*Pleurodema borellii* is a species of frog in the Leptodactylidae family. It is found in Argentina and possibly Bolivia. Its natural habitats are subtropical or tropical dry forests, subtropical or tropical dry forests, subtropical or tropical moist montanes, subtropical or tropical high altitude grassland, freshwater marshes, intermittent freshwater marshes, rural gardens, urban areas, heavily degraded former forest, and ponds.

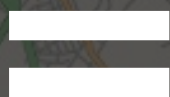
**References**

- Cortez, C., Reichle, S., De la Hoya, L., Koller, J., & Lav, J. E. 2004. Pleurodema borellii. IUCN Red List of Threatened Species. Downloaded on 22 July 2007.

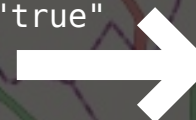
This Leptodactylidae article is a stub. You can help Wikipedia by expanding it.

Categories: IUCN Red List least concern species | Pleurodema | Leptodactylidae stubs

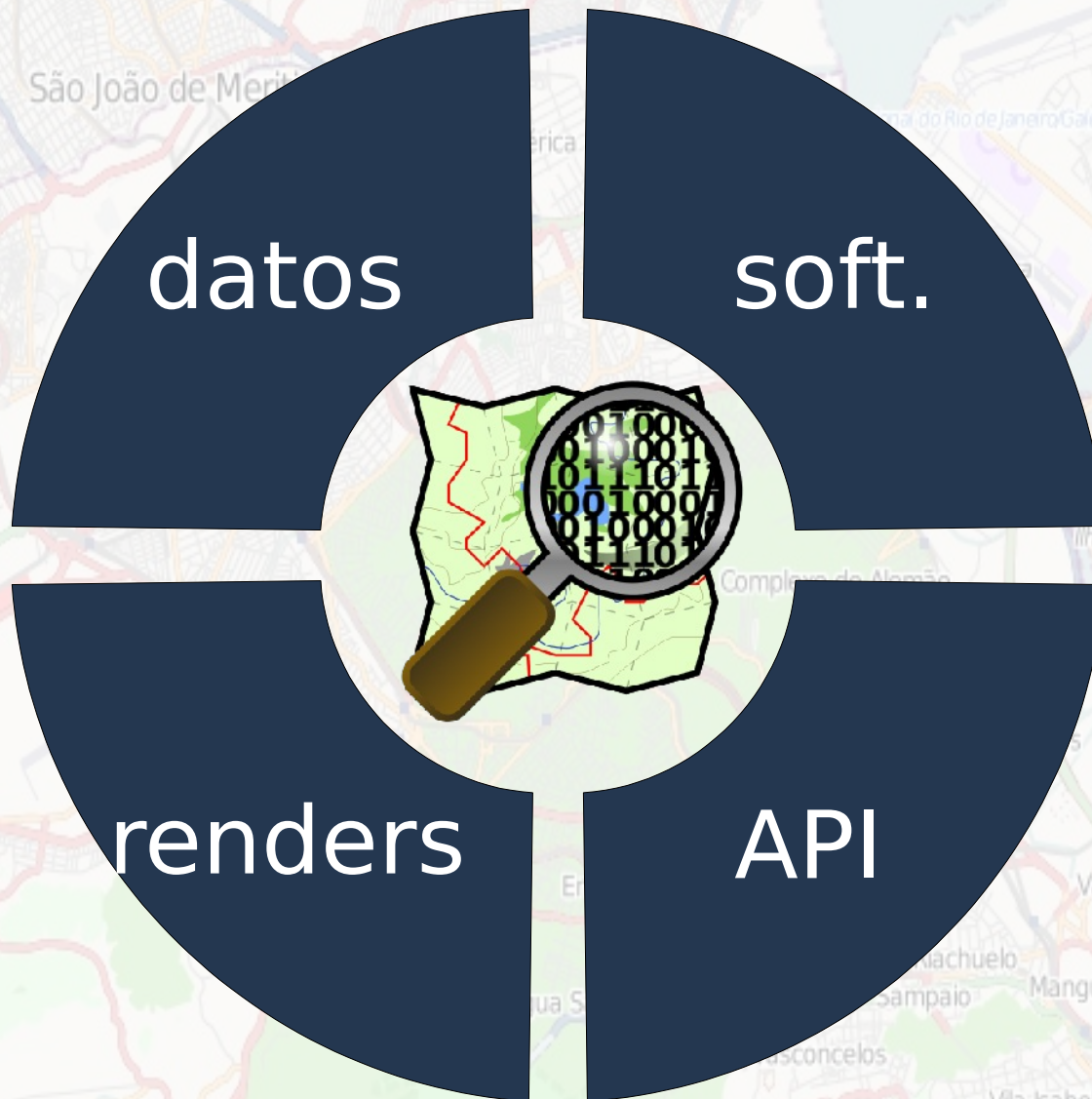
| Pleurodema borellii  |
|--|
| <span></span>  |
| Conservation status  |
| <div><span><span></span></span>Least Concern <span> </span><span></span></div> |
| Scientific classification  |
| Kingdom: Animalia  |
| Phylum: Chordata   |
| Class: Amphibia  |
| Order: Anura   |
| Family: Leptodactylidae  |
| Genus: <i>Pleurodema</i>   |
| Species: <i><b>P. borellii</b></i>   |
| <b>Binomial name</b>   |
| <i><b>Pleurodema borellii</b></i><br>(Gerrits, 1954)                           |



```
<node id="206358572"
lat="37.3905641" lon="-5.9882308"
timestamp="2009-02-20T17:16:48+00:00"/>
<way id="22744006" visible="true"
timestamp="2008-10-31T13:50:26+00:00">
    <nd ref="206358593"/>
    <nd ref="206358594"/>
    <nd ref="206358595"/>
    <nd ref="206358596"/>
    <tag k="highway"
v="residential"/>
```



# OpenStreetMap es...



# OpenStreetMap es...

- 5 años
- 534.650.399 puntos
- 39.701.133 vías
- 208.076 usuarios
- 400+ profesionales

(Estadísticas a fecha 23/01/2010)

# OpenStreetMap es una comunidad organizada



# OpenStreetMap es colaboración OpenStreetMap son resultados

**ito!** OSM 2008: A Year of Edits  
by ItoWorld **PLUS**  
2 years ago



<http://vimeo.com/2598878>

Santo André

*mmm ¿pero esto  
no lo tenemos ya?*

**Google Maps** Start address e.g., "SFO" End address e.g., "94526"  
google, mountain view Stanford, CA [Get Directions](#)

[Search the map](#) [Find businesses](#) [Get directions](#)

**Search Results** My Maps

Directions: [Drive There](#) - [Take Public Transit](#)

Options  Alternate routes

**From:** Google Headquarters  
1600 Amphitheatre Pkwy,  
Mountain View, CA 94043

**Public transit** \$3.50 (vs. \$3.03 driving)  
Showing Trip 1 Travel time: about 54 mins

**Walk** to Charleston & Huff (about 4 mins)

**Board** the VTA 40 - La Avenida - SN Antonio Shop CTR (Direction: 40 SB San Antonio Shopping Center)  
9:38am Depart Charleston & Huff  
⋮ 11 mins  
9:49am Arrive Showers & Latham

**Transfer** to the 22 - Eastridge - Palo Alto/Menlo Park (Direction: 22 WB Palo Alto Transit Center; 9 mins to make transfer)  
9:58am Depart El Camino & Showers  
⋮ 16 mins  
10:14am Arrive El Camino & Embarcadero

**Walk** to Stanford, CA (about 14 mins)

**To:** Stanford, CA





¡No nos dejemos  
engañar...esto va  
de propiedad  
intelectual!

# Google vs. OSM

Google MapMaker: **“vuestro trabajo es nuestro”**



## MapMaker

- desequilibrio de derechos y obligaciones
- sólo para uso personal
- no se permiten descargas masivas
- ....

Usar GM para hacer *mashups*...

- atribución estricta

[http://www.google.com/mapmaker/mapfiles/s/terms\\_mapmaker.html](http://www.google.com/mapmaker/mapfiles/s/terms_mapmaker.html)

<http://code.google.com/apis/maps/terms.html>

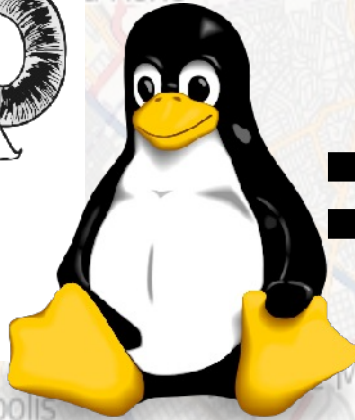
• sólo para aplicaciones públicas

# OSM es “libre de libertad”

*muchos de los mapas  
que podrían parecer  
libres realmente  
**tienen restricciones  
legales o técnicas en  
su uso***



Santo André



=

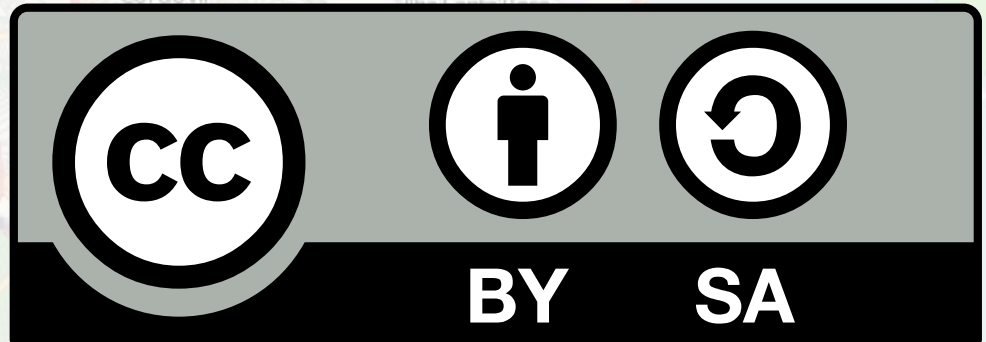


***Free as in Freedom***



**WIKIPEDIA**  
*The Free Encyclopedia*

=



=

**ODbL**

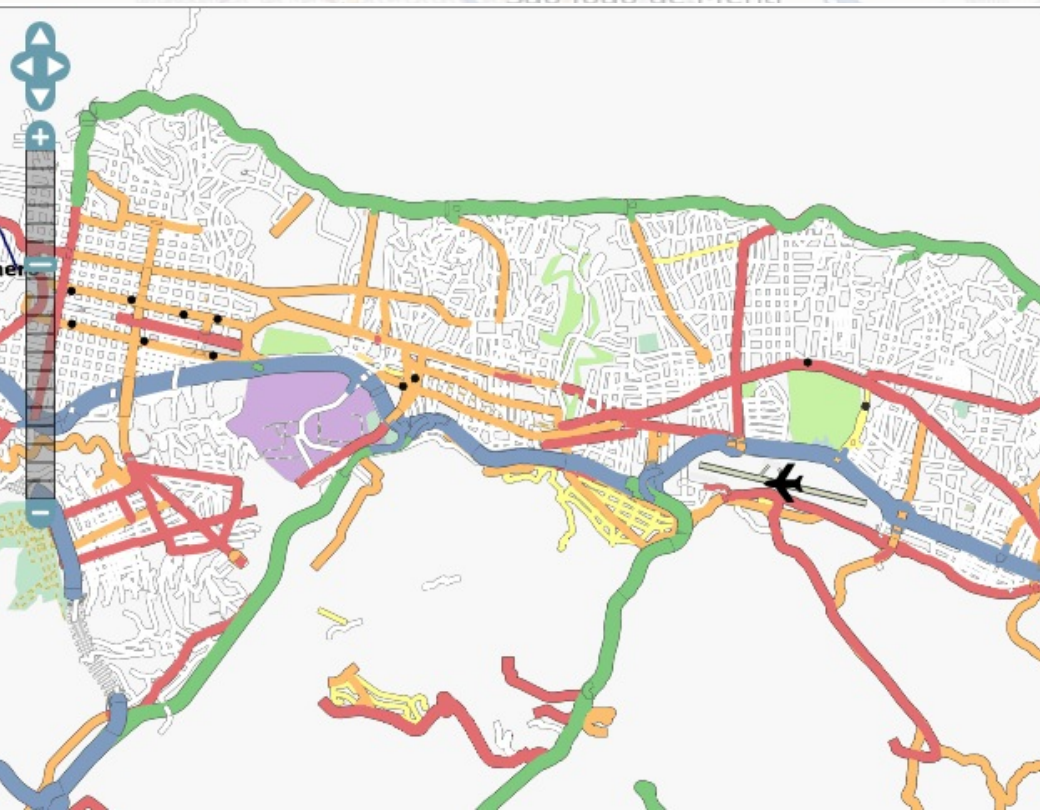
# Geofabrik Map Compare

<http://tools.geofabrik.de/mc/>

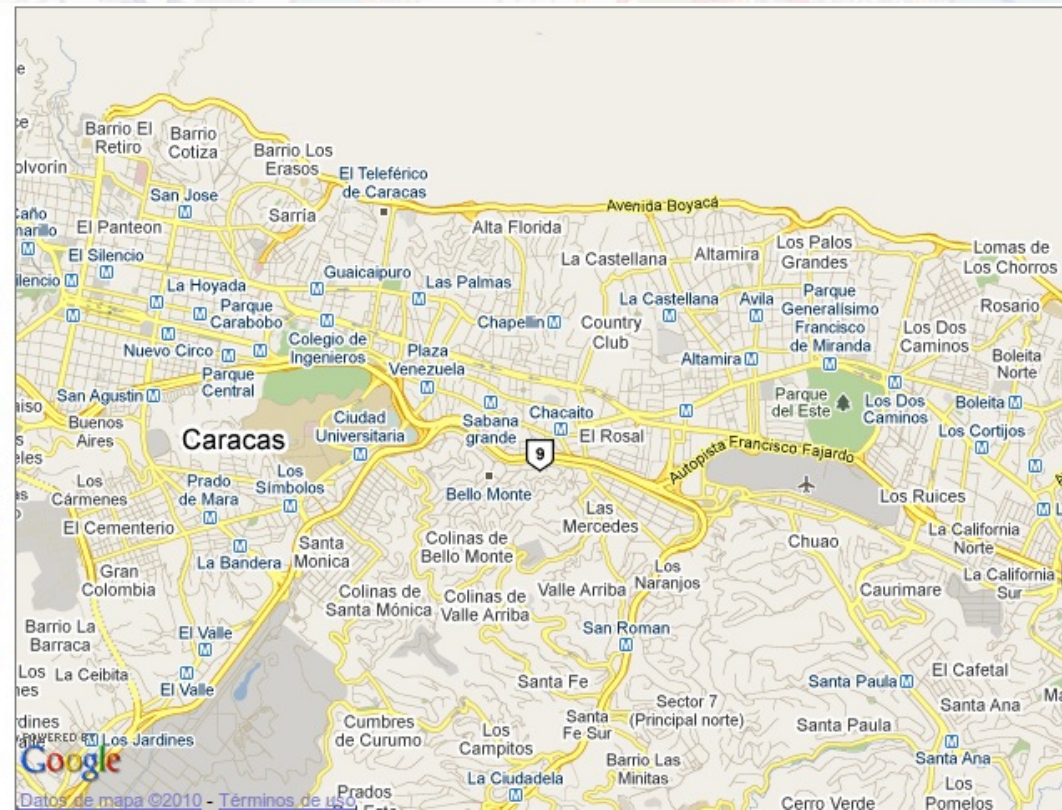


# comparemos

# GOOG vs. OSM

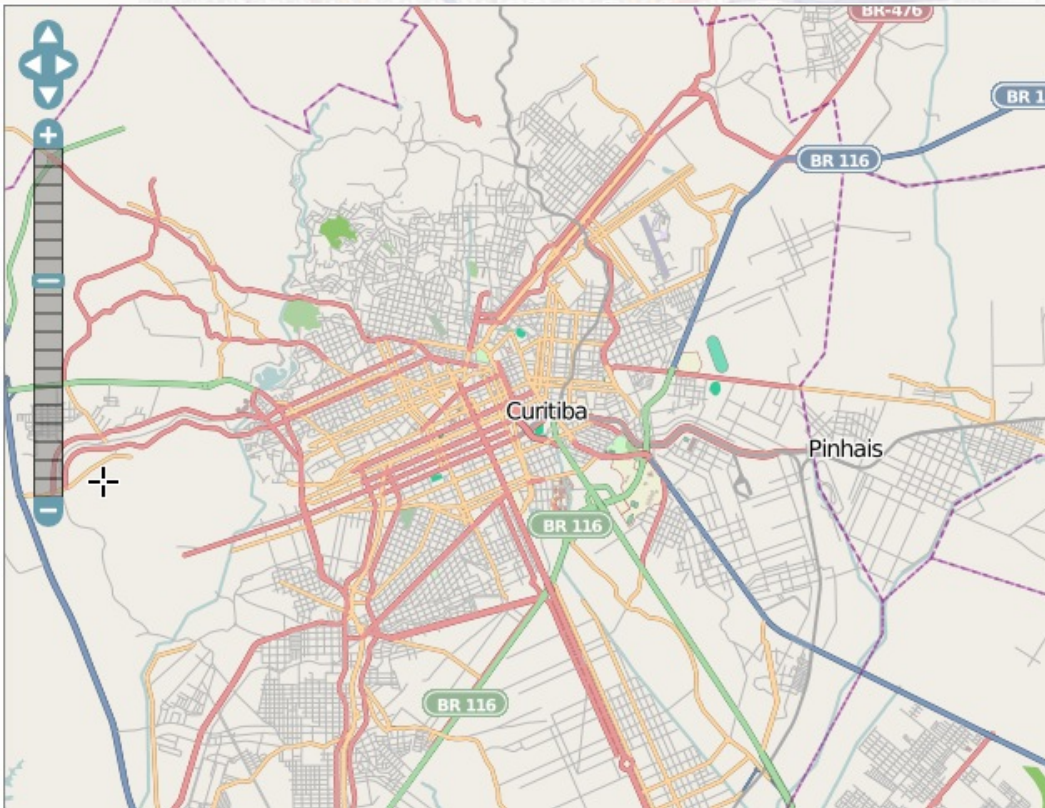


OSM

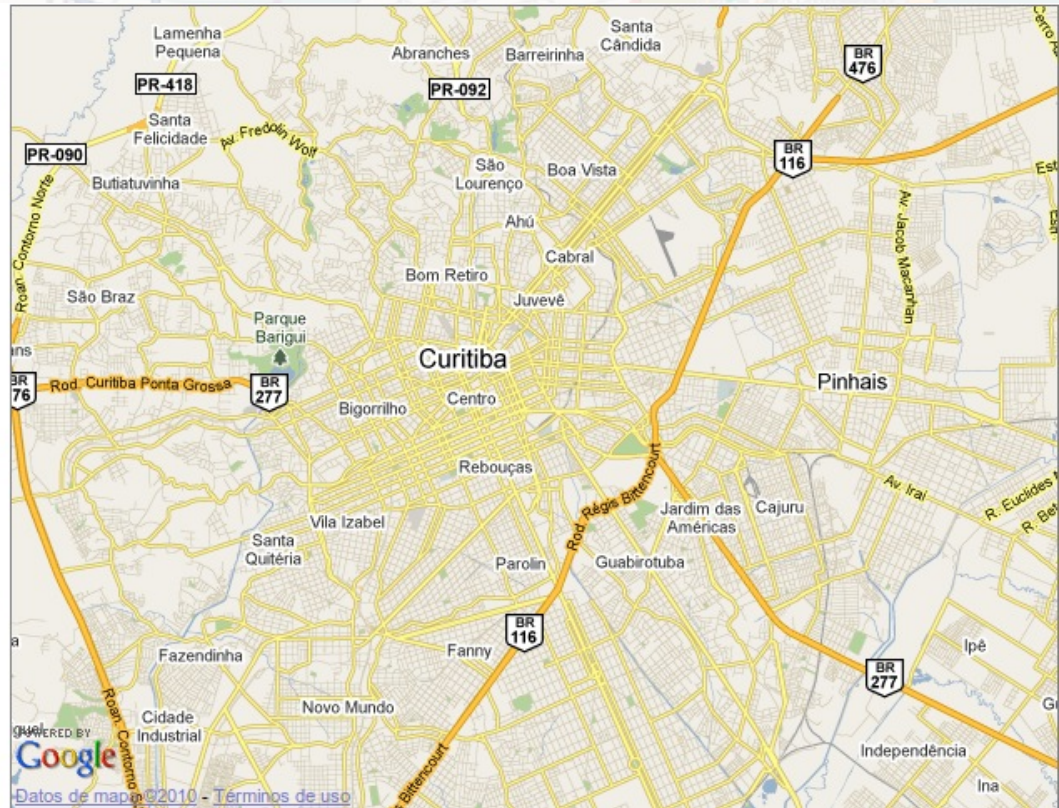


Google: gana

# GOOG vs. OSM



OSM

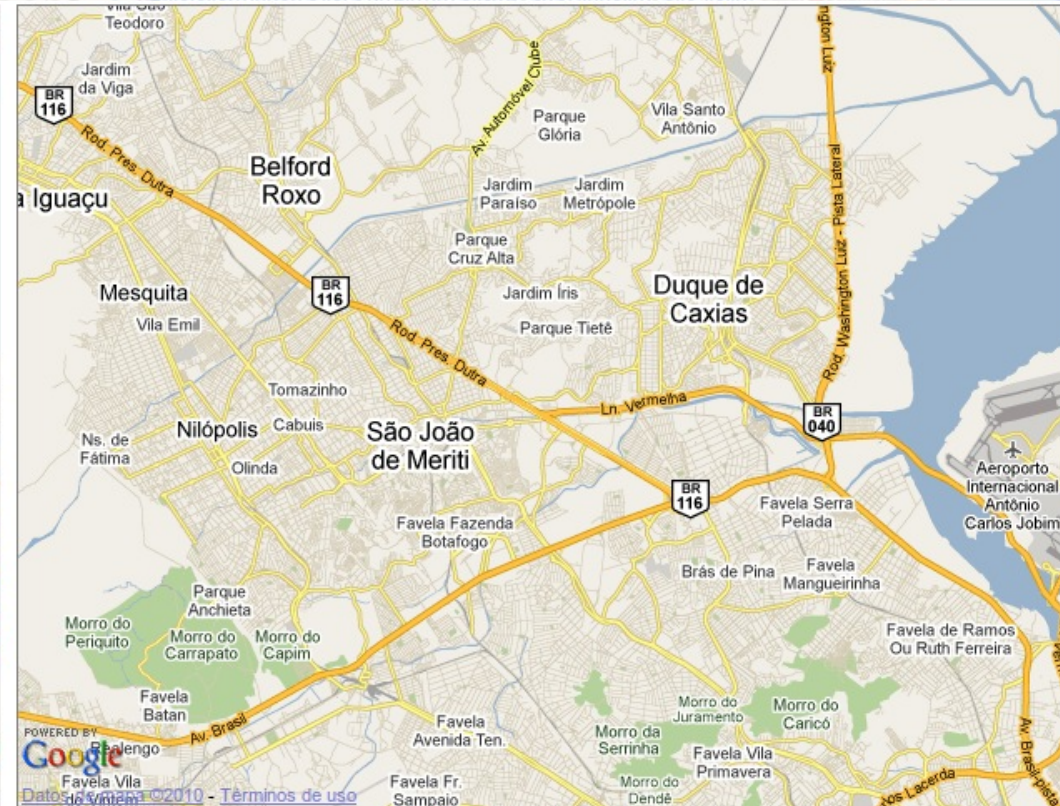


Google: gana por poco

# GOOG vs. OSM



OSM

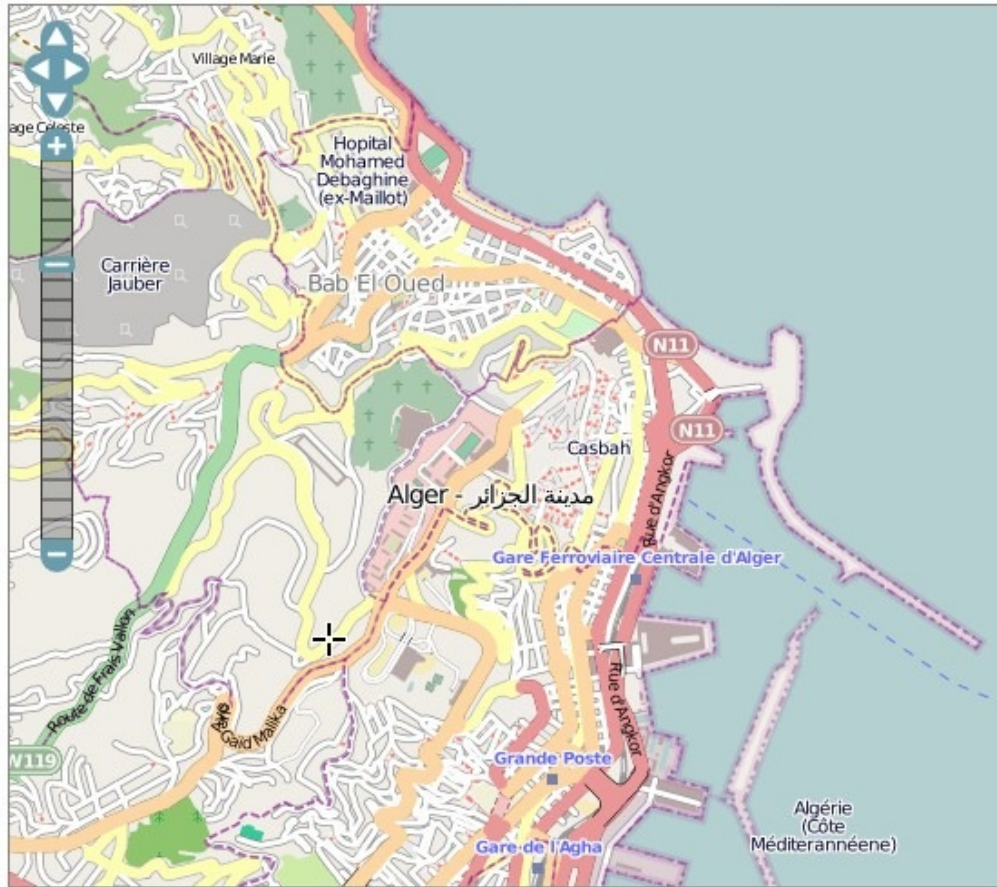


¿Empate?

Google



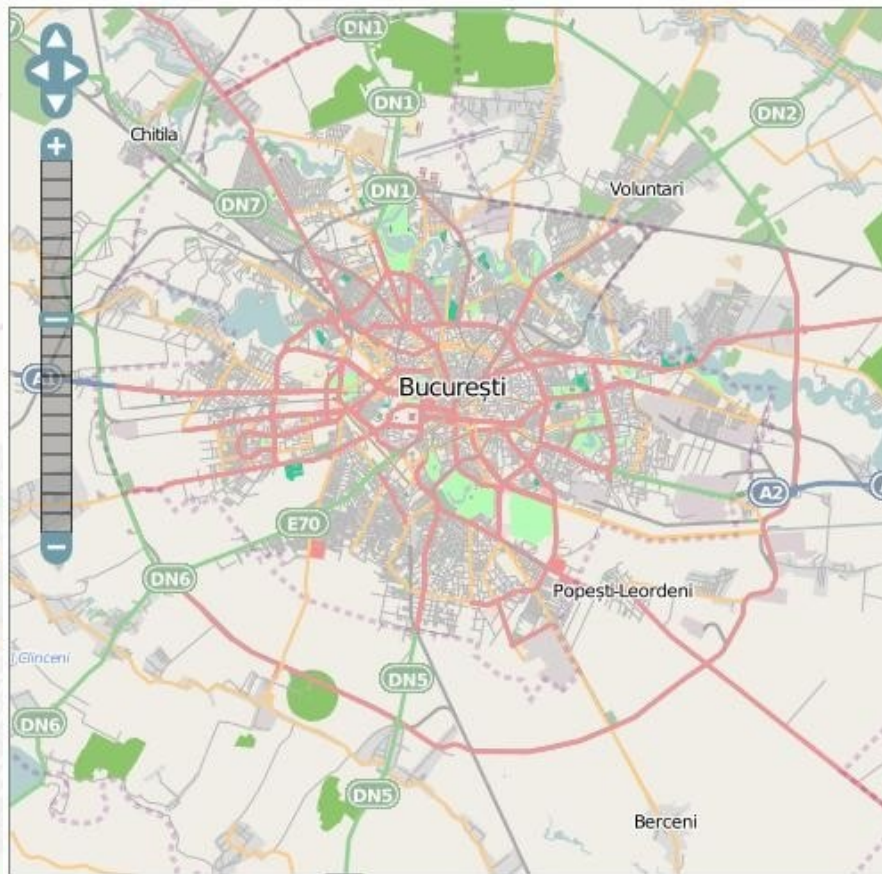
# GOOG vs. OSM



OSM: gana

Google

# GOOG vs. OSM



OSM: gana



Google

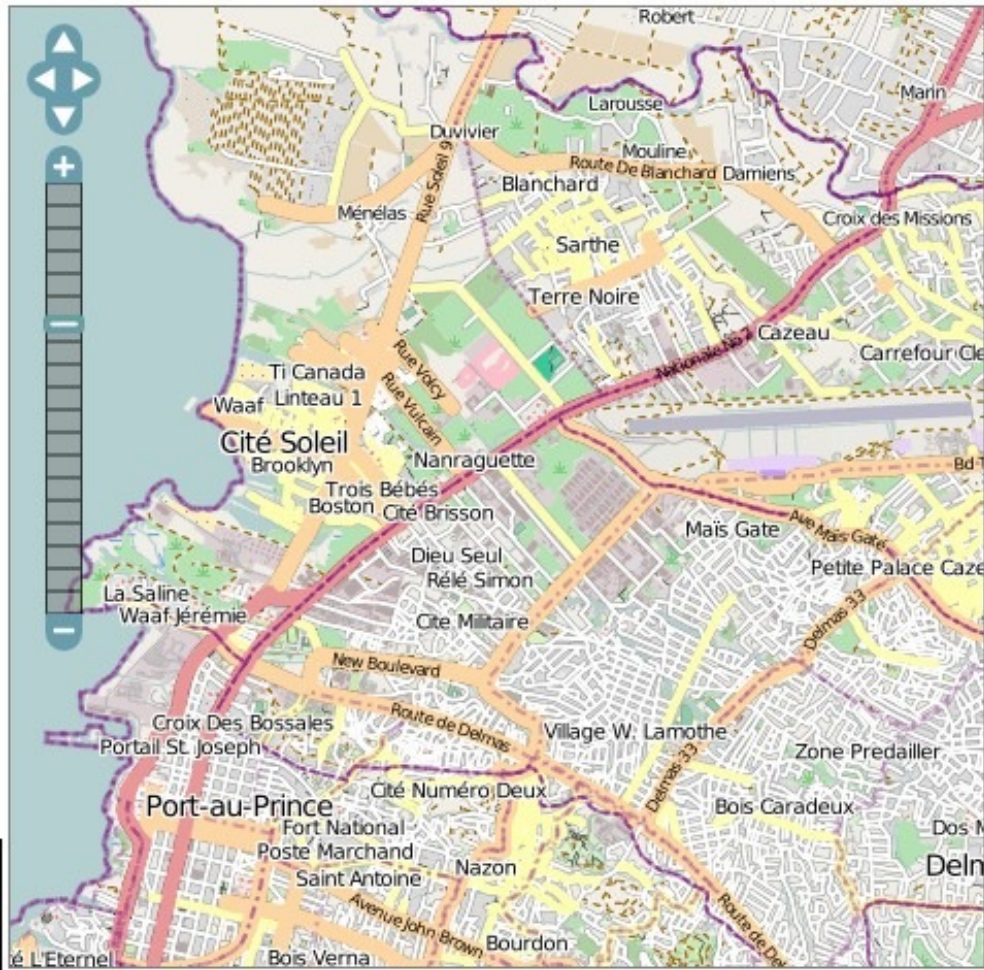
# GOOG vs. OSM



OSM: gana.... ¿dónde?

Google

# OSM en Haïti



# OSM y el terremoto de Haití

**ito!** OpenStreetMap - Project Haiti  
by ItoWorld PLUS  
5 months ago

LIKE  
SHARE  
EMBED  
HD IS OFF

00:00  
January 2010  
OpenStreetMap

<http://vimeo.com/9182869>

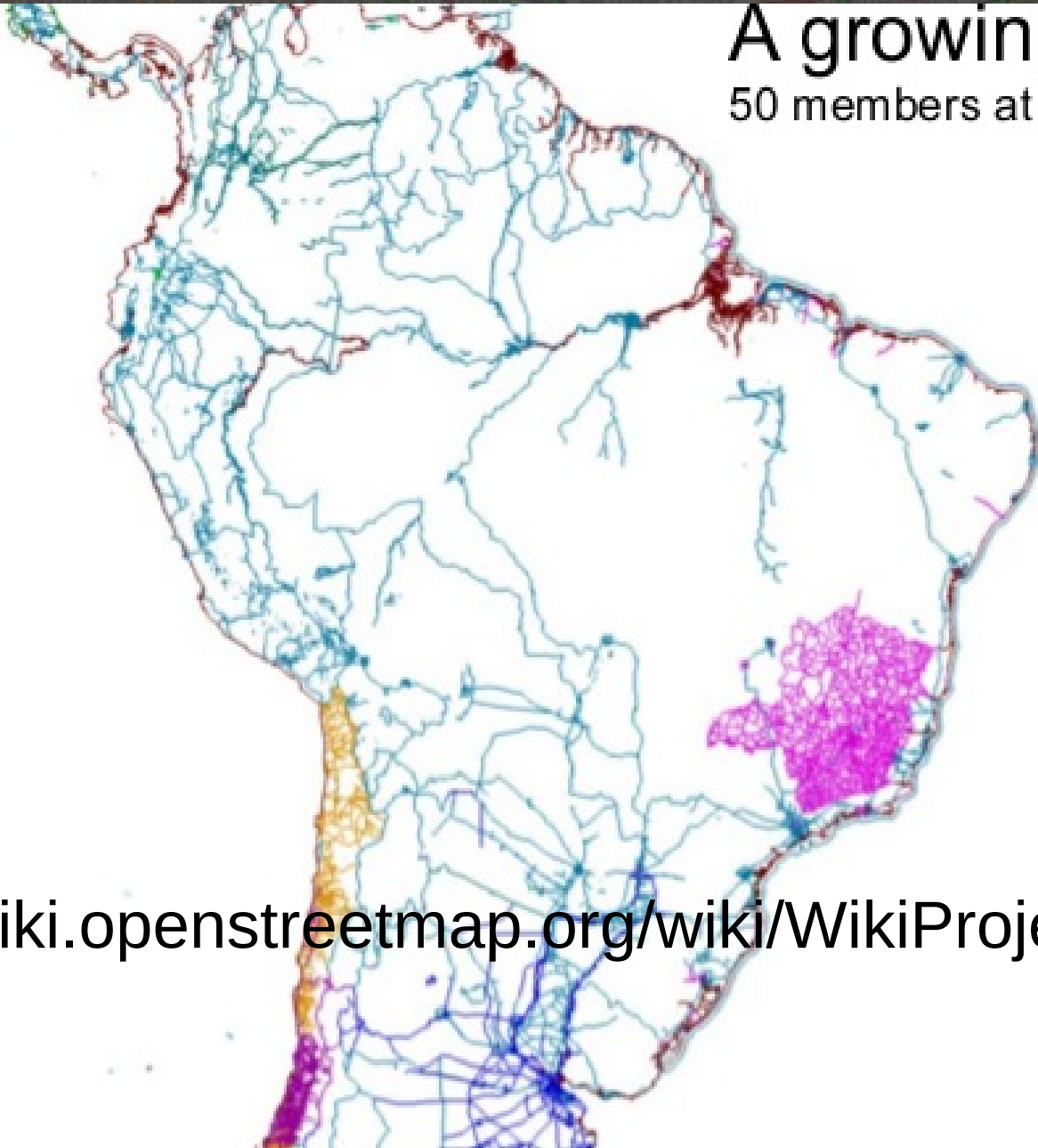
Santo André



OpenStreetMap en Brasil

# OSM en BRASIL

**A growing community**  
50 members at talk-br mailing list



[http://wiki.openstreetmap.org/wiki/WikiProject\\_Brazil](http://wiki.openstreetmap.org/wiki/WikiProject_Brazil)

# OSM en BRASIL

**PROYECTO: Brasil 250**  
**Cidades:** tem por objetivo conectar 250 cidades brasileiras no OSM, a fim de melhorar a qualidade das informações de conectividade de rodovias e acessos.

| Data       | Número de Cidades | Rotas Corretas | Total de Rotas | Percentual OK |
|------------|-------------------|----------------|----------------|---------------|
| 17-02-2010 | 276               | 28050          | 75900          | 36.96%        |
| 25-02-2010 | 279               | 45234          | 77562          | 58.32%        |
| 10-03-2010 | 279               | 47818          | 77562          | 61.65%        |
| 16-03-2010 | 279               | 48328          | 77562          | 62.31%        |
| 06-04-2010 | 279               | 50640          | 77562          | 65.29%        |
| 14-04-2010 | 279               | 51779          | 77562          | 66.76%        |
| 21-04-2010 | 279               | 51773          | 77562          | 66.75%        |
| 27-04-2010 | 279               | 52229          | 77562          | 67.34%        |
| 04-05-2010 | 279               | 52918          | 77562          | 68.23%        |
| 14-05-2010 | 279               | 56173          | 77562          | 72.42%        |
| 21-05-2010 | 279               | 57127          | 77562          | 73.65%        |
| 29-05-2010 | 279               | 57874          | 77562          | 74.58%        |
| 04-06-2010 | 279               | 58089          | 77562          | 74.89%        |
| 12-06-2010 | 279               | 58572          | 77562          | 75.52%        |
| 18-06-2010 | 279               | 58572          | 77562          | 75.52%        |
| 25-07-2010 | 279               | 57848          | 77562          | 74.58%        |



# OSM en BRASIL

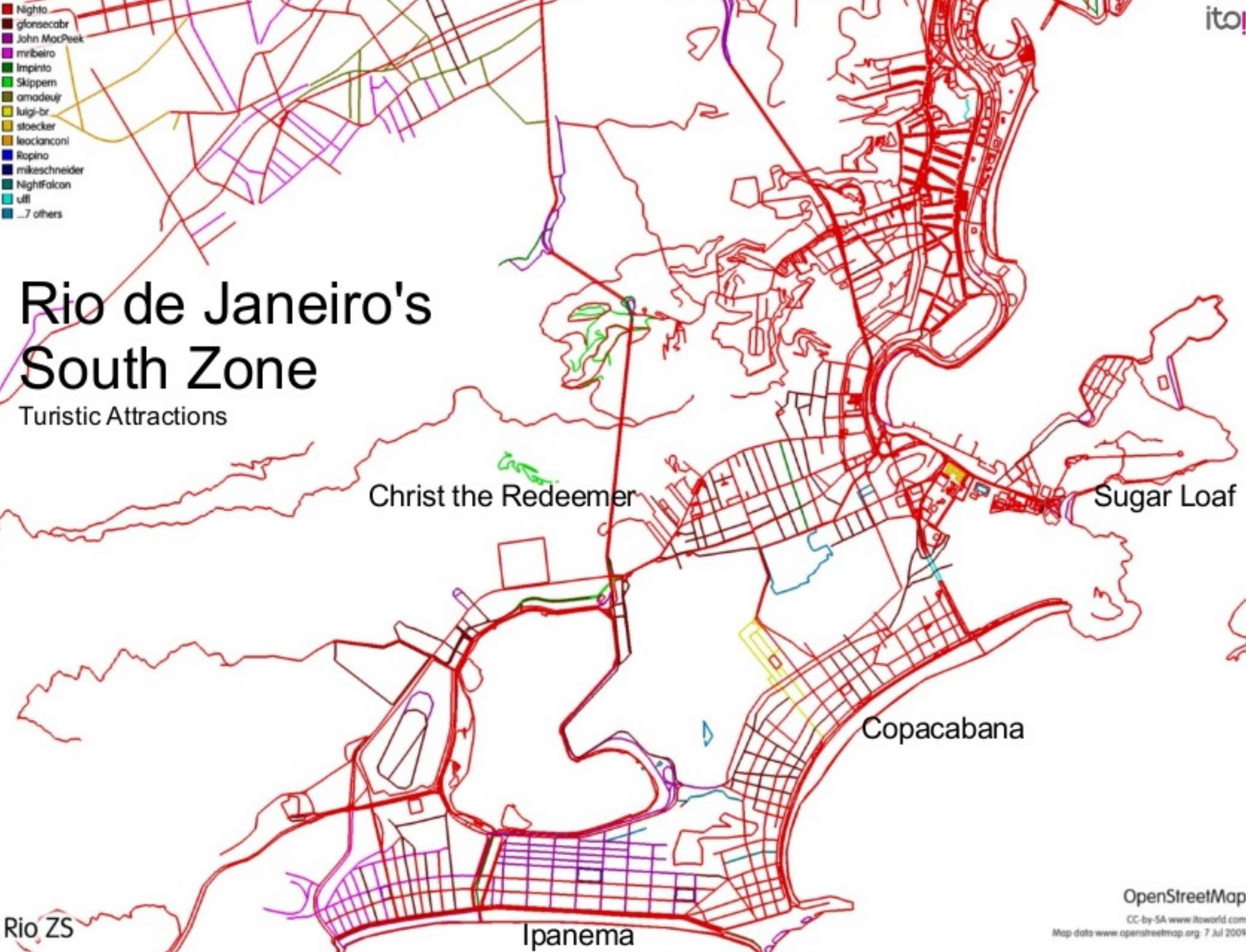
**PROYECTO: 2010**  
**Alagoas Flooding:** Por causa de chuvas intensas em junho de 2010, Alagoas está sofrendo com grandes enchentes, causando a morte de dezenas de pessoas e desabrigando milhares.



- Nighto
- glonsecabr
- John MacPeak
- mlrbeiro
- Impinto
- Skippem
- amadeuir
- luigi-br
- stoecker
- leocianconi
- Ropino
- mikeschneider
- NightFalcon
- ull
- ...7 others

# Rio de Janeiro's South Zone

Turistic Attractions



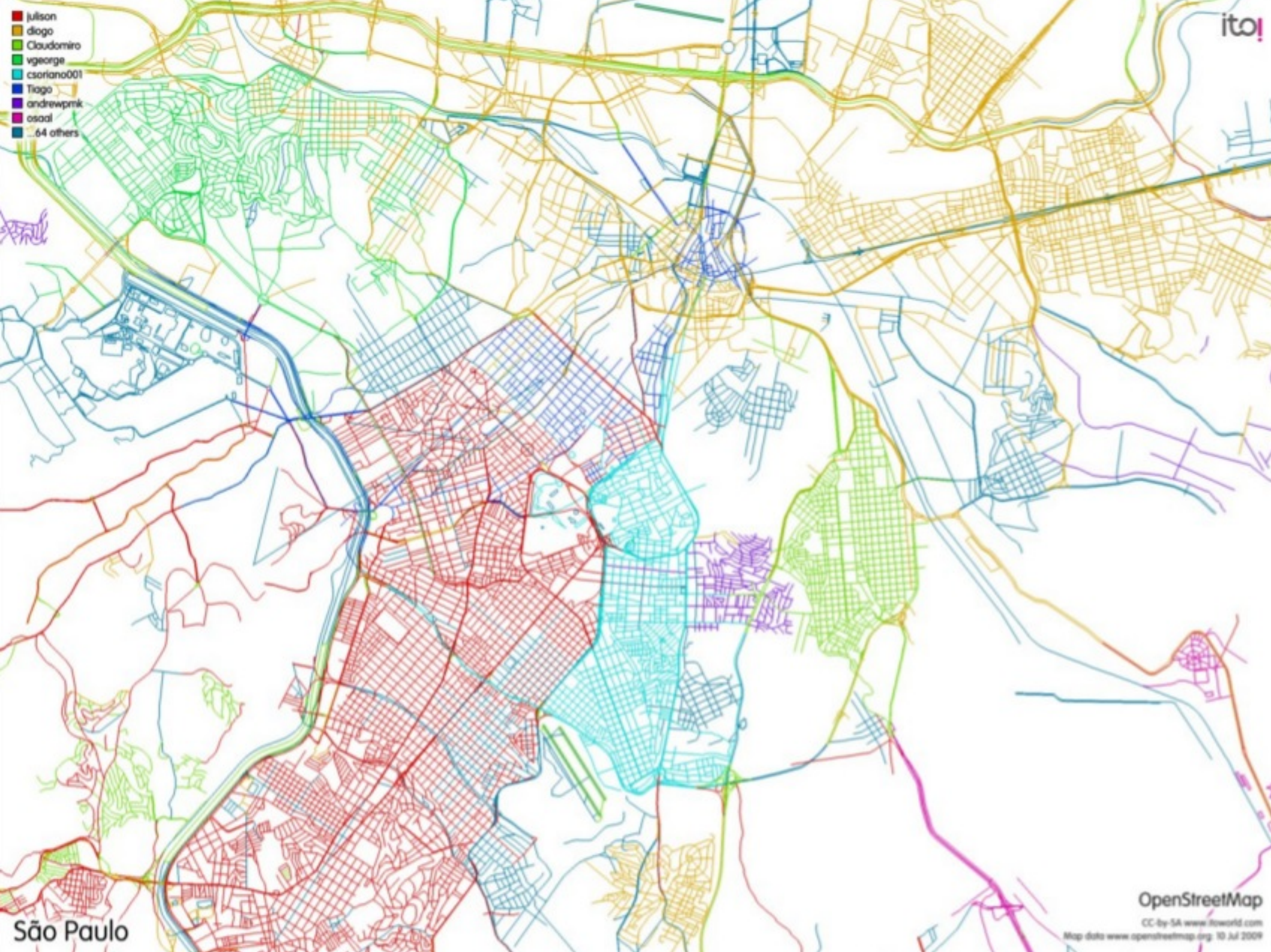
Christ the Redeemer

Sugar Loaf

Copacabana

Ipanema

Rio ZS



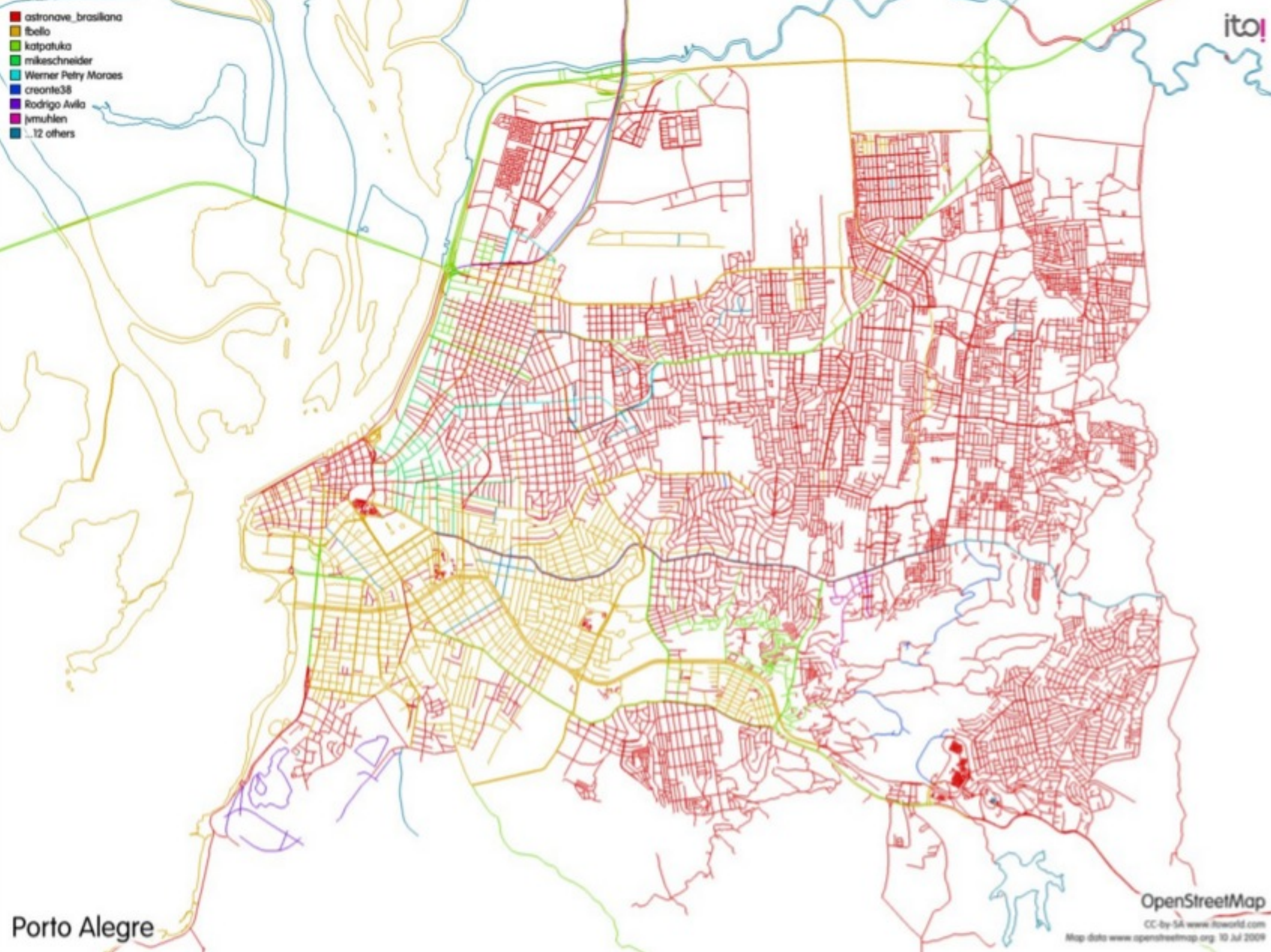
- julison
- diago
- Claudomiro
- vgeorge
- csoriano001
- Tiago
- andrewwpmk
- osaal
- .64 others

ito!

São Paulo

OpenStreetMap

CC-by-SA [www.itoworld.com](http://www.itoworld.com)  
Map data [www.openstreetmap.org](http://www.openstreetmap.org) 10 Jul 2009



- astronave\_brasiliana
- fbelo
- katpatuka
- mikeschneider
- Werner Petry Moraes
- creonte38
- Rodrigo Avila
- jmhulen
- ...12 others

ito!

Porto Alegre

OpenStreetMap

CC-by-SA [www.itoworld.com](http://www.itoworld.com)  
Map data [www.openstreetmap.org](http://www.openstreetmap.org), 10 Jul 2009



Mata do Lobão

Vila Cuera

Instituto de Estudos Costeiros

Camutã

Bragança

BR-308

BR-308

BR-308

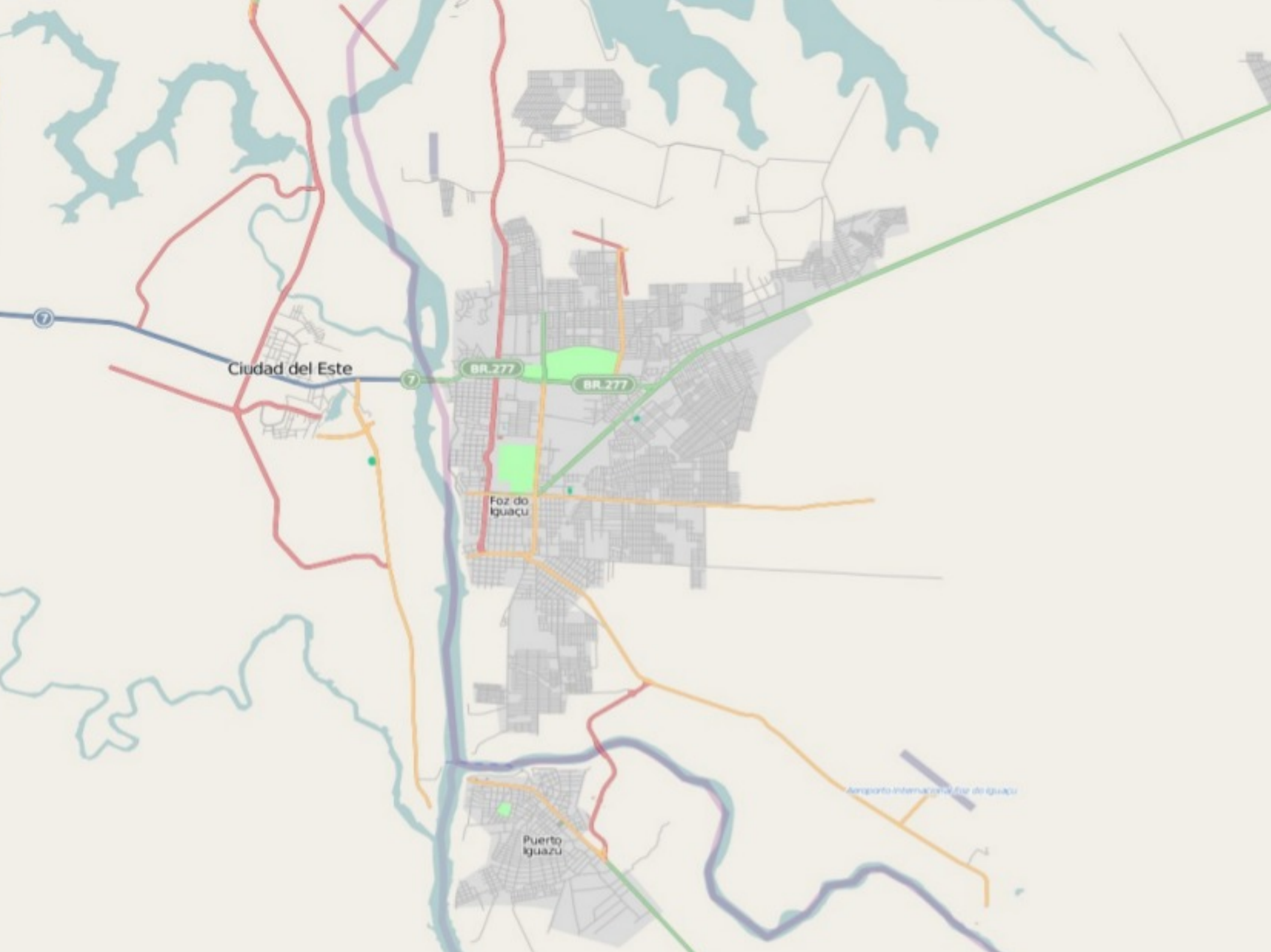
BR-308

Sítio e Ovelha João Alcântara

Curutua

Meranfuzinho

Farendinha



Ciudad del Este

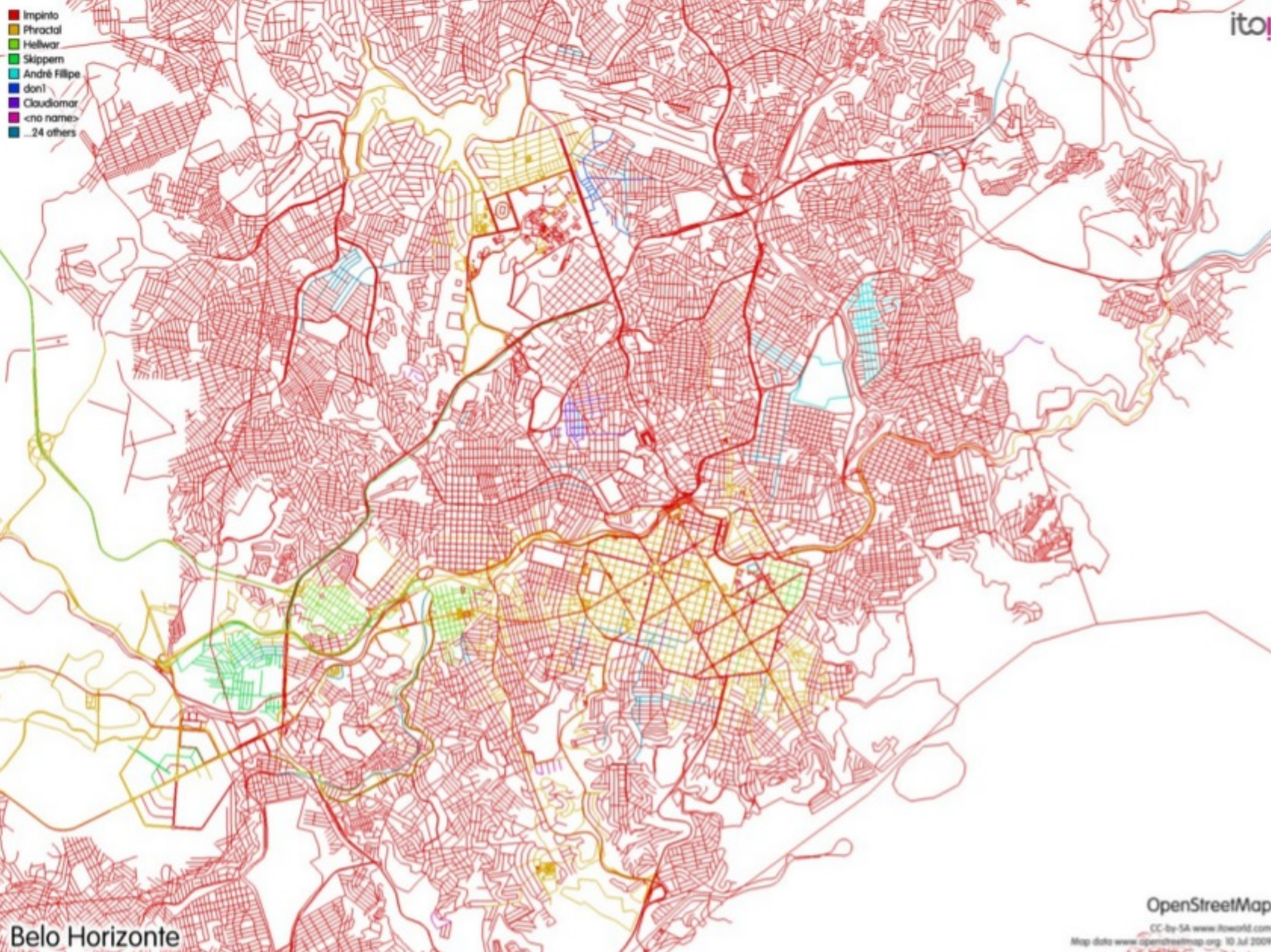
BR-277

BR-277

Foz do Iguaçu

Puerto Iguazu

Aeroporto Internacional Foz de Iguaçu



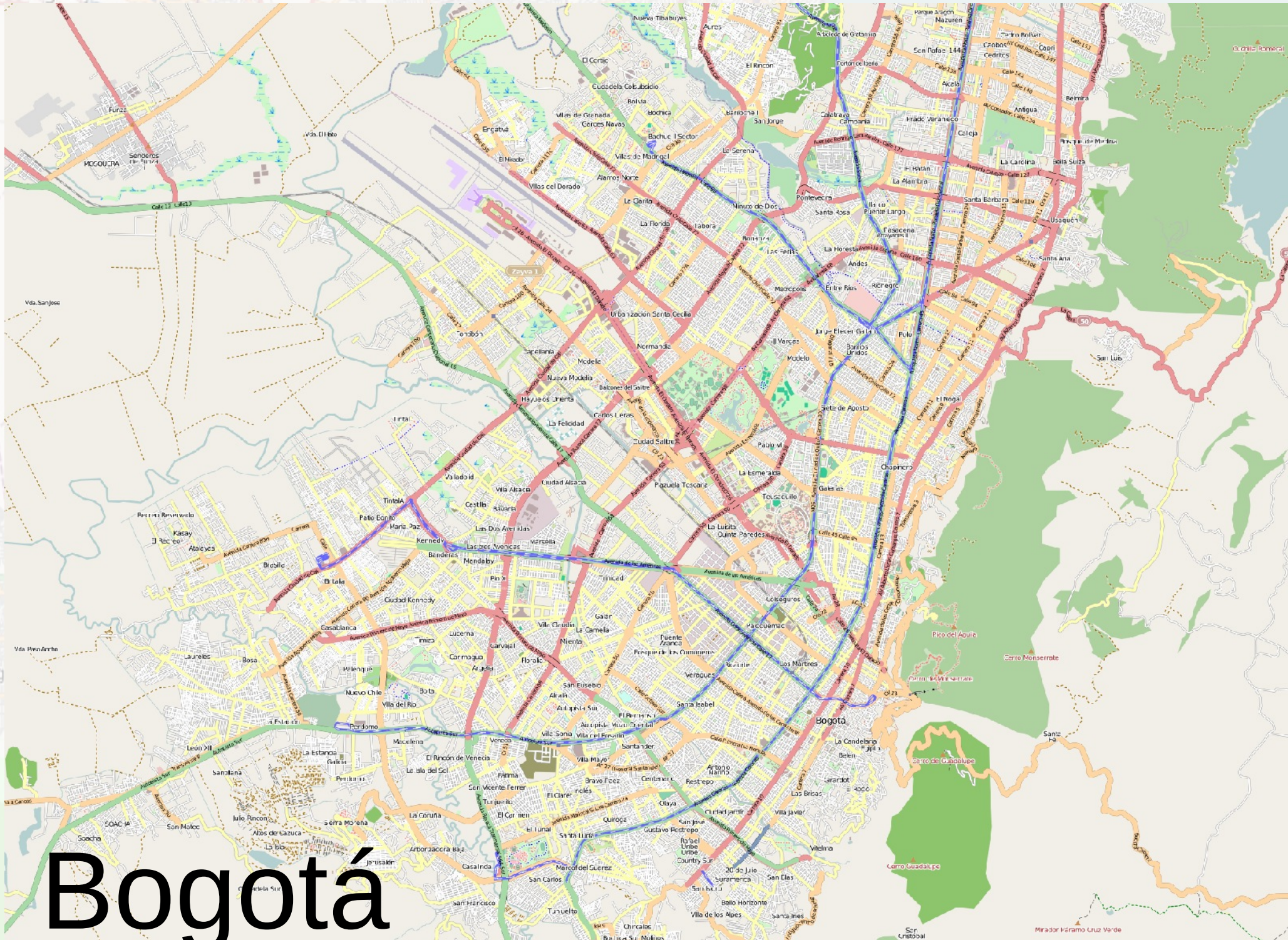
- Império
- Fractal
- Hellwar
- Skippern
- André Filipe
- donI
- Claudiomar
- <no name>
- ...24 others

