

# THE RELATIONSHIP BETWEEN DISTRIBUTION OF LITTER BINS AND TRAFFIC VOLUME IN DUBLIN

CS621B SPATIAL DATABASES PROJECT  
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ORDINARY BUT IMPORTANT

HYGIENE

HEALTHIER

CLEAN



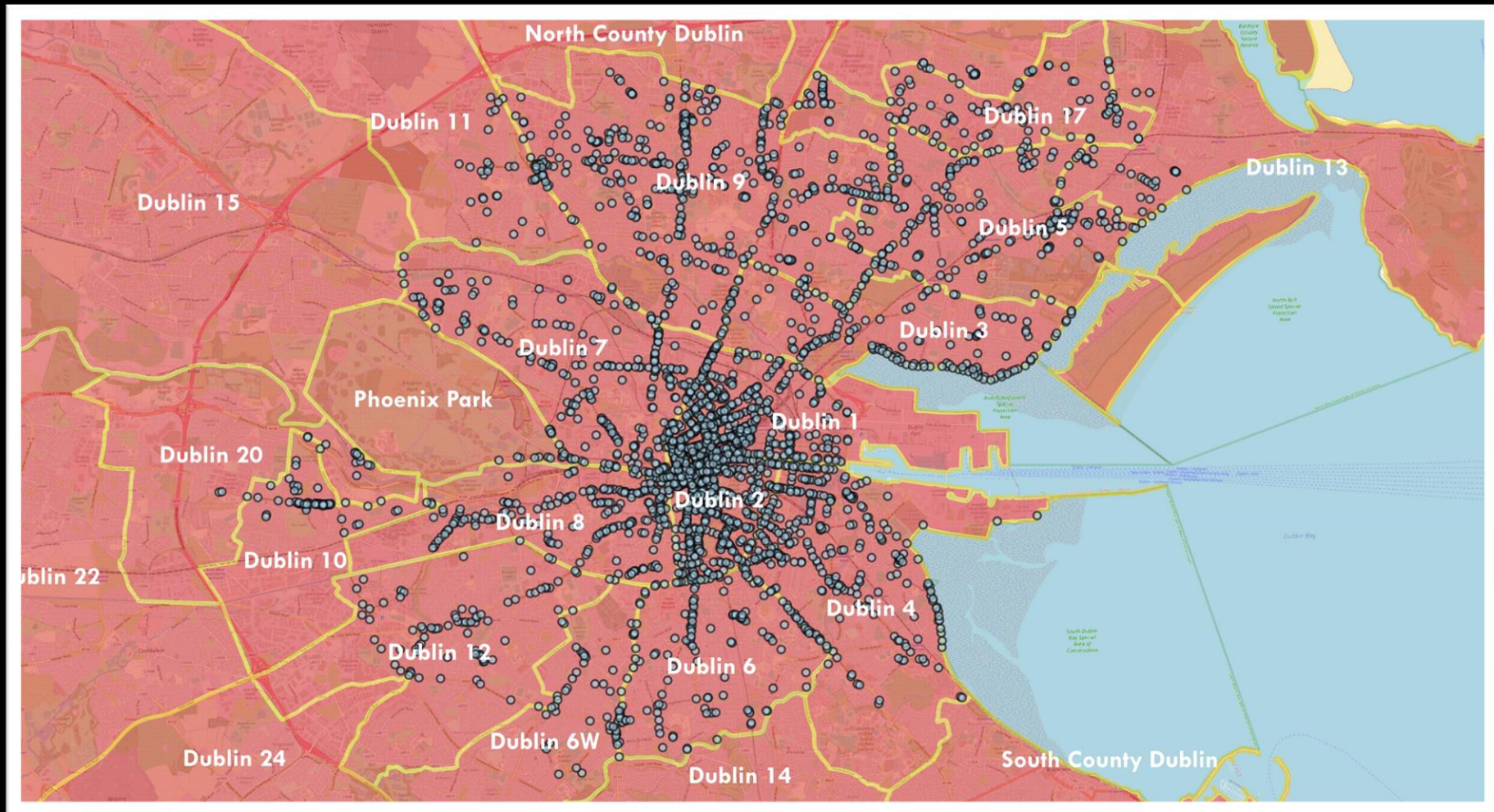


# Data Files

File name	Number of objects	CRS
Dublin postcode(.shp)	25 objects	EPSG 29902 (meter-base)
Dublin public bins (.geojson)	3172 objects	EPSG 4326
Dublin traffic volume(.csv) ( 01/06/2020)	823 objects	EPSG4326
Dublin traffic locations(.csv)	854 objects	EPSG 29902



# Distribution of bins in Dublin postcode area



## