Dublin - Open Data & Python

O 158 330

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Ulrich Dangel

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@mr_ud

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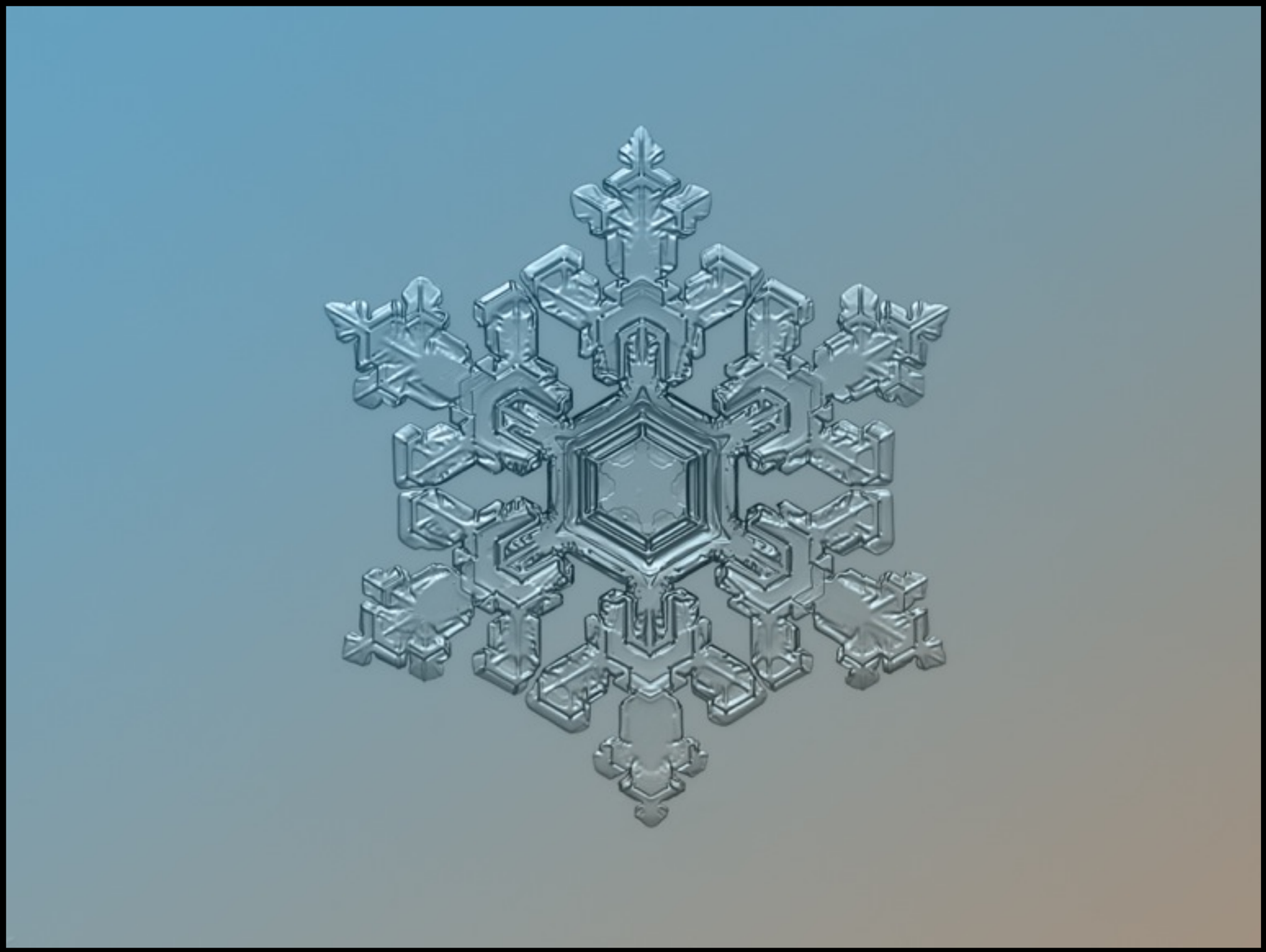
Machine Readable

Free



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“open data is the public library of the 21st century”

“open data is the public library of the 21st century”

OPEN KNOWLEDGE IRELAND

CC BY-SA http://commons.wikimedia.org/wiki/File:DublinMontage.jpg
(c)Tebibyte


Dublinked™

Dublinked™

traffic

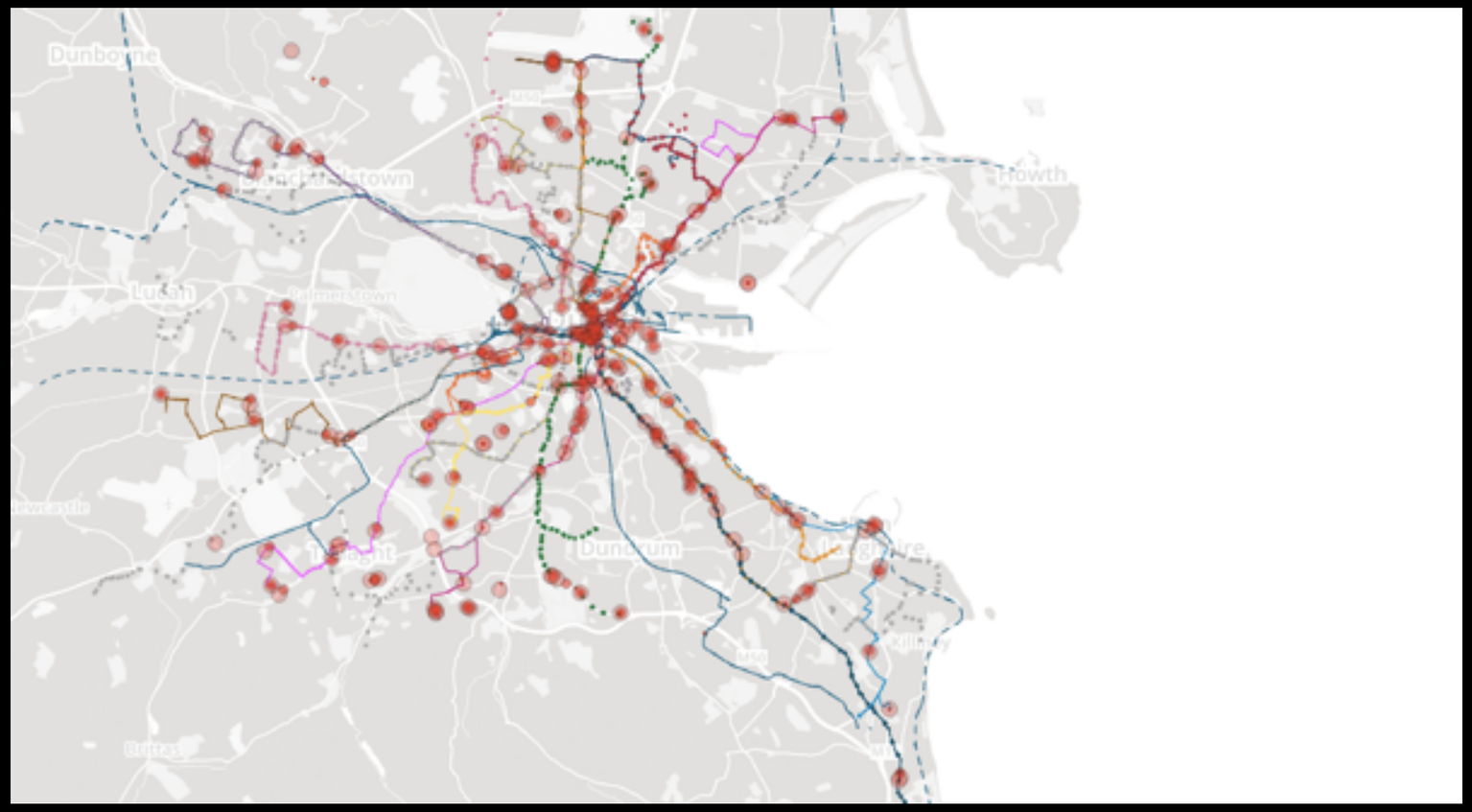
environmental

education

development

TOP 10 MOST VIEWED DATASETS, FOR PAST 30 DAYS

Examples

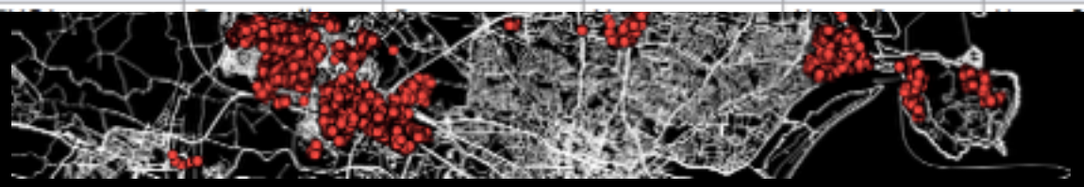


GPS Traces Dublin Bus

Reported Street Defects

Trees (33k)

	ID	Address	Town	Tree_Species	Species_Desc	Common_Name	Age_Desc	Height	Spread	Trunk	Actual_Trunk	Condition
88	5072	Glen Ellan C...	Swords North	FREX	Fraxinus ex...	Common Ash	Newly Planted	5.1-10 met...	3 to 6 metres	11cm to 20...	12cm	Good
89	5076	Glen Ellan C...	Swords North	FREX	Fraxinus ex...	Common Ash	Newly Planted	5.1-10 met...	3 to 6 metres	11cm to 20...	13cm	Good
90	5084	Glen Ellan C...	Swords North	FREX	Fraxinus ex...	Common Ash	Newly Planted	5.1-10 met...	3 to 6 metres	11cm to 20...	11cm	Good
91	5096	Glen Ellan C...	Swords North	FREX	Fraxinus ex...	Common Ash	Newly Planted	5.1-10 met...	3 to 6 metres	11cm to 20...	13cm	Fair - Poor
92	5208	Glen Ellan G...	Swords North	SOAU	Sorbus auc...	Rowan (Mo...	Young	Up to 5 met...	3 to 6 metres	1cm - 10cm	7cm	Good
93	5216	Glen Ellan G...	Swords North	ACPL	Acer platan...	Norway Maple	Young	Up to 5 met...	3 to 6 metres	1cm - 10cm	6cm	Fair
94	5684	South Bank,...	Swords North	ACPL	Acer platan...	Norway Maple	Newly Planted	5.1-10 met...	3 to 6 metres	11cm to 20...	12cm	Fair
95	6024	*NULL*	Swords North	SOAU	Sorbus auc...	Rowan (Mo...	Young	Up to 5 met...	Up to 3 met...	1cm - 10cm	6cm	Good
96	6032	*NULL*	Swords North	SOAU	Sorbus auc...	Rowan (Mo...	Young	Up to 5 met...	Up to 3 met...	1cm - 10cm	6cm	Good
97	6824	Barnewall A...	Donabate P...	PYCA	Pyrus caller...	Pear	Young	Up to 5 met...	Up to 3 met...	1cm - 10cm	4cm	Good



Trees (33k)


Carrier
1:00 PM
ParkYa
Car parking in: Current Location
1100
0
Chelmsford Ave
No Location Info
4778.71km away
St. Assam's Road West
Near: Opposite BOI Car Park
9389.51km away
Raheny Village
Search
Reminders
Favourites
Nearby
Find Parking
Settings
1:01 PM
13:01
15 mins
30 mins
1 hr
3 hrs
5 hrs
Clear
Set Time

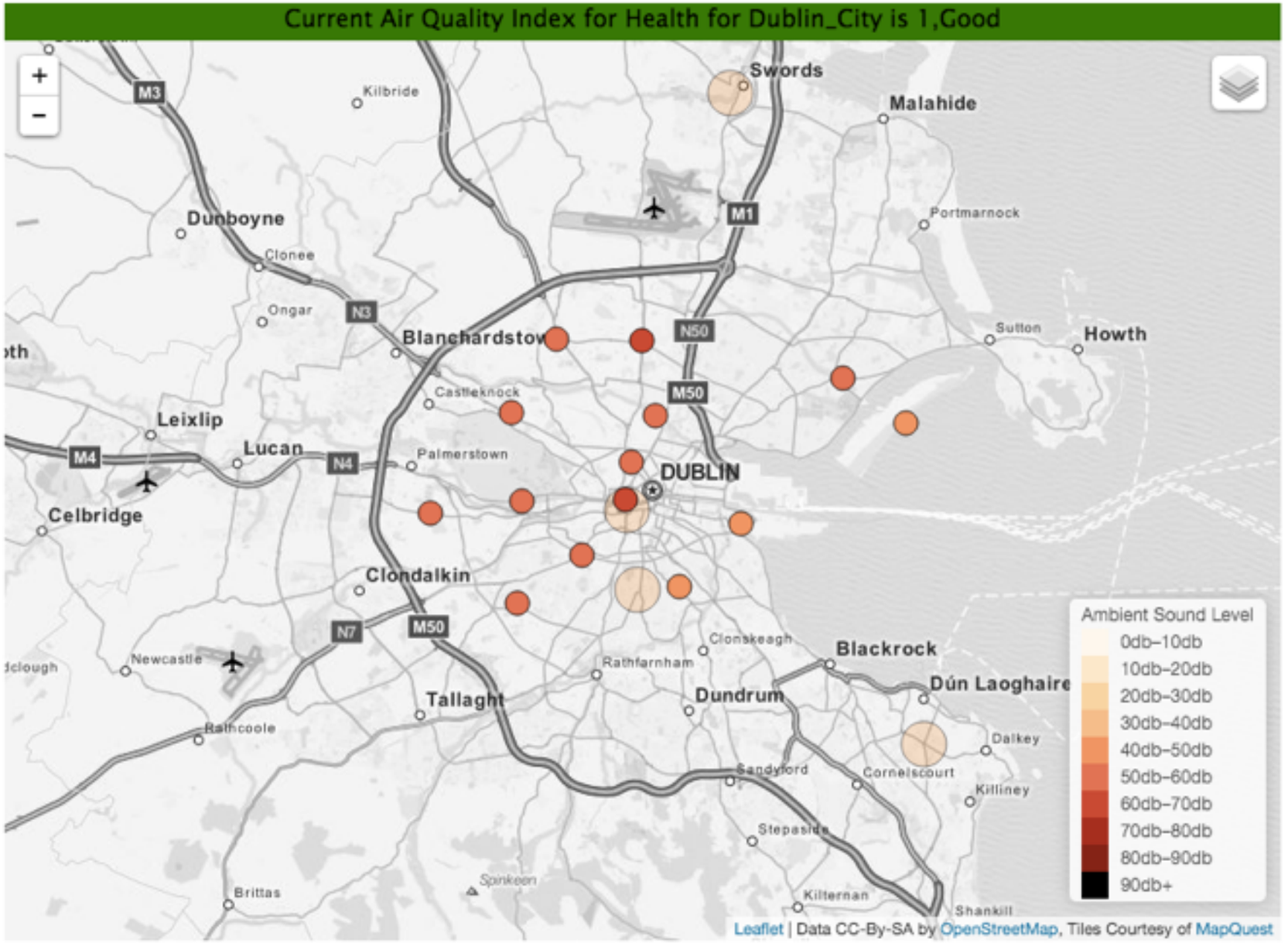
DublinDashboard

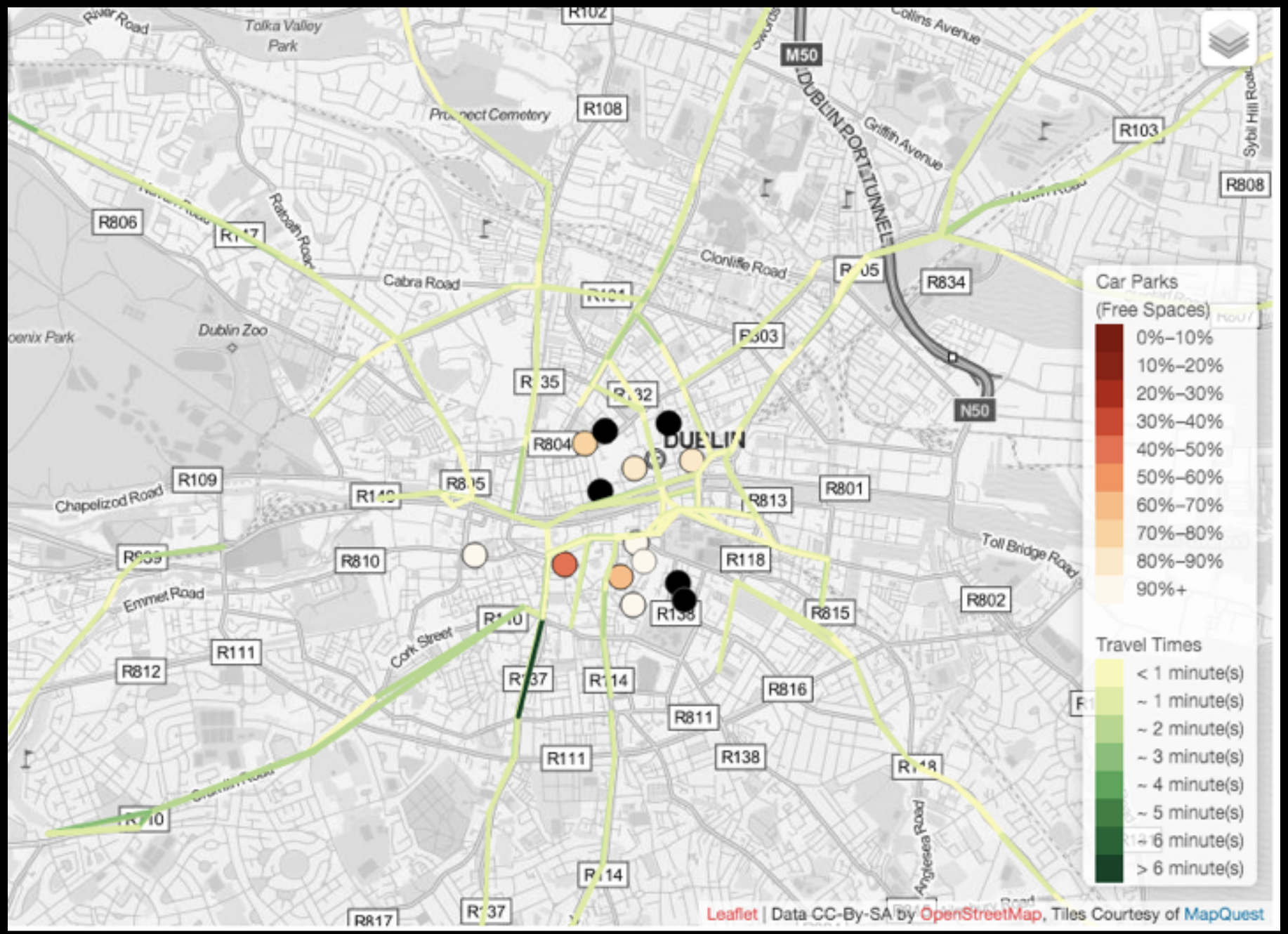
City Intelligence

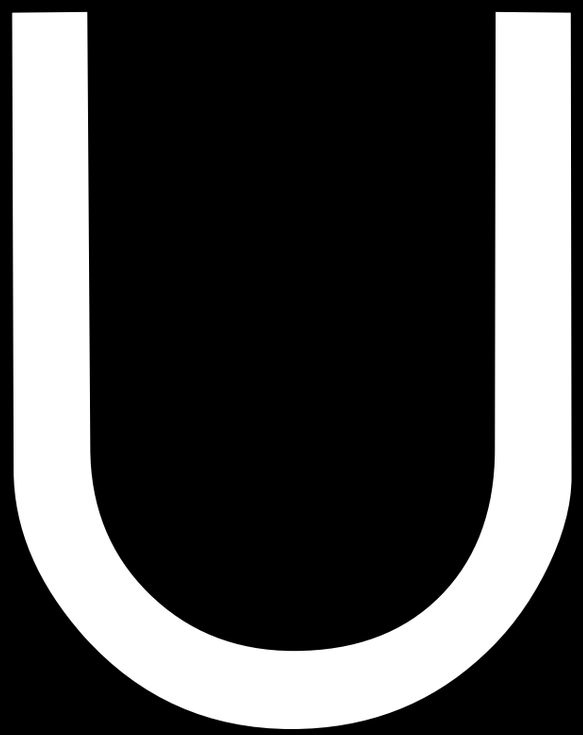
Maynooth University
National University of Ireland Maynooth

Dublin City
Baile Átha Cliath

Current Air Quality Index for Health for Dublin_City is 1,Good




River Road
Tolka Valley Park
R102
M50
Collins Avenue
Prospect Cemetery
R108
DUBLIN PORT TUNNEL
Griffith Avenue
R103
Sybil Hill Road
R808
R806
Ratoath Road
Clonliffe Road
Cabra Road
R834
Car Parks
(Free Spaces)
0%–10%
10%–20%
20%–30%
30%–40%
40%–50%
50%–60%
60%–70%
70%–80%
80%–90%
90%+
Dublin Zoo
R303
N50
R804
DUBLIN
R109
Chapelizod Road
R813
R801
R810
R118
Toll Bridge Road
Emmet Road
R802
R815
R111
R812
Cork Street
R816
R811
R138
R111
Travel Times
< 1 minute(s)
~ 1 minute(s)
~ 2 minute(s)
~ 3 minute(s)
~ 4 minute(s)
~ 5 minute(s)
~ 6 minute(s)
> 6 minute(s)
Leaflet | Data CC-By-SA by OpenStreetMap, Tiles Courtesy of MapQuest

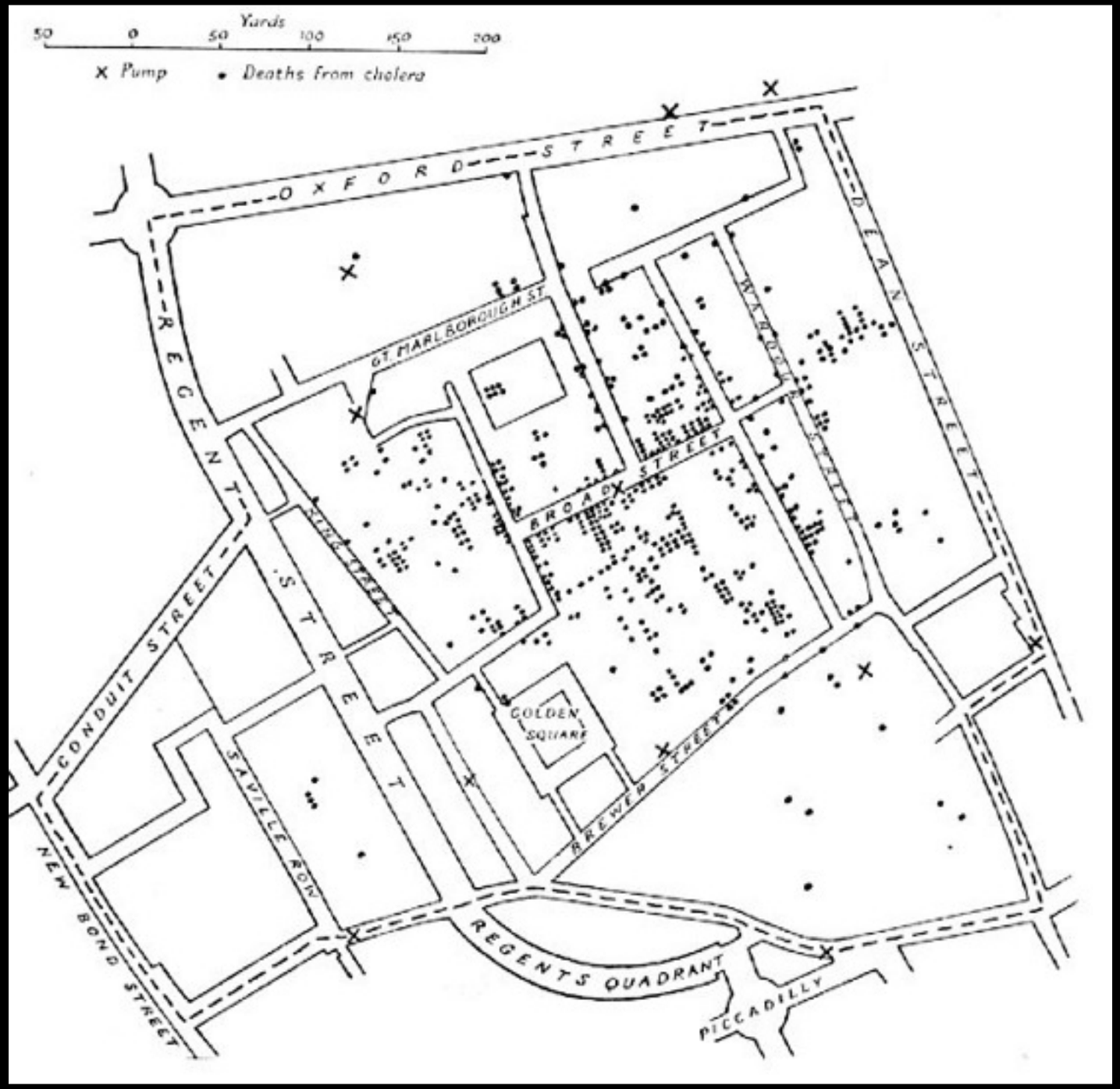


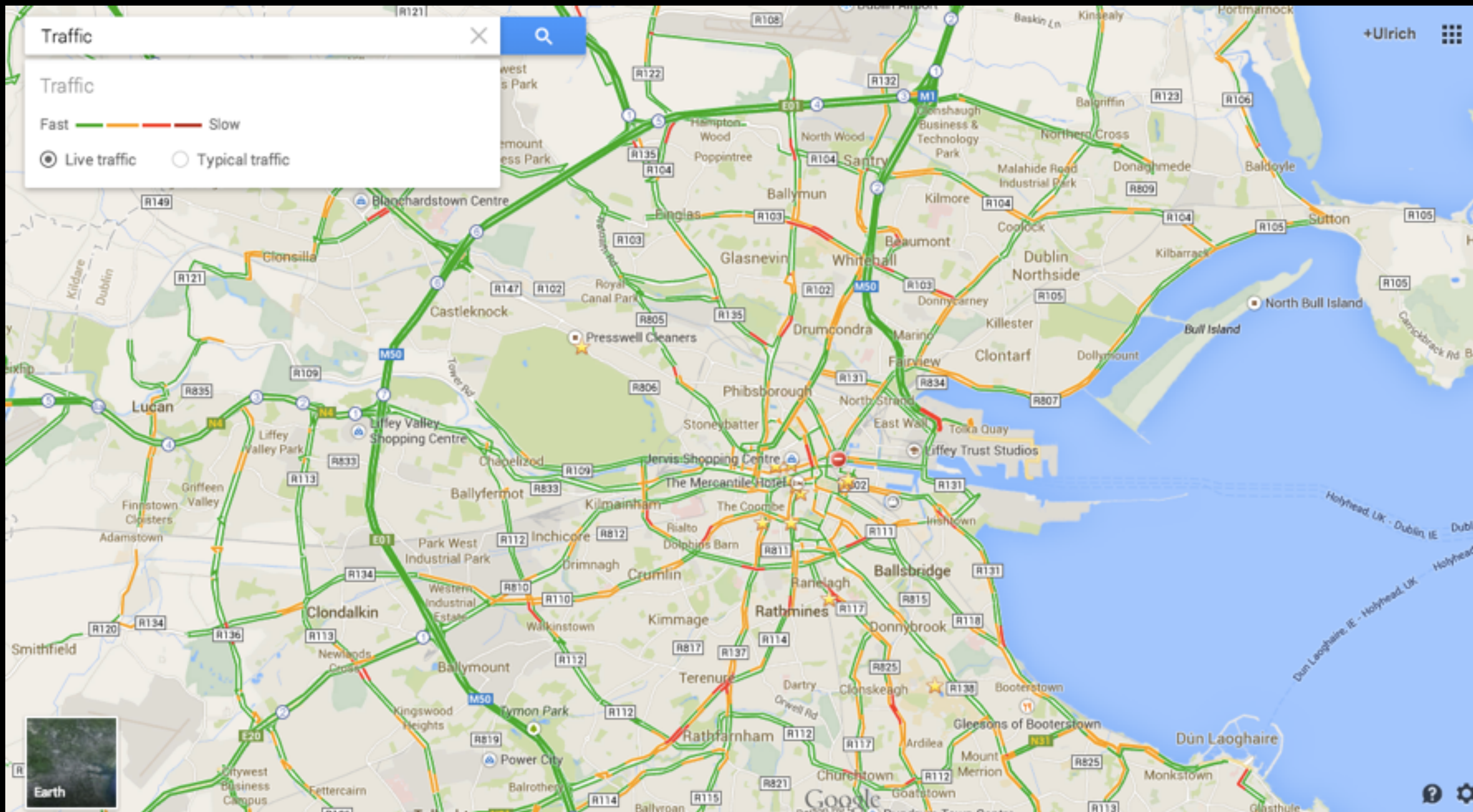
Story Time!

1854

Story Time!

John Snow

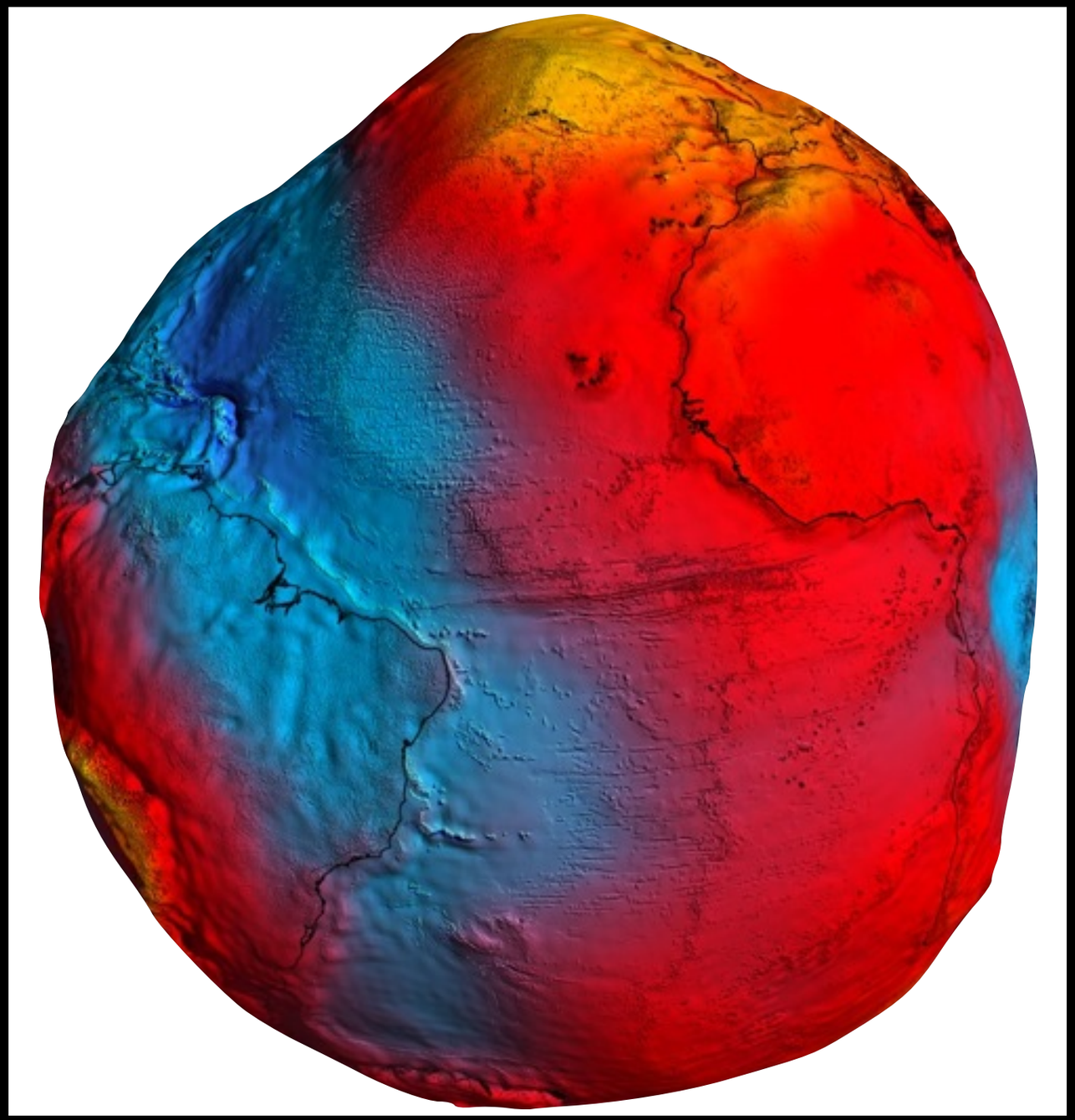

50 0 50 100 150 200 Yards
X Pump
• Deaths from cholera
OXFORD STREET
REGENT STREET
GT MARLBOROUGH ST
BROAD STREET
WARWICK STREET
DEAN STREET
KING STREET
CONDUIT STREET
S T R E E T
SAVILLE ROW
GOLDEN SQUARE
BREWER STREET
NEW BOND STREET
REGENTS QUADRANT
PICCADILLY


Traffic
Traffic
Fast
Slow
Live traffic
Typical traffic
+Ulrich
Earth
Blanchardstown Centre
Clonsilla
Castleknock
Lucan
Liffey Valley Shopping Centre
Clondalkin
Ballyfermot
Chapelizod
Inchicore
Kilmainham
Drimnagh
Crumlin
Kimmage
Terenure
Rathfarnham
Rathmines
Ranelagh
Ballsbridge
Donnybrook
Clonskeagh
Churchtown
Dundrum Town Centre
Goatstown
Mount Merrion
Booterstown
Dún Laoghaire
Monkstown
Glasthule
Tallaght
Tymon Park
Ballymount
Walkinstown
Park West Industrial Park
Western Industrial Estate
Newlands Cross
Kingswood Heights
Citywest Business Campus
Fettercairn
Smithfield
Adamstown
Finnstown Cloisters
Griffeen Valley
Liffey Valley Park
Presswell Cleaners
Phibsborough
Stoneybatter
Jervis Shopping Centre
The Mercantile Hotel
The Coombe
Rialto
Dolphins Barn
Irishtown
Liffey Trust Studios
Tolka Quay
East Wall
North Strand
Fairview
Marino
Clontarf
Dollymount
Killester
Drumcondra
Donnycarney
Whitehall
Beaumont
Glasnevin
Finglas
Royal Canal Park
Ballymun
Santry
North Wood
Hampton Wood
Poppintree
Coolock
Kilmore
Dublin Northside
Kilbarrack
Donaghmede
Baldoyle
Sutton
Northern Cross
Malahide Road Industrial Park
Balgriffin
Kinsealy
Portmarnock
North Bull Island
Bull Island
Dartry
Ardilea
Gleesons of Booterstown
Power City
Balrothery
Ballyroan
Holyhead, UK - Dublin, IE
Dun Laoghaire, IE - Holyhead, UK
Google


0011010

https://www.flickr.com/photos/11186622@N00/229903286/ © CC-BY-NC Rohit Mattoo

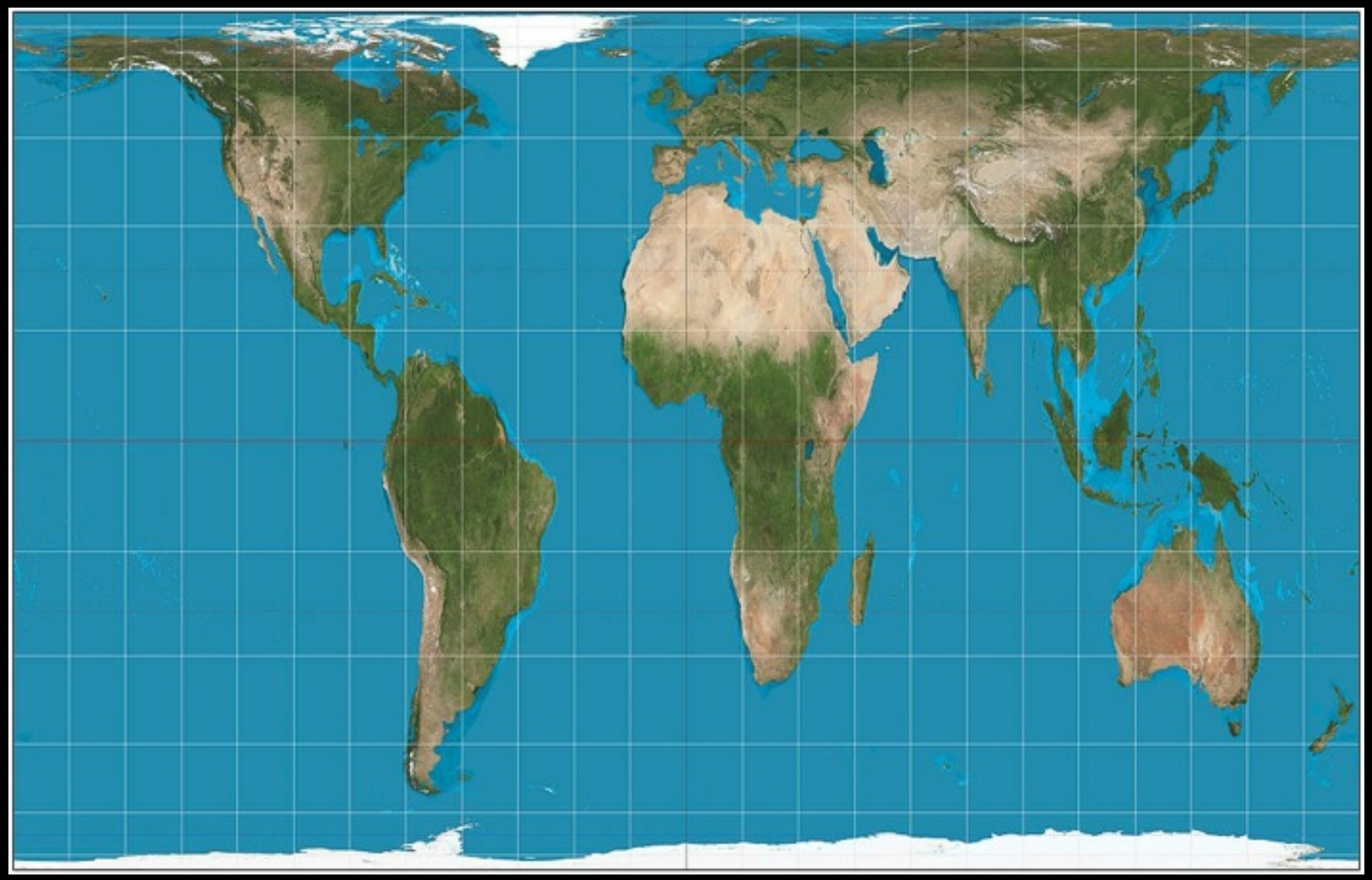
http://www.flickr.com/photos/24662369@N07/4392965590/



http://www.esa.int/esaCP/SEM1AK6UPLG_index_0.html

WGS 84

Google Maps



Gall Peter Projection

Gall-Peters Projection © CC-BY-SA Strebe

O 158 330

Irish Grid Reference System
Somewhere in Dublin

A	B	C	D	E
F	G	H	J	K
L	M	N	O	P
Q	R	S	T	U
V	W	X	Y	Z

(c)Telford

715830,

734697

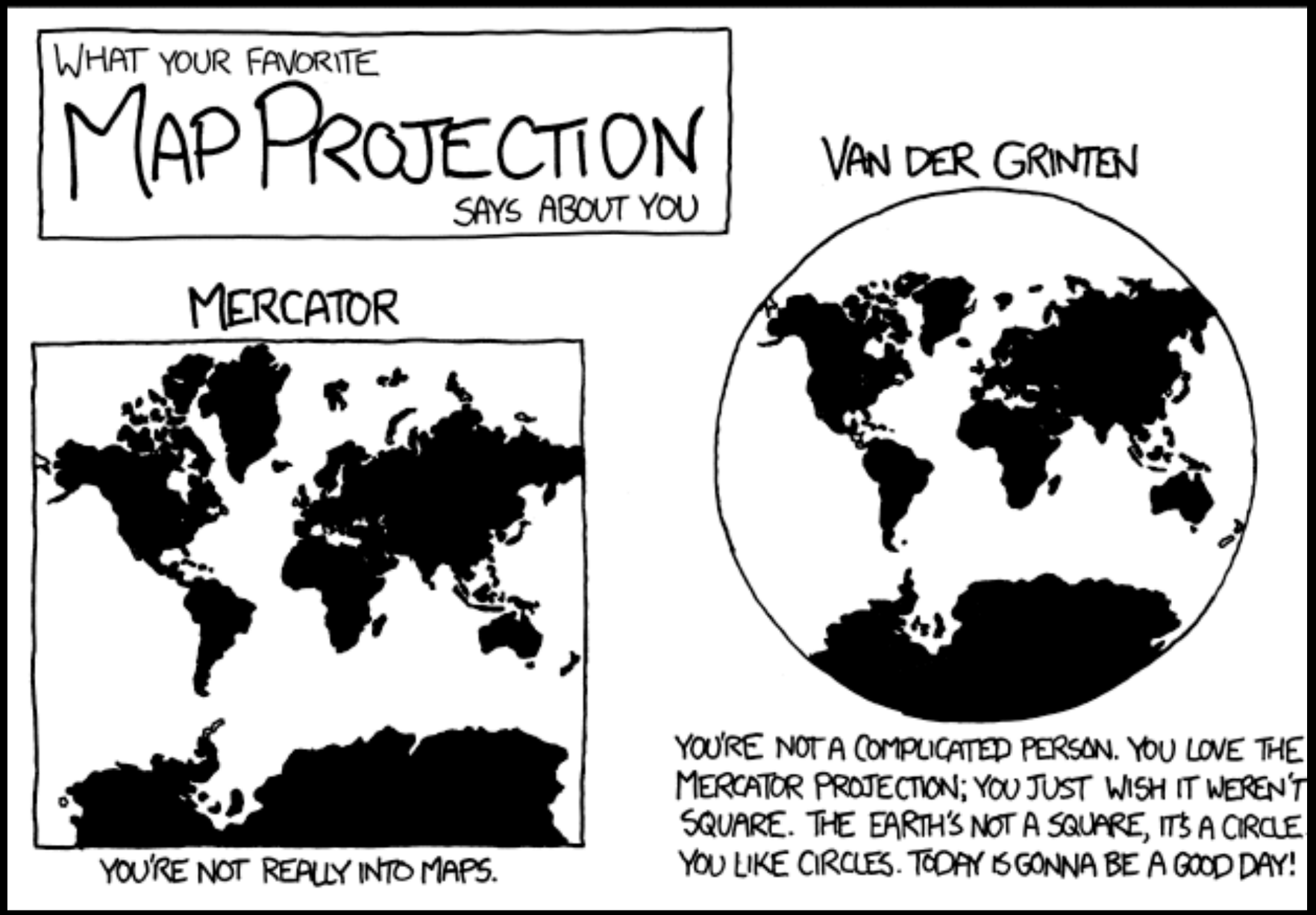
Irish Transverse Mercator

715830,

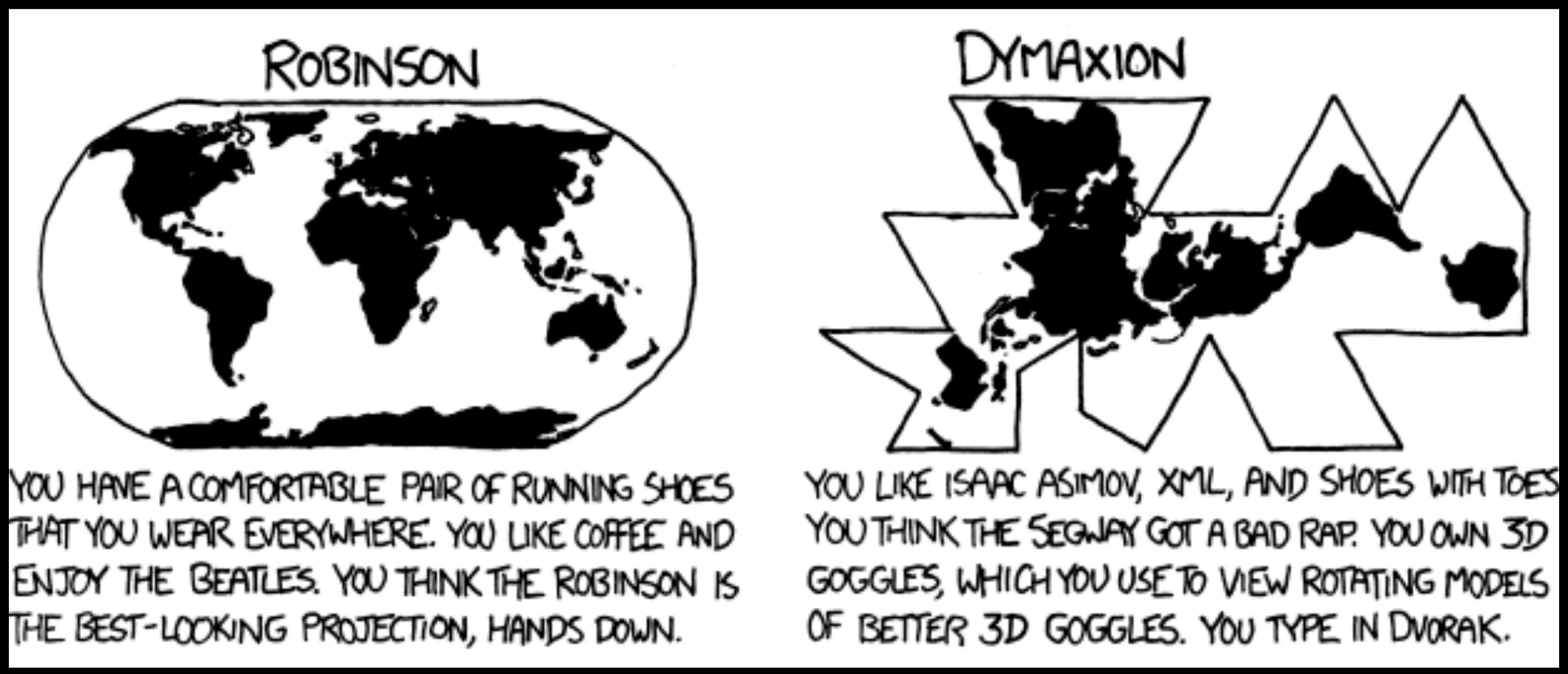
734697

```
ireland=# SELECT COUNT(*) from
ireland-# spatial_ref_sys;
```

```
ireland=# SELECT COUNT(*) from
ireland-# spatial_ref_sys;
 count
-------
  3749
(1 row)
```



http://xkcd.com/977/



http://xkcd.com/977/

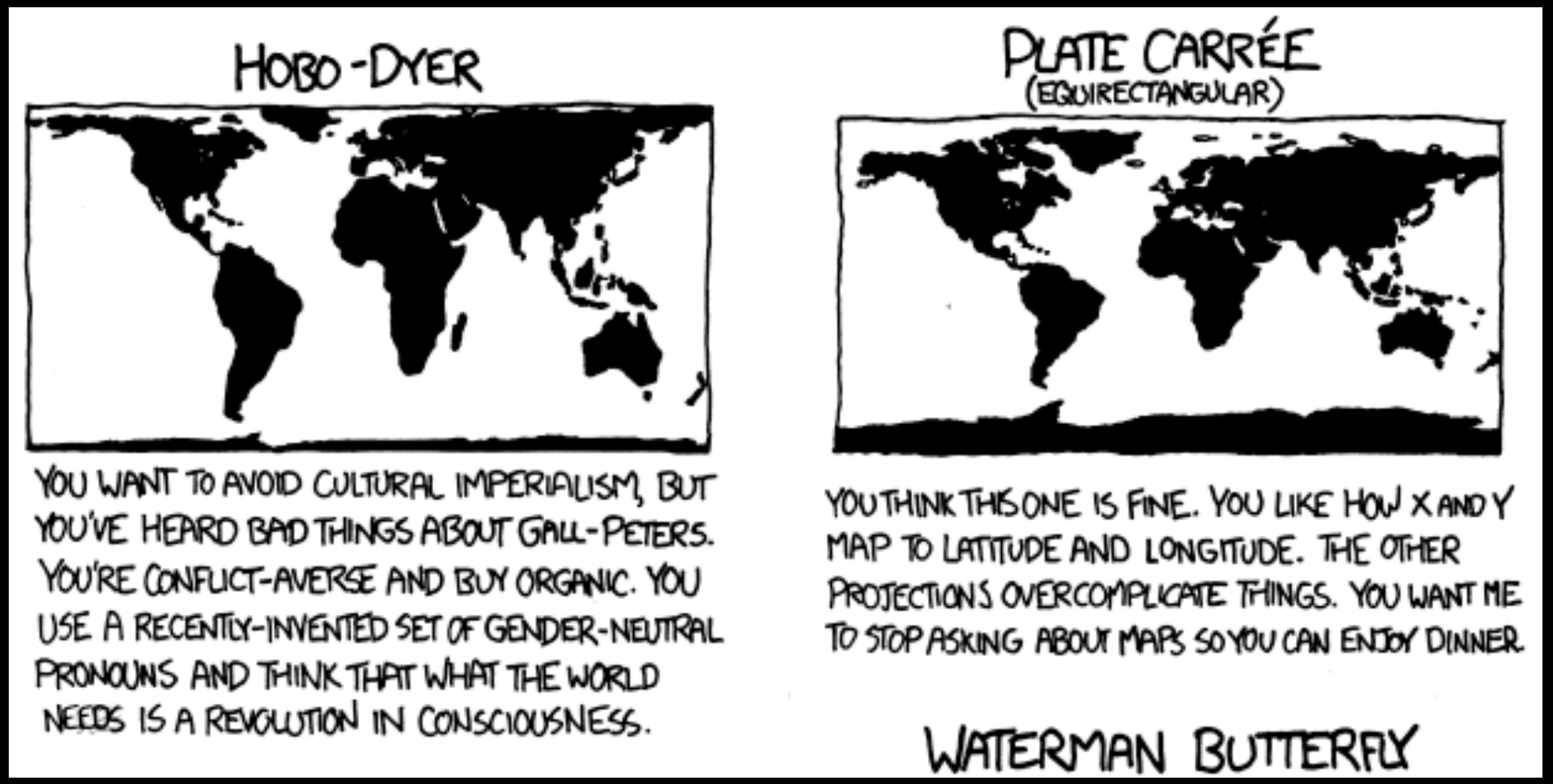
WINKEL-TRIPEL

NATIONAL GEOGRAPHIC ADOPTED THE WINKEL-TRIPEL IN 1998, BUT YOU'VE BEEN A W-T FAN SINCE *LONG* BEFORE "NAT GEO" SHOWED UP. YOU'RE WORRIED IT'S GETTING PLAYED OUT, AND ARE THINKING OF SWITCHING TO THE KAVRAYSKIY. YOU ONCE LEFT A PARTY IN DISGUST WHEN A GUEST SHOWED UP WEARING SHOES WITH TOES. YOUR FAVORITE MUSICAL GENRE IS "POST-".

GOODE HOMOLOSINE

THEY SAY MAPPING THE EARTH ON A 2D SURFACE IS LIKE FLATTENING AN ORANGE PEEL, WHICH SEEMS EASY ENOUGH TO YOU. YOU LIKE EASY SOLUTIONS. YOU THINK WE WOULDN'T HAVE SO MANY PROBLEMS IF WE'D JUST ELECT *NORMAL* PEOPLE TO CONGRESS INSTEAD OF POLITICIANS. YOU THINK AIRLINES SHOULD JUST BUY FOOD FROM THE RESTAURANTS NEAR THE GATES AND SERVE *THAT* ON BOARD. YOU CHANGE YOUR CAR'S OIL, BUT SECRETLY WONDER IF YOU REALLY *NEED* TO.

http://xkcd.com/977/



http://xkcd.com/977/

A GLOBE!

YES, YOU'RE VERY CLEVER.

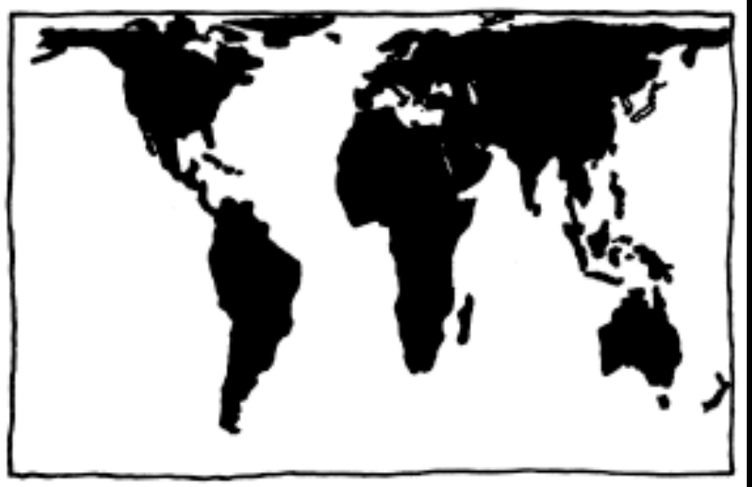
WATERMAN BUTTERFLY

REALLY? YOU KNOW THE WATERMAN? HAVE YOU SEEN THE 1909 CAHILL MAP IT'S BASED— ...YOU HAVE A FRAMED REPRODUCTION AT HOME?! WHOA. ...LISTEN, FORGET THESE QUESTIONS. ARE YOU DOING ANYTHING TONIGHT?

PEIRCE QUINCUNCIAL

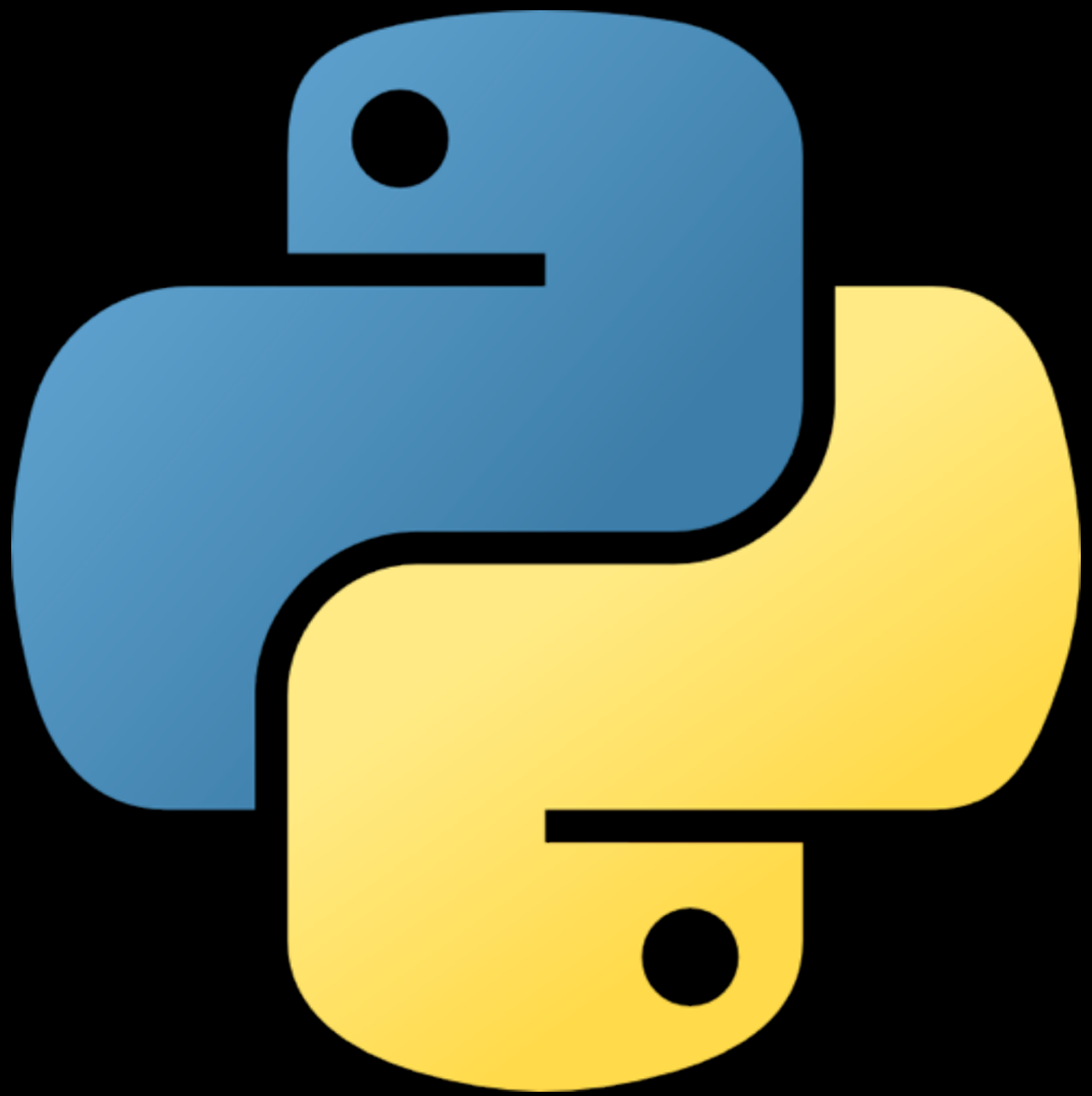
YOU THINK THAT WHEN WE LOOK AT A MAP, WHAT WE REALLY SEE IS OURSELVES. AFTER YOU FIRST SAW *INCEPTION*, YOU SAT SILENT IN THE THEATER FOR SIX HOURS. IT FREAKS YOU OUT TO REALIZE THAT EVERYONE AROUND YOU HAS A SKELETON INSIDE THEM. YOU *HAVE* REALLY LOOKED AT YOUR HANDS.

GALL-PETERS



I *HATE* YOU.

http://xkcd.com/977/



ArcGIS

Django

Shapely

shp files kml postgis

wms raster

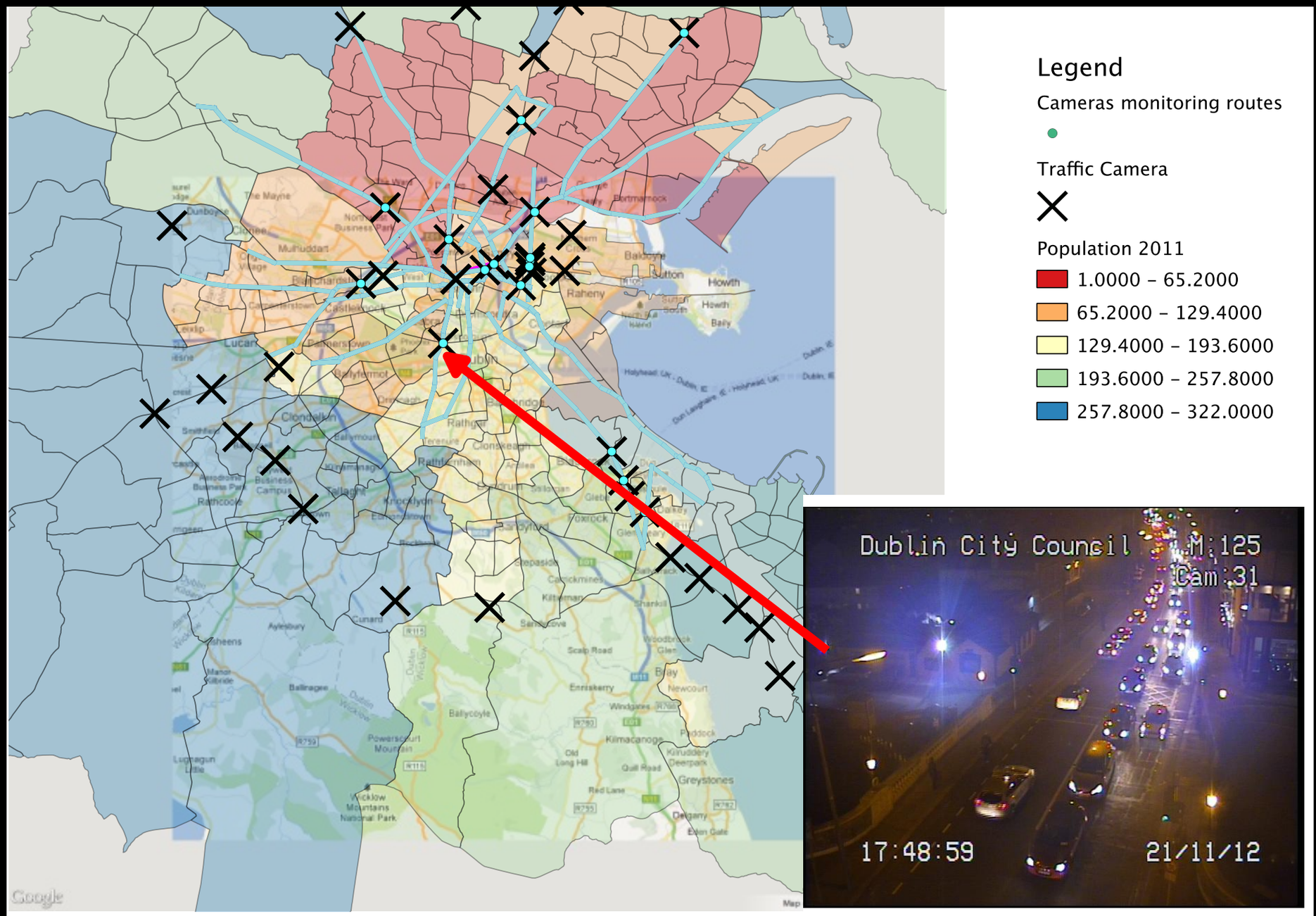
csv sqlite mssql

Phoenix Park
Navan Road
Blackhorse Avenue
Blackhorse Avenue
Cabra Road
Clonliffe Road
Howth Road
Clontarf Road
Clontarf Road
Bull Island
East Wall Road
Chapelizod Road
Chapelizod Bypass
Emmet Road
Liffey
Toll Bridge Road
Cork Street
Davitt Road
Naas Road
Crumlin Road
Grove Road
Anglesea Road
Ailesbury Road
Strand Road
Kimmage Road Lower
Rathgar Road
Milltown Road

```
Route,Link,Direction,TCS1,TCS2,WKT
1,1,1,6006,2031,LINESTRING(321909 228333 comma 321106 228863)
1,1,2,2031,6006,LINESTRING(321106 228863 comma 321909 228333)
1,2,1,2031,6003,LINESTRING(321106 228863 comma 320545 229272)
1,2,2,6003,2031,LINESTRING(320545 229272 comma 321106 228863)
```

TRIPS

Santry Avenue
Glasnevin Avenue
Collins Avenue
Tonlegee Road
Grange Road
River Road
Navan Road
Tolka Valley Road
Ratoath Road
Finglas Road
Howth Road
Saint Anne's Park
Bull Island Nature Reserve
Clontarf Road
Cabra Road
Blackhorse Avenue
Phoenix Park
Lucan Road
Palmerston Bypass
Chapelizod Road
Chapelizod Bypass
Ballyfermot Road
Emmet Road
Davitt Road
Nangor Road
Naas Road
Crumlin Road
Grove Road
Cork Street
Liffey
Ailesbury Road
Kimmage Road Lower
Rathgar Road
Milltown Road
Foster Avenue
Dundrum Road
Goatstown Road
Stillorgan Park
Dodder Park Road
Templeogue Road
Tymon Park
Corkagh Park
Tallaght Bypass
Firhouse Road
Ballyroan Road
Taylors Lane
Butterfield Avenue
Luttrelstown Golf Course

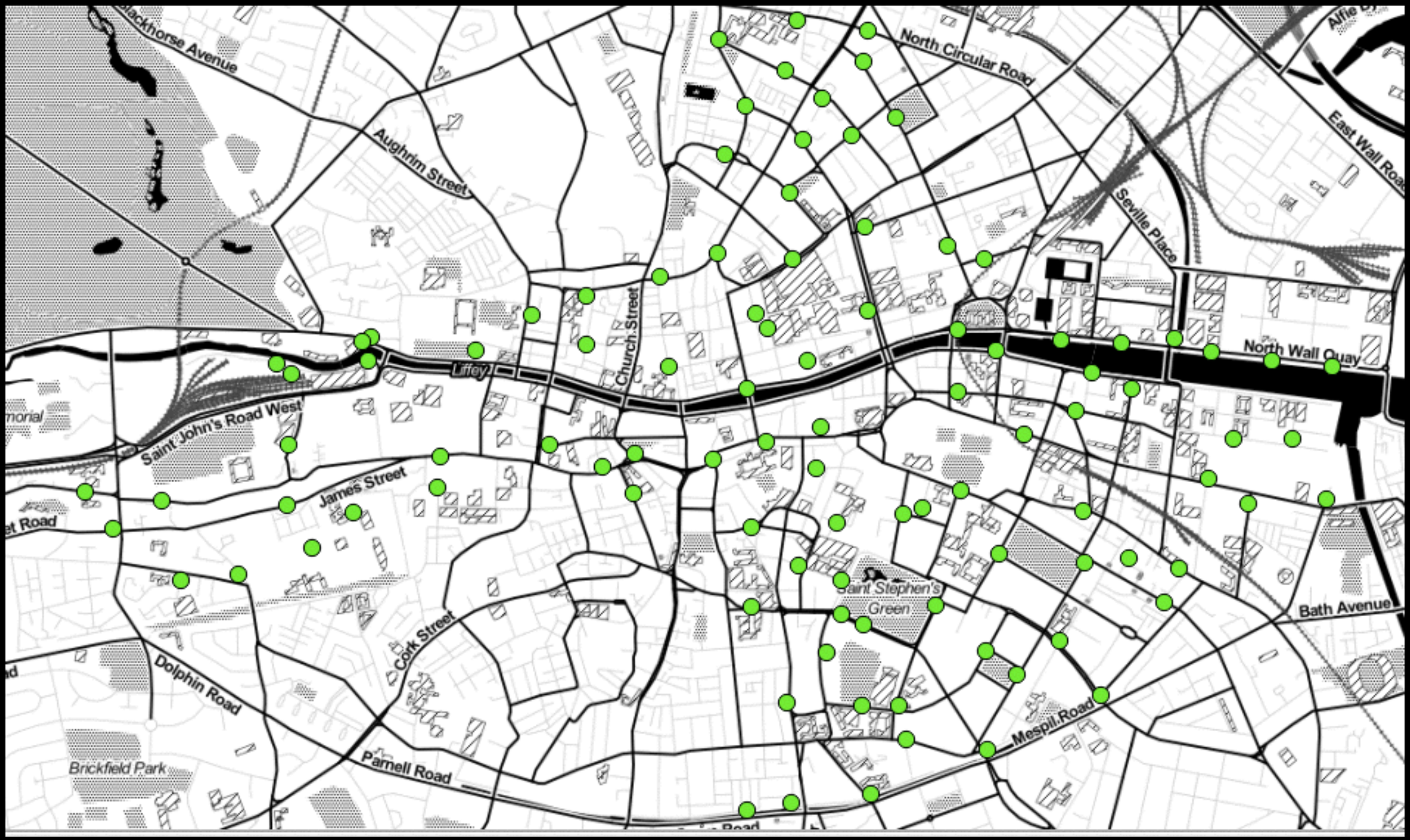

Legend
Cameras monitoring routes
Traffic Camera
Population 2011
1.0000 – 65.2000
65.2000 – 129.4000
129.4000 – 193.6000
193.6000 – 257.8000
257.8000 – 322.0000
Dublin City Council
M:125
Cam:31
17:48:59
21/11/12
Google

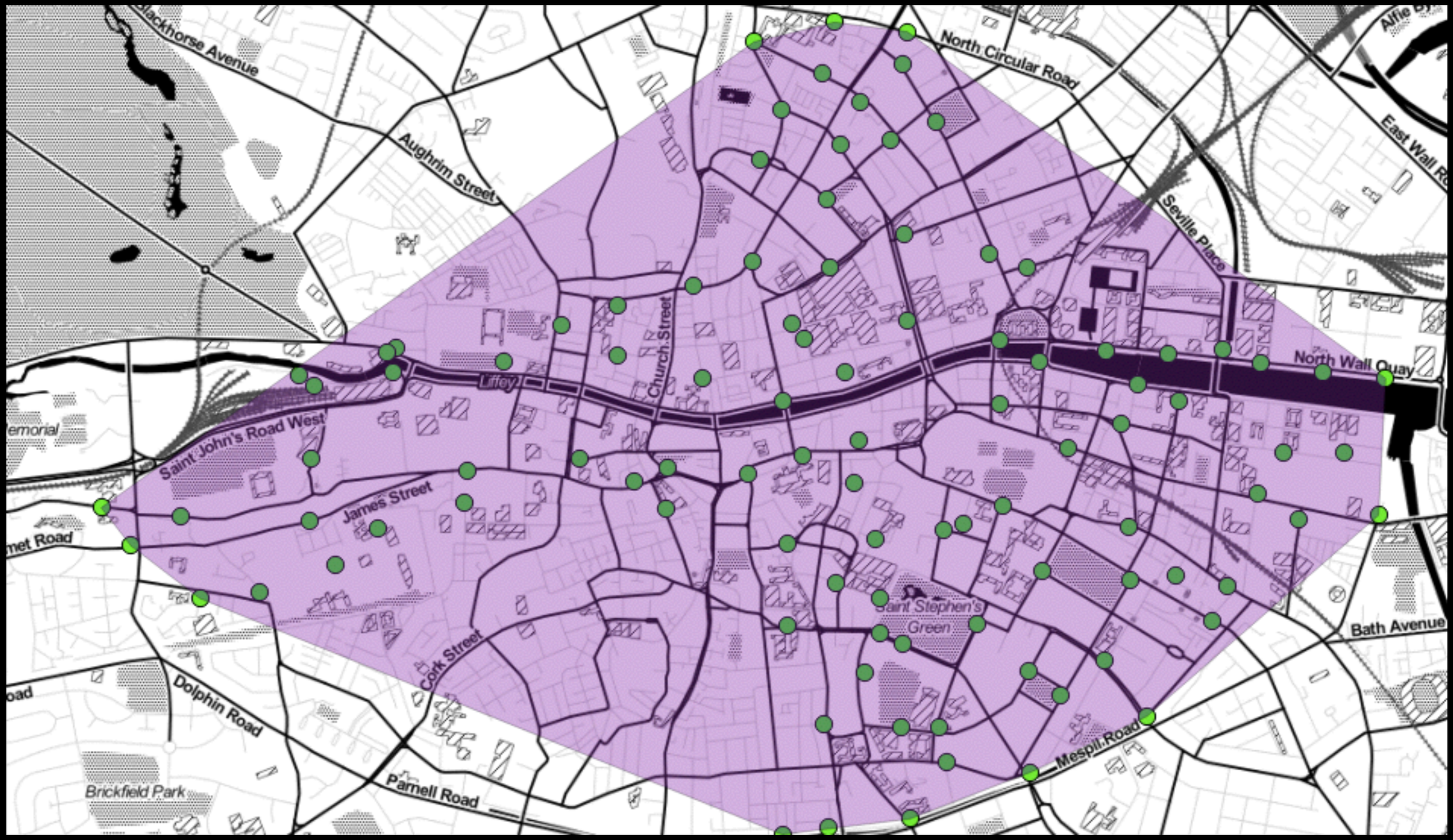
```
QgsApplication.setPrefixPath("/Applications/QGIS.app/Contents/Resources/",
QgsApplication.initQgis()
layer = QgsVectorLayer(sys.argv[1], "trips routes", "ogr")

```

```
features = layer.getFeatures()
for feature in features:
  geom = feature.geometry()
  attributes = feature.attributes()
  if attributes[2] == 2:  # second direction
    continue
  route_length[attributes[0]] += geom.length()

for key in route_length:
  print "Route {0} - length: {1}".format(key, route_length[key])
```

```
url = QUrl.fromLocalFile("./Dublin.csv")
url.addQueryItem('xField','Longitude')
url.addQueryItem('yField','Latitude')
layer_uri=unicode(url.toEncoded())

layer = QgsVectorLayer(layer_uri, "dublin bikes", "delimitedtext")

if not layer.isValid():
  print "Layer failed to load!"

crs = QgsCoordinateReferenceSystem(4326,
    QgsCoordinateReferenceSystem.PostgisCrsId)
irish = QgsCoordinateReferenceSystem(2157,
    QgsCoordinateReferenceSystem.PostgisCrsId)
xform = QgsCoordinateTransform(crs, irish)

features = layer.getFeatures()
for feature in features:
    geom = feature.geometry()
    geom.transform(xform)
    print "{0} - {1}".format(feature.attributes(), geom.asPoint())
```


Coca-Cola
zero
dublinbikes
db


Blackhorse Avenue
Aughrim Street
North Circular Road
East Wall Road
Seville Place
Church Street
Liffey
North Wall Quay
Saint John's Road West
James's Street
Cork Street
Dolphin Road
Brickfield Park
Parnell Road
Saint Stephen's Green
Bath Avenue
Mespil Road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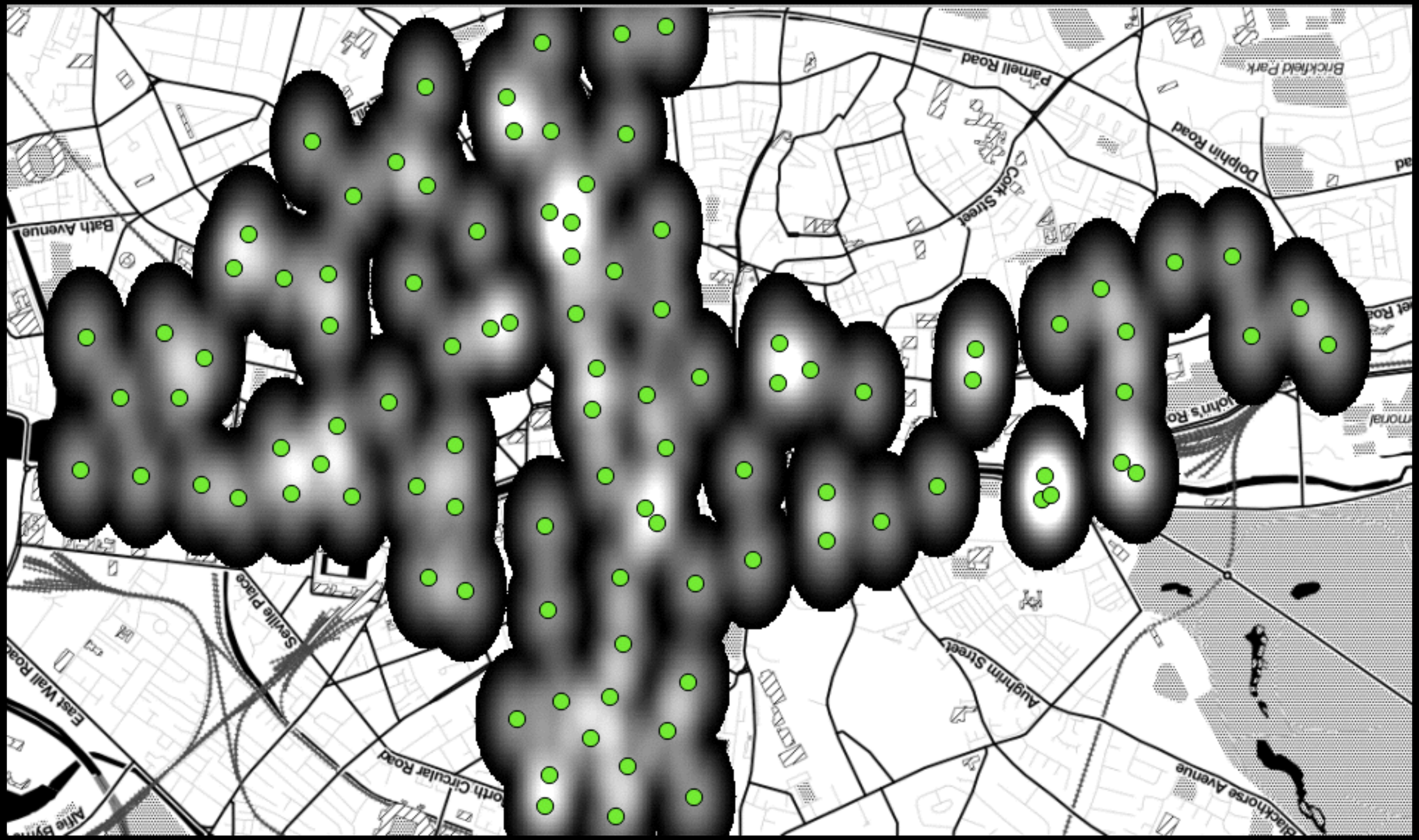
Aughrim Street
North Circular Road
Alfie Byrne
East Wall Road
Seville Place
North Wall Quay
Liffey
Church Street
Saint John's Road West
James Street
met Road
Cork Street
Saint Stephen's Green
Bath Avenue
oad
Dolphin Road
Brickfield Park
Parnell Road
Mespil Road


Parnell Road
Brickfield Park
Dolphin Road
Cork Street
Bath Avenue
Sevville Place
East Wall Road
North Circular Road
Aughrim Street
Blackhorse Avenue

Semantics

```python
#!/usr/bin/env python
# -*- coding: utf-8 -*-
import sparql

query = """
PREFIX : <http://dbpedia.org/resource/>
PREFIX dbo: <http://dbpedia.org/ontology/>

SELECT * WHERE {
 ?x rdfs:label "Dublin"@en.
 ?x dbo:populationTotal ?pop.
}
"""

result = sparql.query('http://dbpedia-live.openlinksw.com/sparql/', query)
for row in result:
    values = sparql.unpack_row(row)
    print "City: {0} - population {1}".format(values[0], values[1])
```

```python
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```

City: … /Dublin - population 527612

Dublin Bus

```python
#!/usr/bin/env python
from suds.client import Client
from suds.xsd.doctor import ImportDoctor, Import
from collections import namedtuple

url = 'http://rtpi.dublinbus.biznetservers.com/DublinBusRTPIService.asmx?WSDL'
imp = Import('http://www.w3.org/2001/XMLSchema')
imp.filter.add('http://dublinbus.ie/')

d = ImportDoctor(imp)
client = Client(url, doctor=d)
result = client.service.GetAllDestinations()

for dest in result.Destinations.Destination:
    print "Bus stop {0} - Position: {1},{2}".format(dest.StopNumber, dest.Latitude, dest.Longitude)
```

```
Bus stop 7516 - Position: 53.402073,-6.17168
Bus stop 7522 - Position: 53.188714,-6.121523
Bus stop 7550 - Position: 53.273534,-6.380582
```

?

Dublin!

Python

qgis

gis

Questions?