Belo Horizonte



# Otros ejemplos de OSM en Latinoamérica

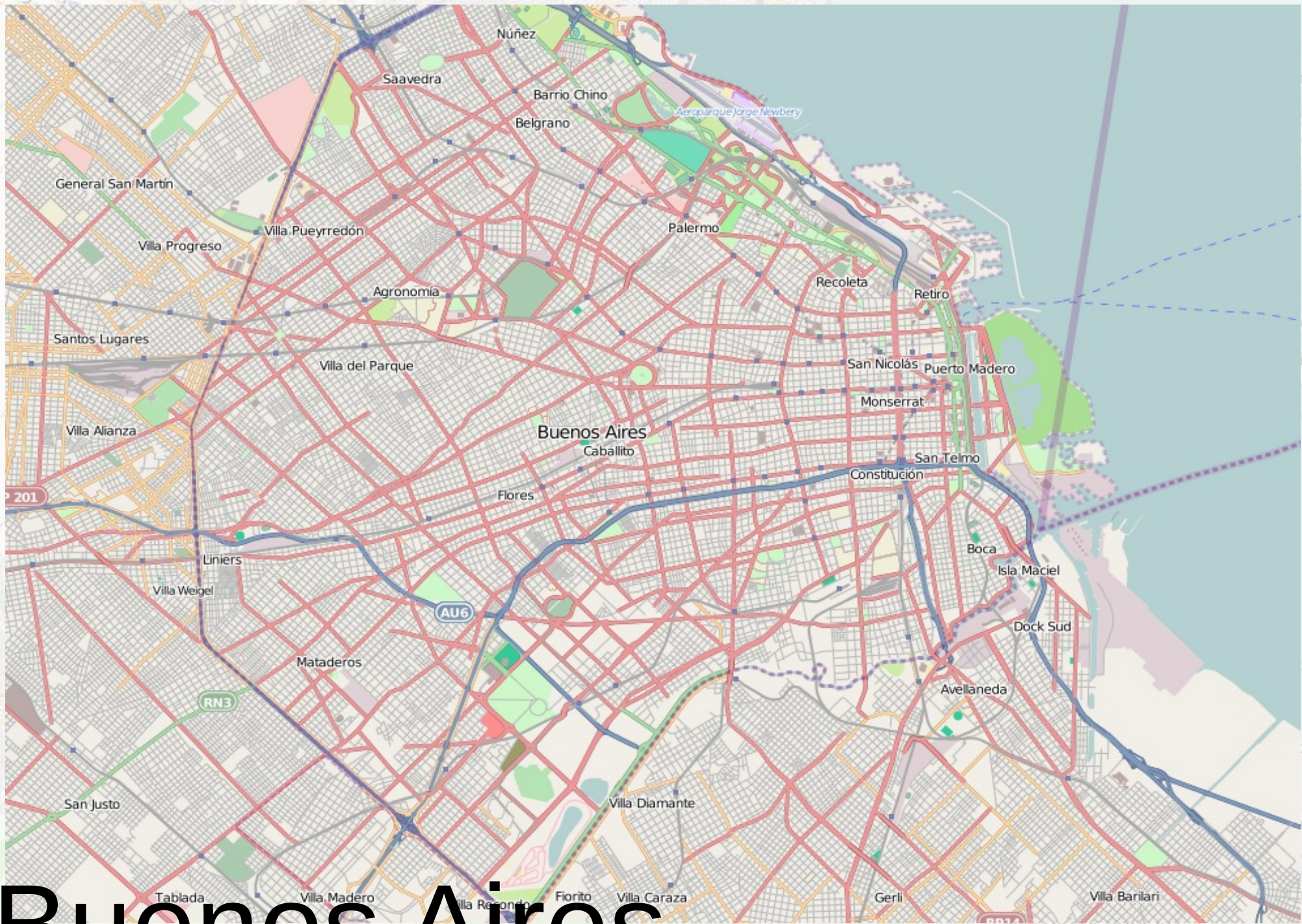




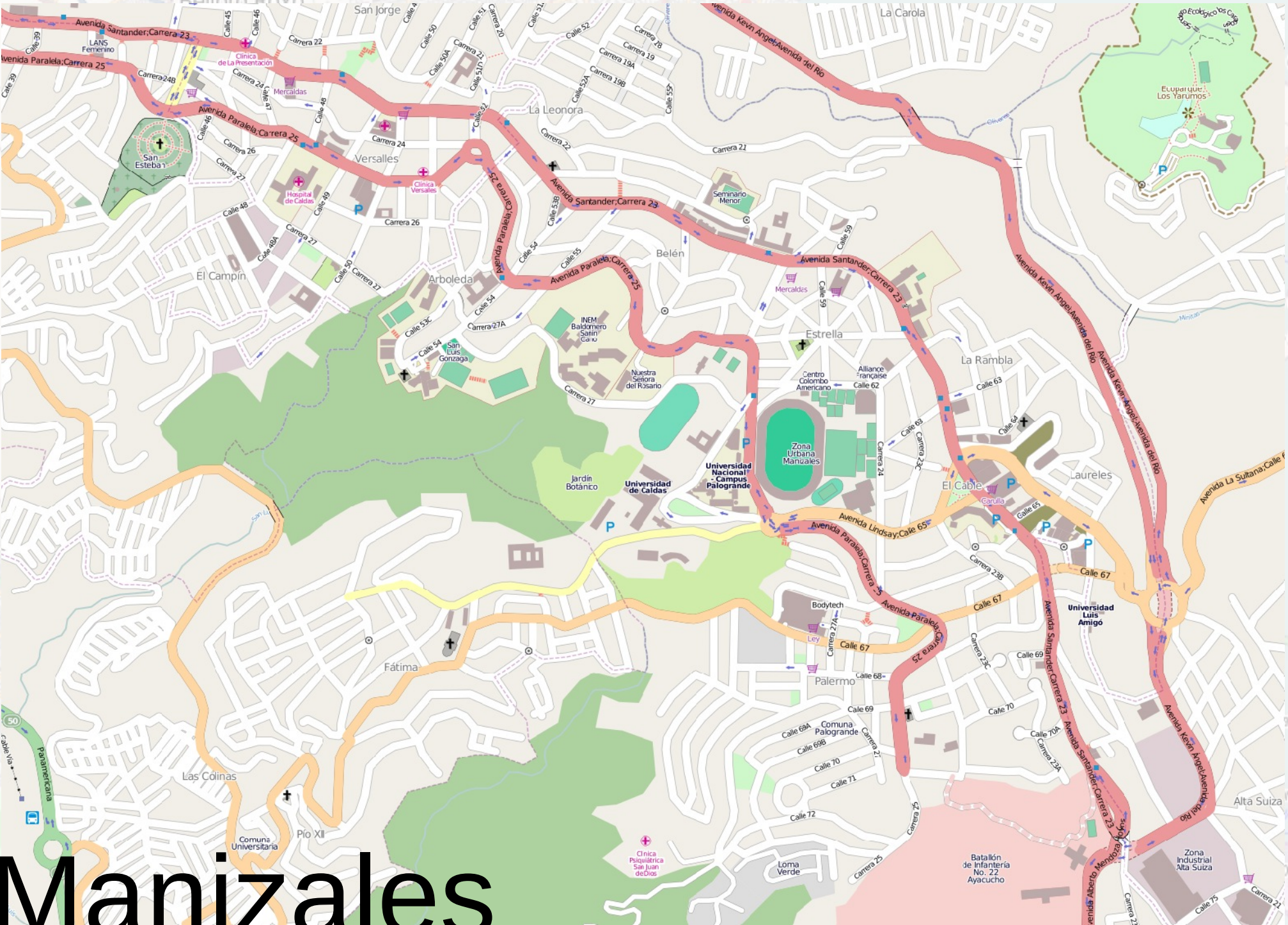
# Bogotá



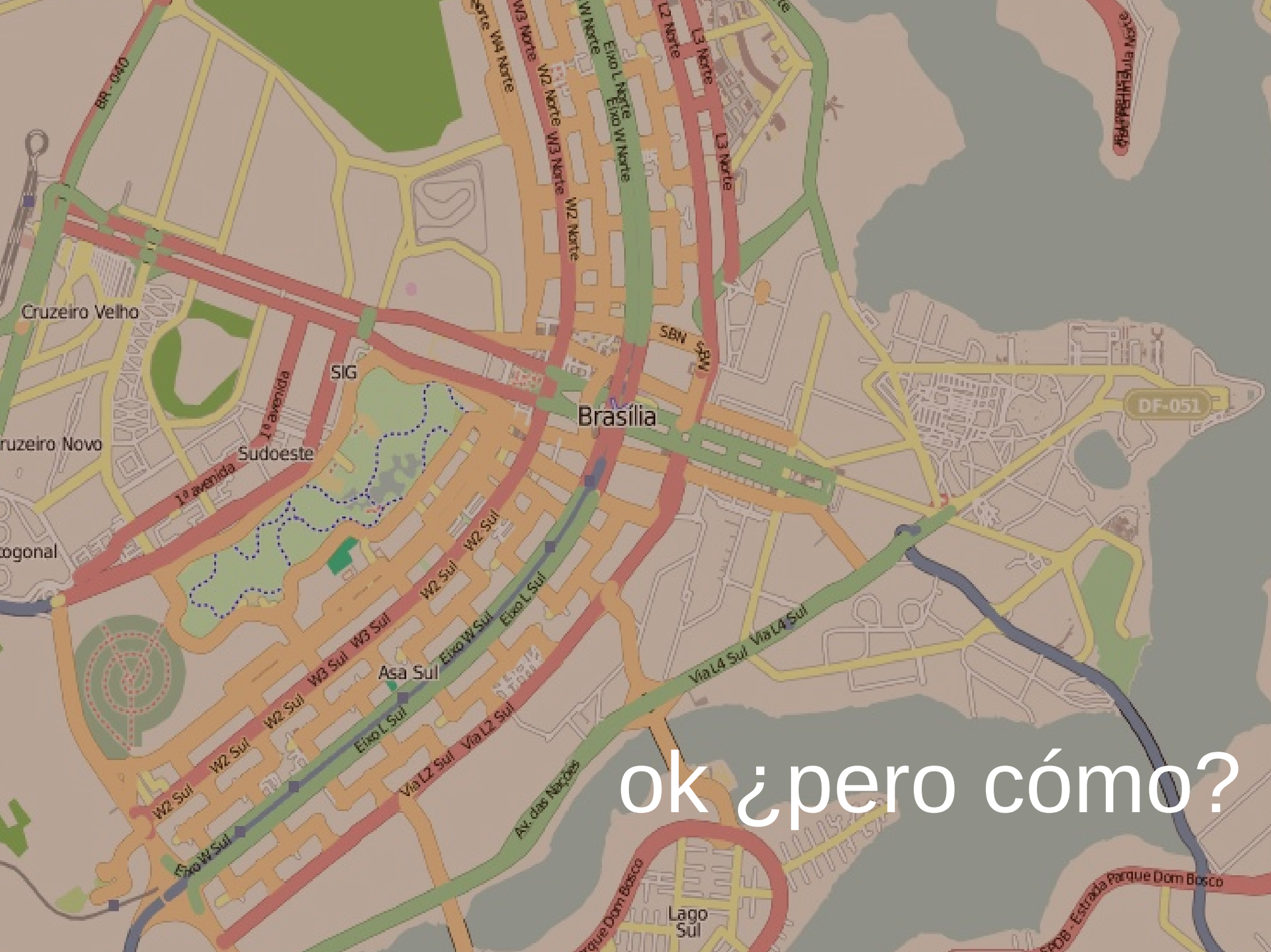
# La Habana Vieja



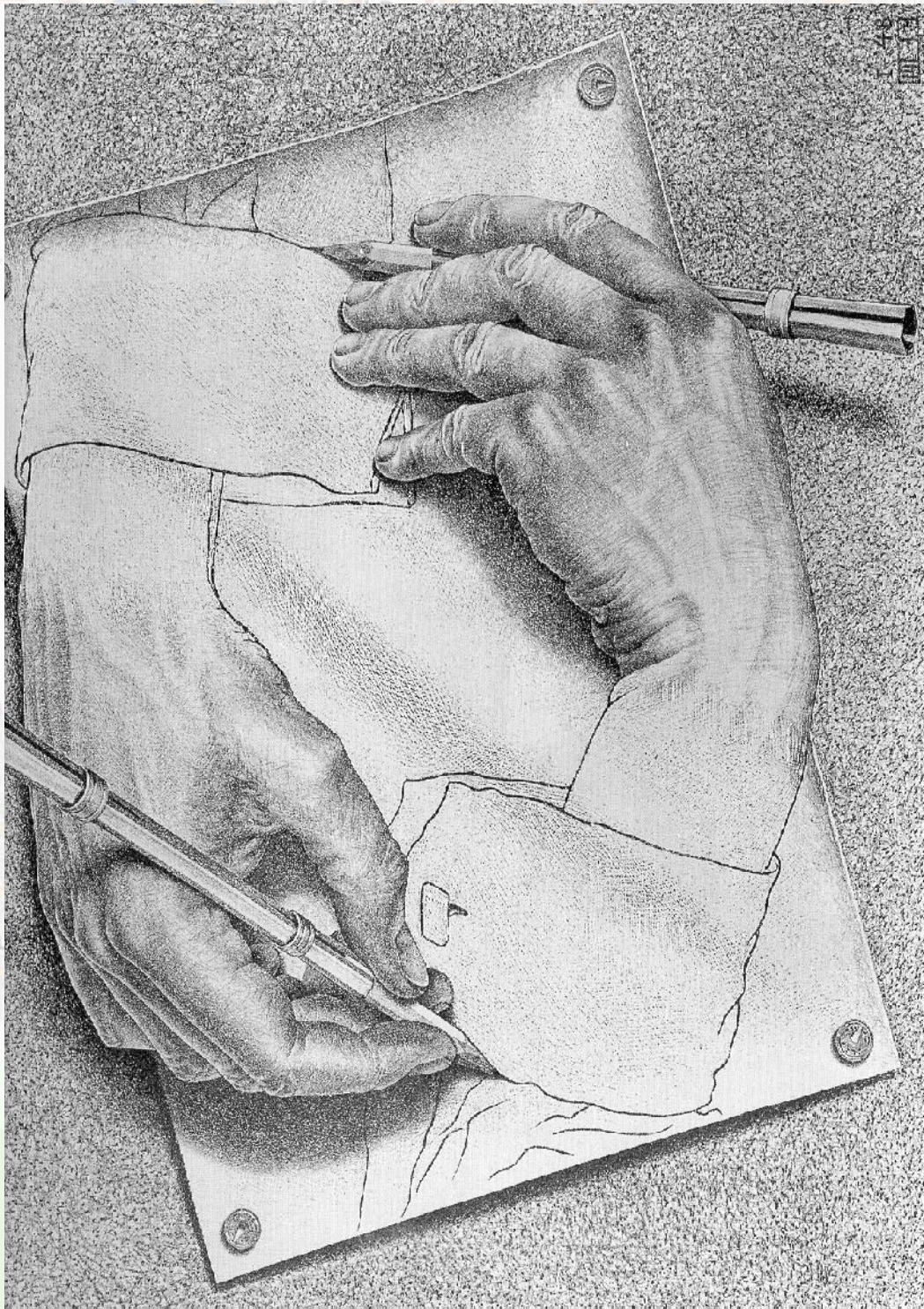
# Buenos Aires



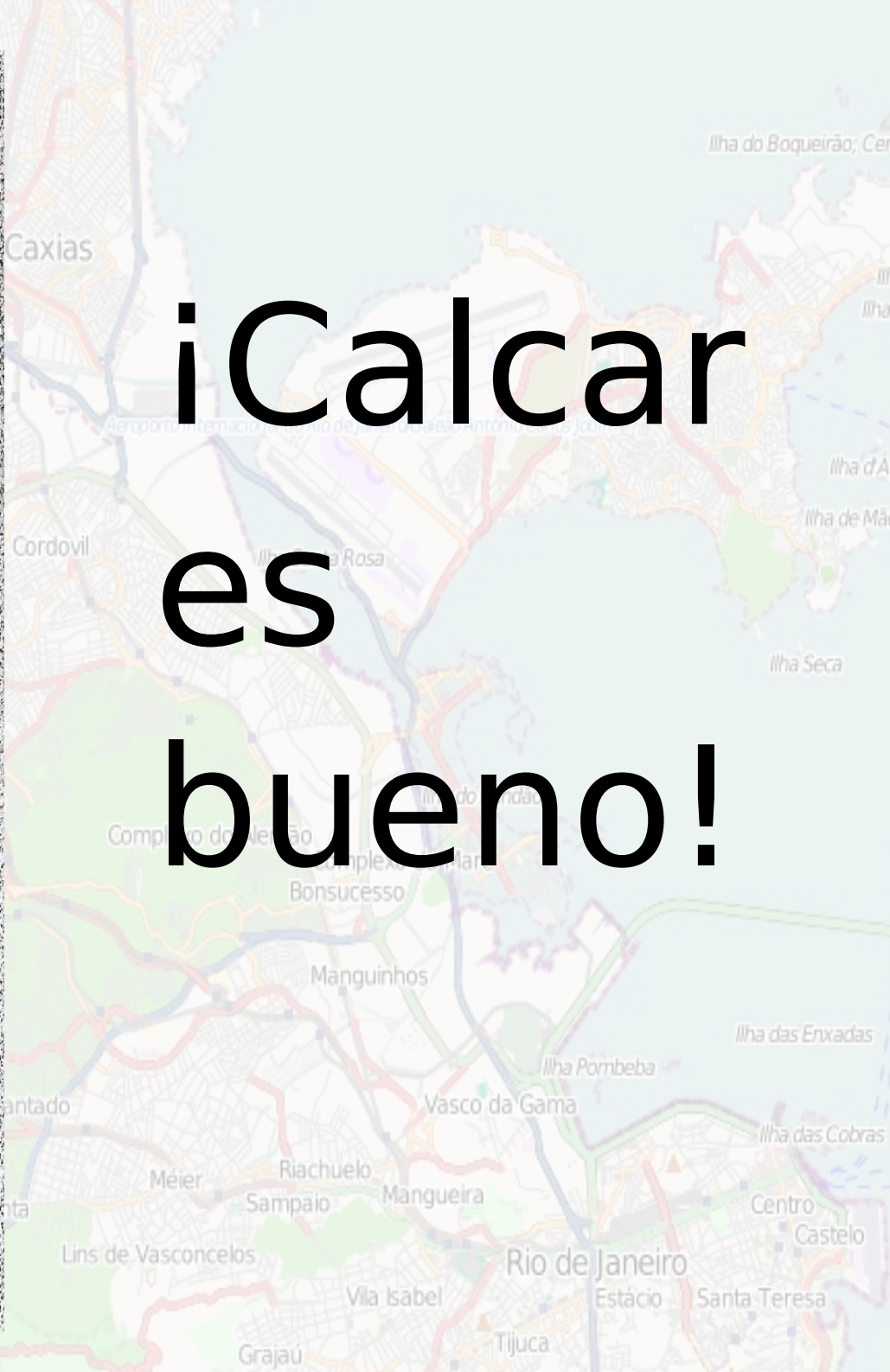
# Manizales

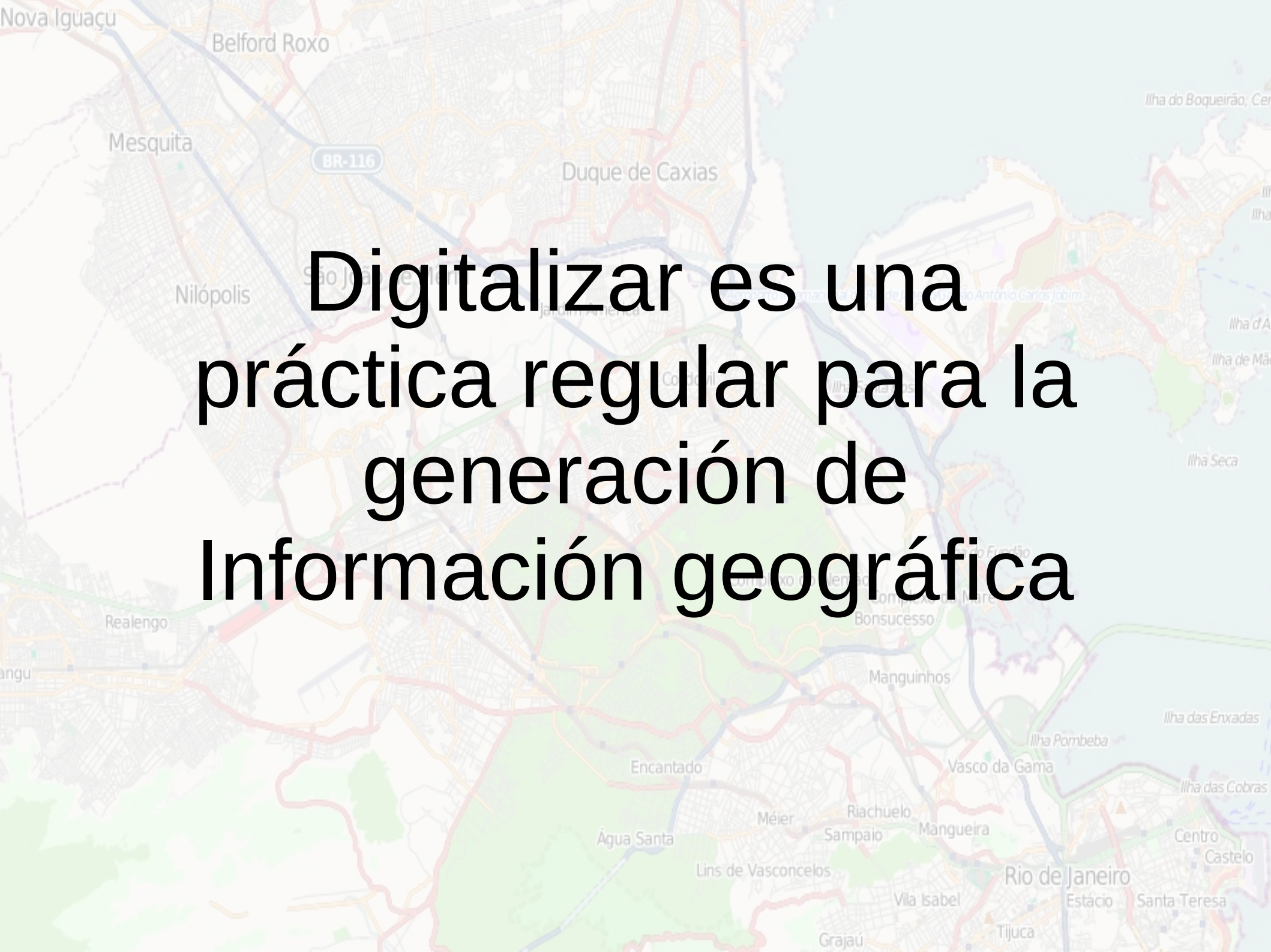


ok ¿pero cómo?



iCalcar  
es  
bueno!





**Digitalizar es una  
práctica regular para la  
generación de  
Información geográfica**

A map of Rio de Janeiro, Brazil, showing various neighborhoods and landmarks. The map is overlaid with a semi-transparent white box containing text. The text is in Spanish and lists sources of information that can be digitized in OSM. The map shows the city's layout, including the bay, hills, and major roads. Labels on the map include Nova Iguaçu, Belford Roxo, Mesquita, BR-116, Duque de Caxias, São João de Meriti, Jardim América, Aeroporto Internacional do Rio de Janeiro Galeão Antonio Carlos Jobim, Nilópolis, Cordovil, Ilha Santa Rosa, Ilha do Fundão, Complexo do Alemão, Complexo da Mare, Bonsucesso, Manguinhos, Ilha das Enxadas, Ilha Pombeba, Ilha das Cobras, Encantado, Méier, Riachuelo, Mangueira, Centro, Castelo, Água Santa, Sampaio, Vila Isabel, Rio de Janeiro, Estácio, Santa Teresa, Grajaú, Tijuca, and Lins de Vasconcelos.

# En OSM se puede digitalizar información de:

- Fotografías de yahoo!
- Trazos GPS GPX
- Walking-papers.org





OpenStreetMap

Ver Editar Historial Exportar Trazas GPS Diarios de usuario

Bienvenido, humano | inicio | **bandeja de entrada (1)** | Salir

Ayuda y Wiki  
Blog y noticias  
Tienda

Buscar ¿Dónde estoy?  
Ir

ejemplos: 'Sora', 'Calle Mayor', 'Lugo', 'CB2 5AQ', o 'post offices near Lünen' más ejemplos...

Hacer una donación

CC BY SA

Pollatch 1.3 Drag and drop points of interest

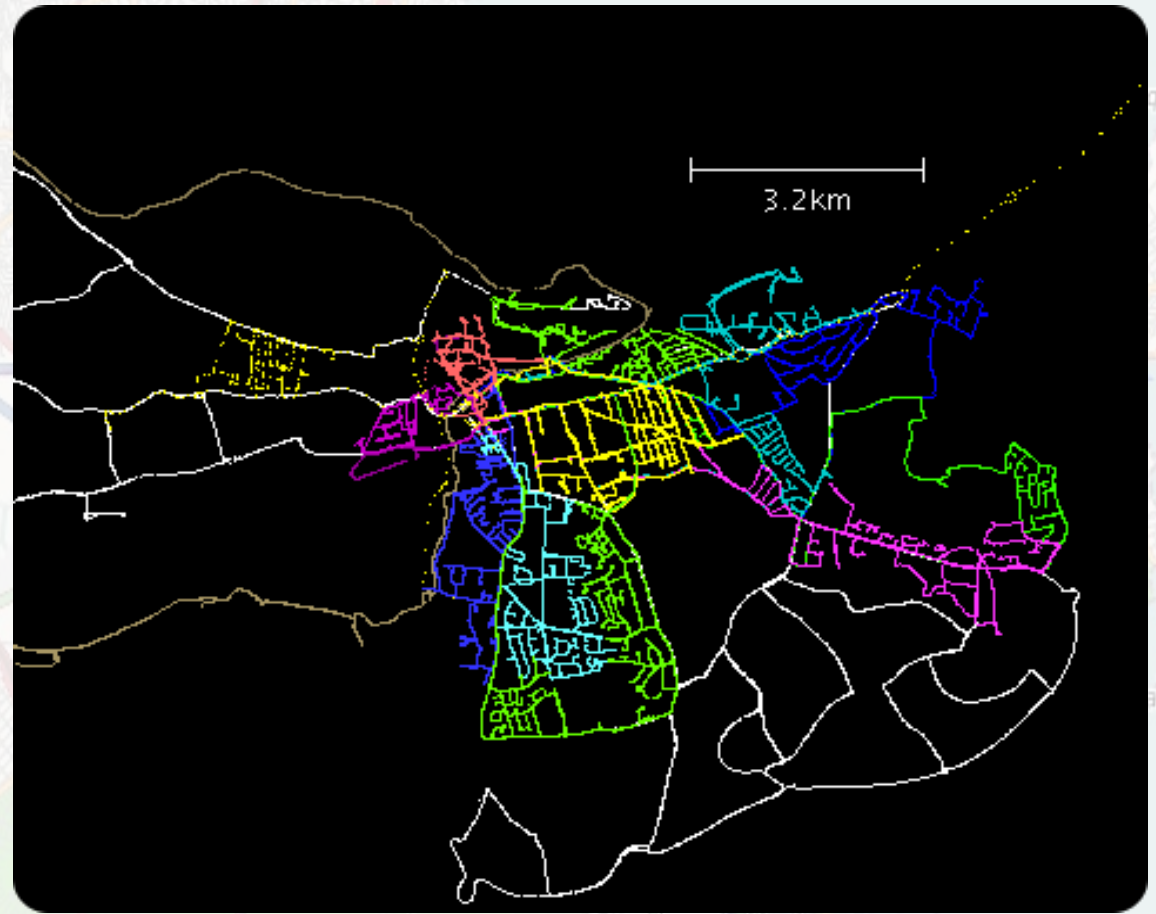
|            |              |               |               |               |              |              |
|------------|--------------|---------------|---------------|---------------|--------------|--------------|
| Aeropuerto | Perada de bu | Transbordad   | P Aparcamient | Estación de t | Parada de ta | Bar          |
| Cafe:ería  | Cine         | Comida rápid  | Pub           | Restaurante   | Teatro       | Convenience  |
| Hotel      | Farmacia     | Buzón de cor  | Punto de rec  | Supermercac   | Teléfono     | Parque de bc |
| Hospital   | Ccmisaria de | Lugar de cult | Museo         | Escuela       |              |              |

Ayuda Avanzado

Editando en vivo

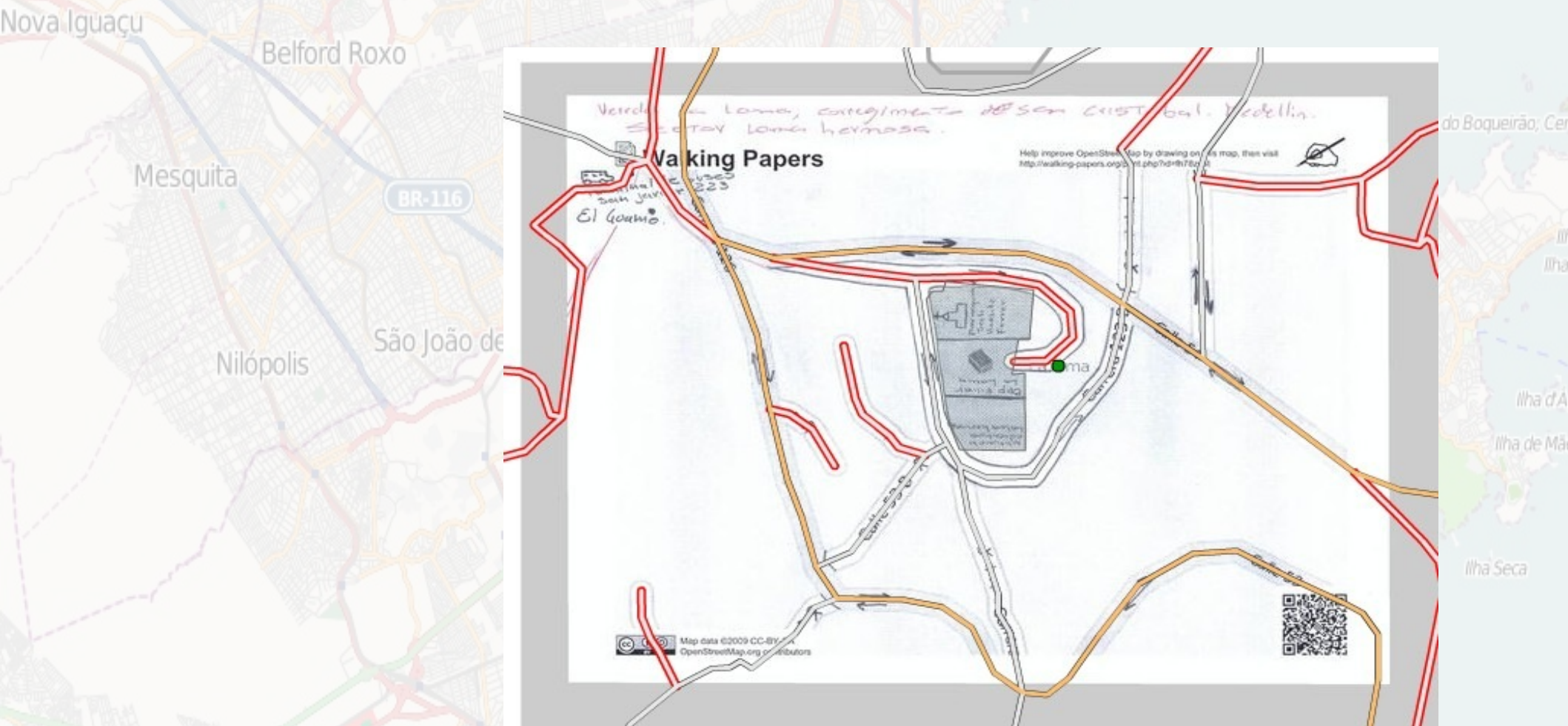
# Fotografías de yahoo!

Yahoo permite para OSM generar obras derivadas de sus fotografías aéreas



## Trazos GPS GPX

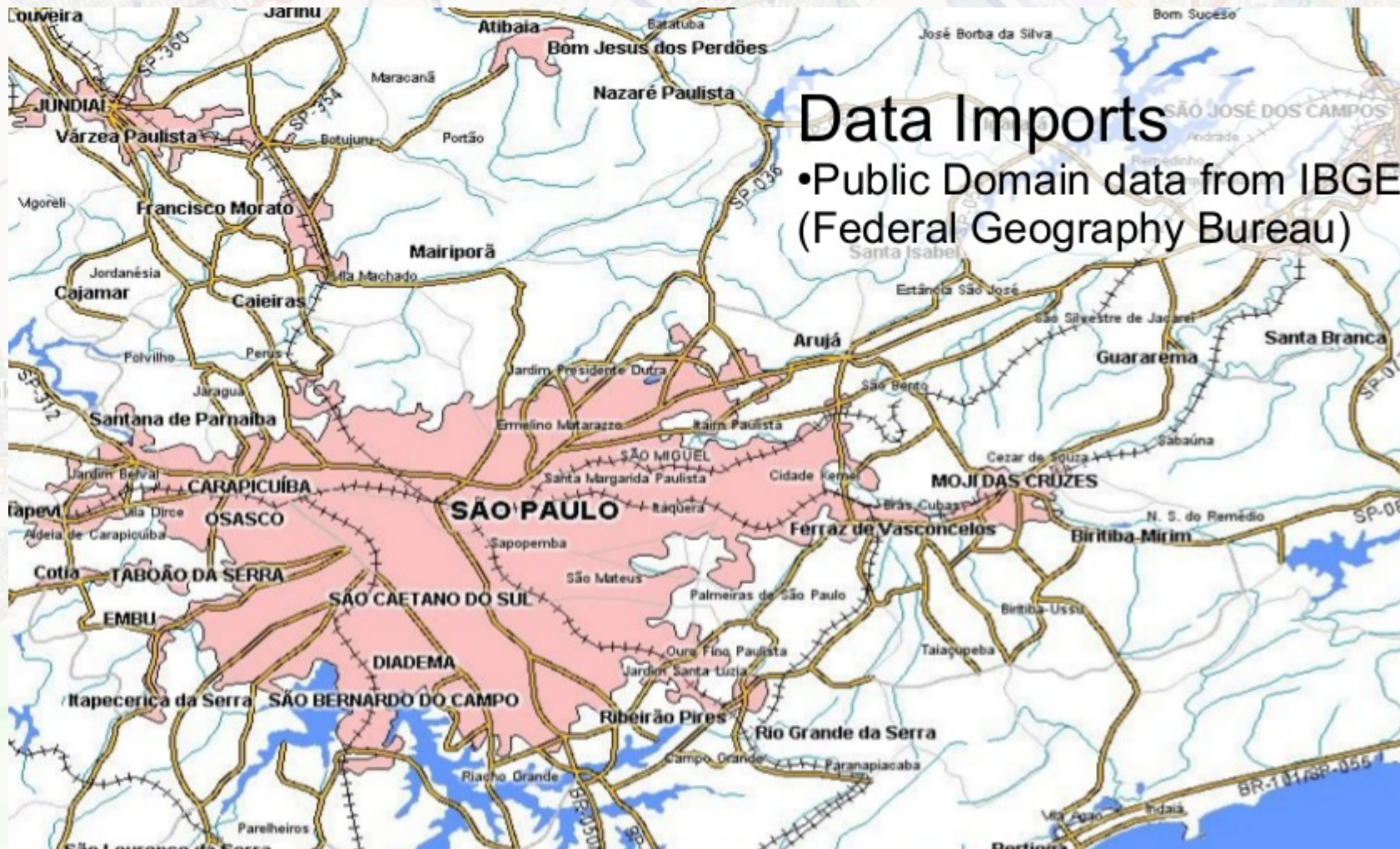
Colaboradores con aparatos GPS recorren el planeta y comparten la información registrada en sus travesías



## Walking-papers.org

Imprime mapas, dibuja sobre ellos, vuelve e escanearlos y ayuda a OpenStreetMap a mejorar su cobertura de puntos de interés local y detalle a pie de calle.

# OSM puede importar directamente información de otros sistemas de información geográfica





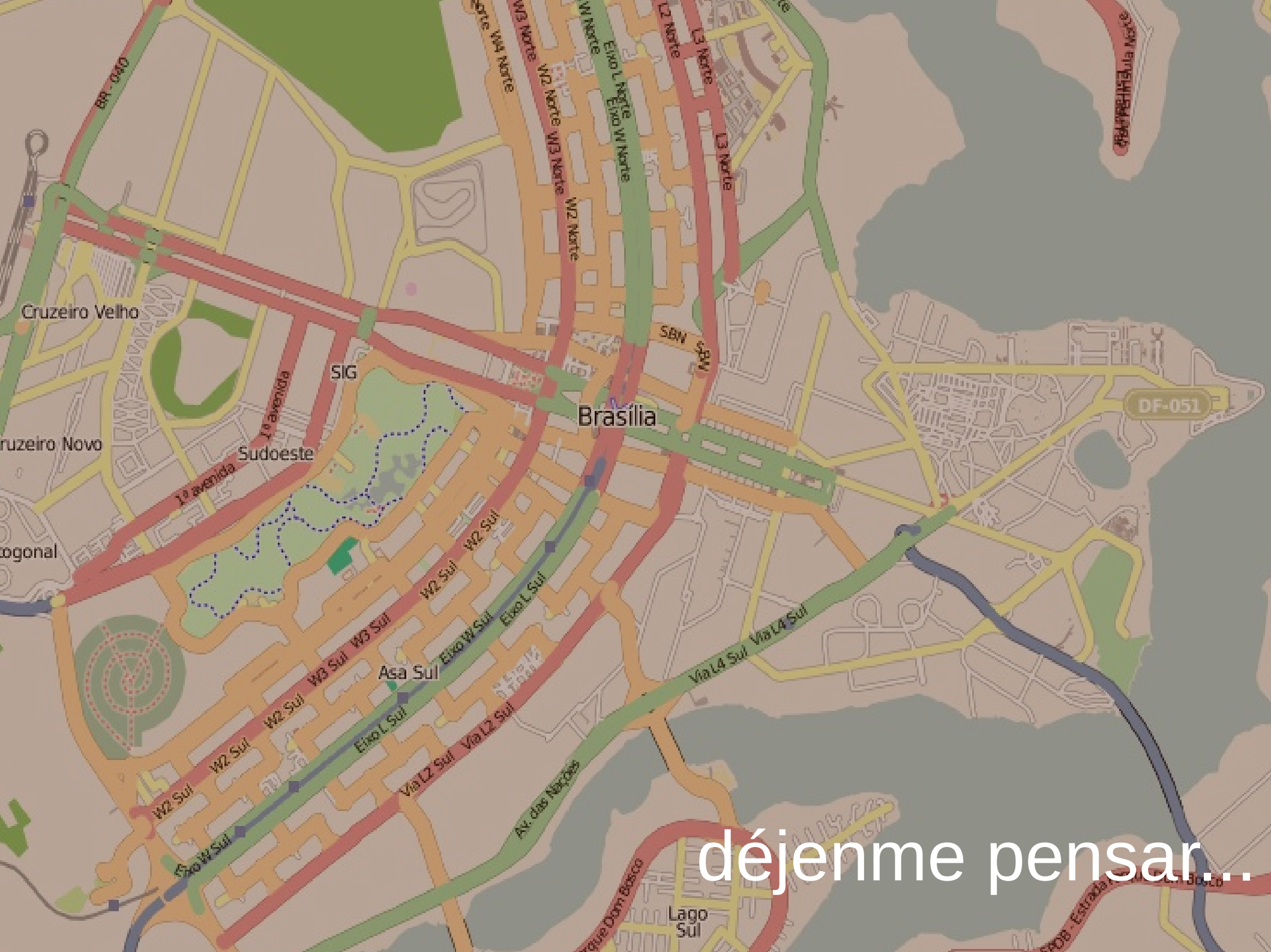
¿Qué se puede hacer con la información de OSM?

R.: Lo que quieras, se permiten obras derivadas y uso comercial

- Descarga
- Redistribución
- Uso comercial
- Sin aviso



Por ejemplo....



déjenme pensar...



Vincular a este mapa

Mapa  
Híbrido  
Satélite

Buscar mi ubicación

22382 elementos con geotiquetas

Ordenar por: **Interesante** Recientes

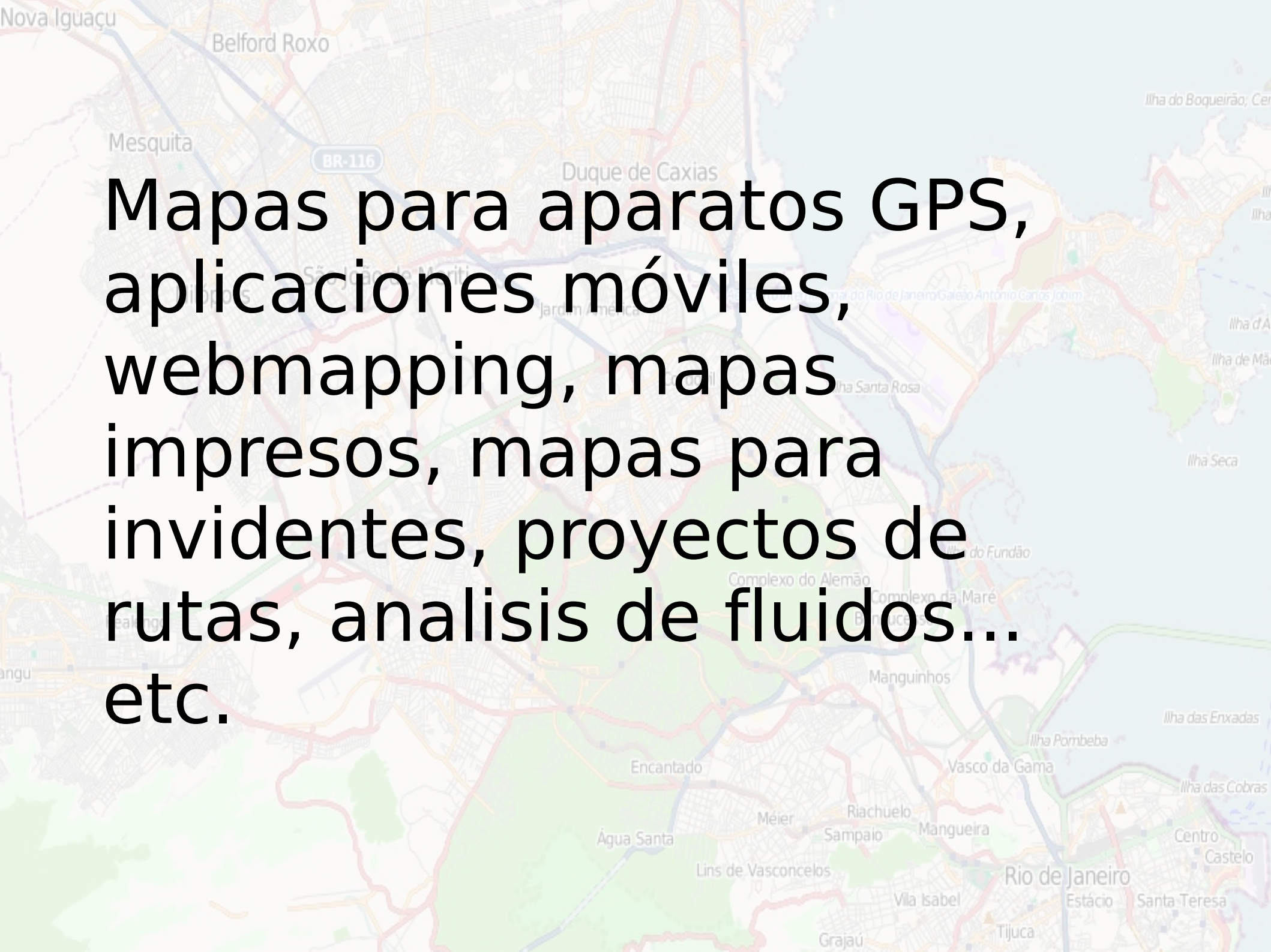
Buscar en el mapa

Map data © OpenStreetMap contributors

- Actividad [A tu alrededor](#) | [En tus grupos](#) | [De tus amigos](#)
- Tú [Tu galería](#) | [Organizar](#) | [Subir fotos](#) | [Tu cuenta](#)
- Explorar [Lugares](#) | [Últimos 7 días](#) | [Este mes](#) | [Las etiquetas más populares](#) | [The Commons](#) | [Creative Commons](#) | [Buscar](#)
- Ayuda [Normas de la comunidad](#) | [El foro de ayuda](#) | [Preguntas frecuentes](#) | [Herramientas](#) | [Mapa del sitio](#) | [Obtener ayuda](#)
- Blog de Flickr [Acerca de Flickr](#) | [Condiciones de servicio](#) | [Tu privacidad](#) | [Propiedad Intelectual](#) | [Reportar abusos](#)

# iNegocios!





Mapas para aparatos GPS,  
aplicaciones móviles,  
webmapping, mapas  
impresos, mapas para  
invidentes, proyectos de  
rutas, analisis de fluidos...  
etc.



Home

Blog

My area

Journey planner

Home: home BETA status Become a fan Follow us on Twitter My journey

## CycleStreets

Cycling intelligence for the UK

- Journey Planner lets you plan a cycle journey
- Photomap has 16,636 photos of cycling infrastr

CycleStreets in your area: All UK or ...

Journey Planner - plan a cycle journey

<http://ssiti.uv.es/valencia/>

<http://www.cyclestreets.net/>

Valencia Verda

des de paz

fins a cid

mostrar opcions adicionales

Calcular

Ha sido imposible calcular la ruta.

OpenCycleMap.org - the OpenStreetMap Cycle Map

Key and More Info | Help | GPS

Created by Andy Allan and Dave Stubbs

Sponsored by CloudMade

Share your current view of the map! (Permalink)

Edit OpenStreetMap data here

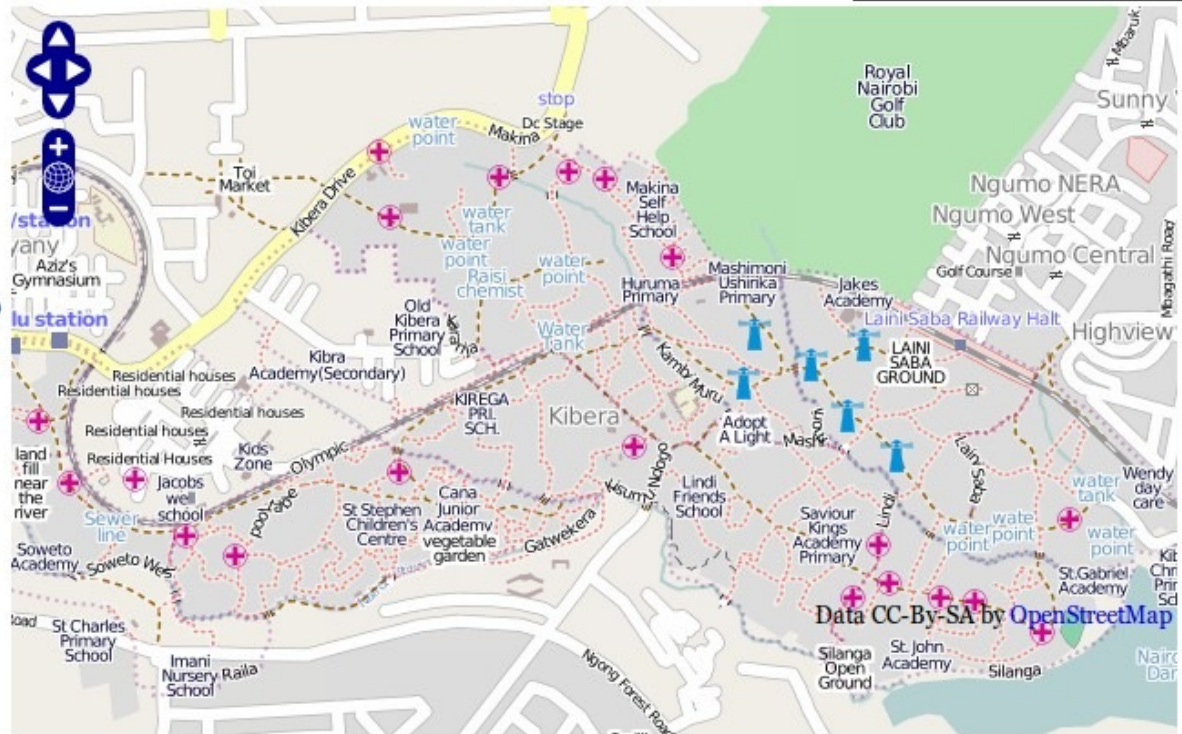
All maps cc-by-sa OpenStreetMap contributors

<http://www.opencyclemap.org/>

# MAP KIBERA

**Kibera's first complete free and open map  
November 2009**

Kibera in Nairobi, Kenya, widely known as Africa's largest slum, remains a blank spot on the map. Without basic knowledge of the geography and resources of Kibera it is impossible to have an informed discussion on how to improve the lives of residents. This November, young Kiberans create the first public digital map of their own community.



themes

Health

Security

Education

Water/Sanitation

get involved

Wiki

all our plans

Discuss

on the [Google Group](#) and  
[Facebook](#)

Voice of  
Kibera

community media

Download

get data

Contact

great to hear from you

[mapkibera blog](#)

Twitter Weekly Updates  
for 2010-05-11

Kibera News Network  
update

Twitter Weekly Updates  
for 2010-05-01

Technology, Hype,  
Marginalisation

<http://mapkybera.org>

# ELECCIONES TRANSPARENTES

Participación ciudadana por la transparencia electoral

+ REPORTAR INCIDENTE



INICIO

INFORMES

REPORTAR INCIDENTE

RECIBE ALERTAS

BLOG

CONTACTARNOS

ACERCA DE

¿CÓMO PARTICIPO?

FILTROS  
TODO

INFORMES

NOTICIAS

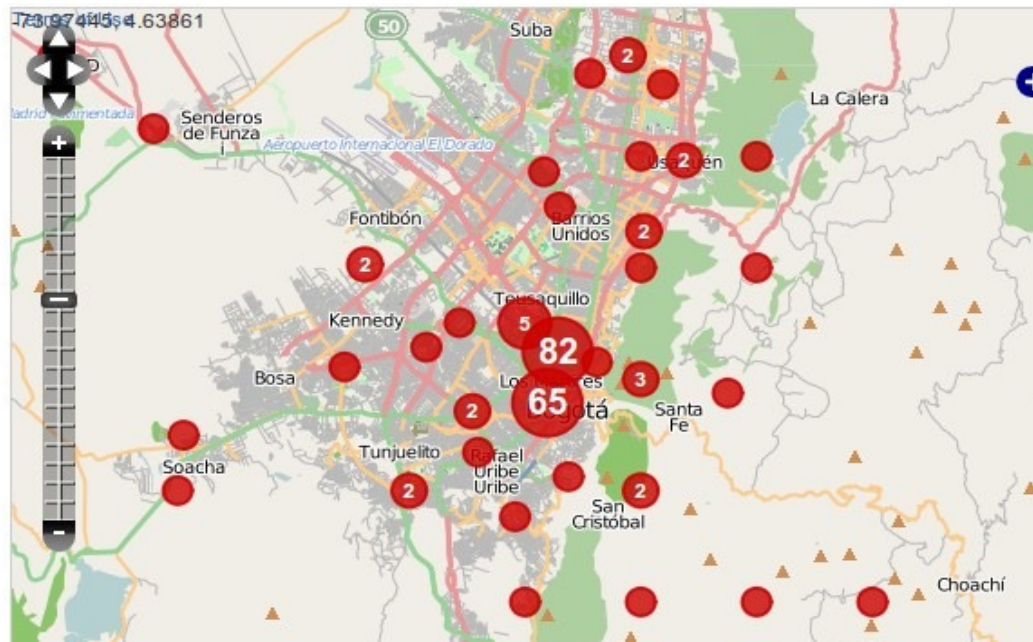
IMÁGENES

VIDEO

VISTAS  
TIME

CLUSTERS

FILTROS POR CATEGORÍA

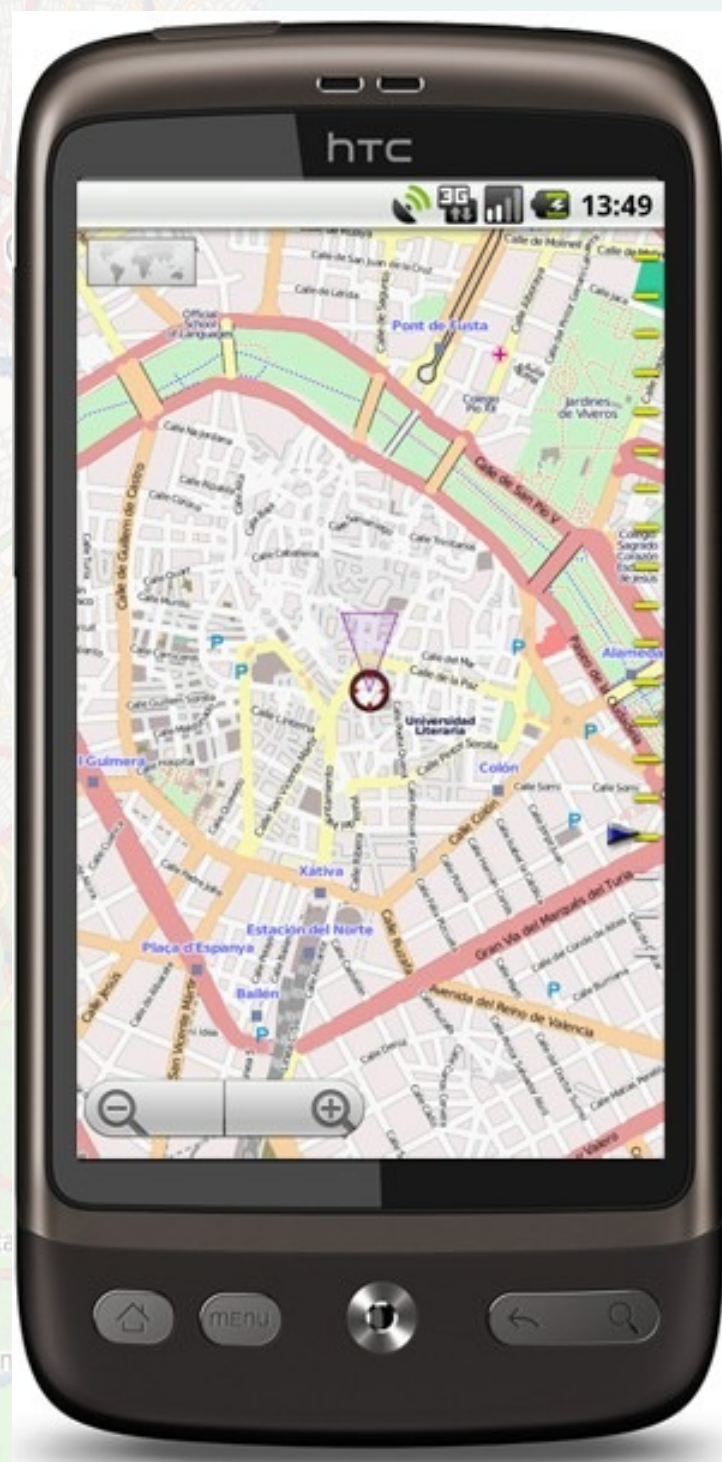


From: Apr 2010 To: Dec 2010

PLAY

- Todas las categorías
- Publicidad política en la mesa de votación
- Violación del voto secreto
- Compra de votos
- Falta de material electoral
- Fraude
- Violencia
- Voto impedido
- Suplantación de jurados
- Alteración de las urnas
- Alteración de resultados

<http://eleccionestransparentes.com/>



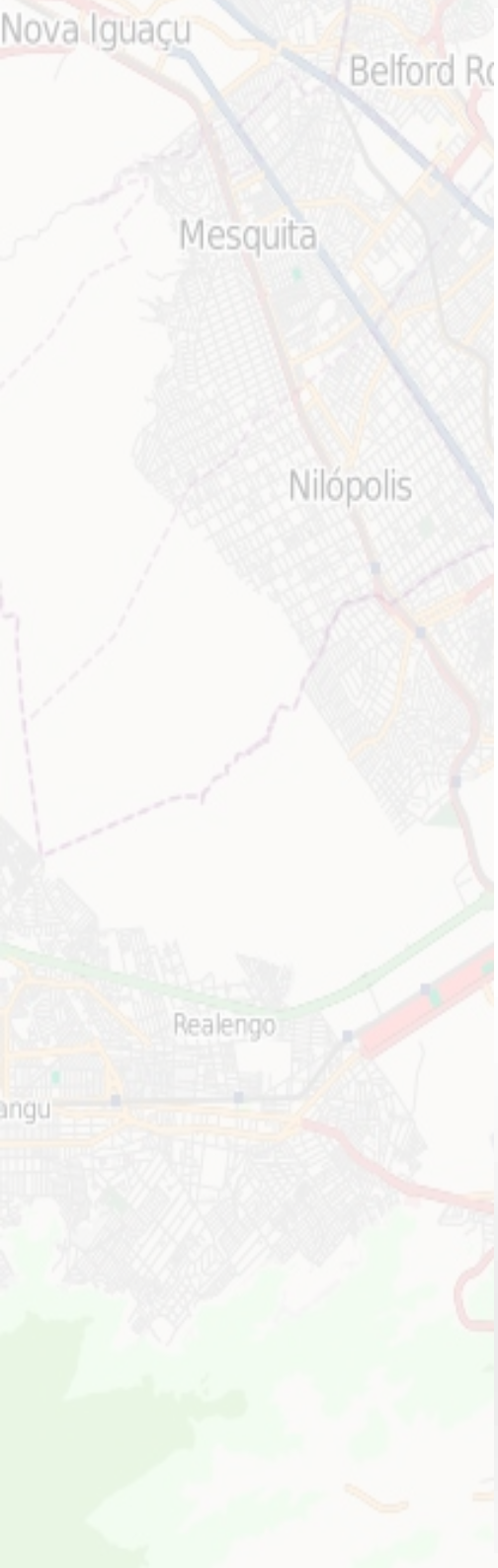
# iHasta Tortas!



# Conclusiones

- OSM es un proyecto global y maduro
- Los datos disponibles son abundantes
- La calidad de los productos generados es muy respetable
- Podemos hacer cartografía colaborativa
- Podemos explotar esa información de múltiples modos





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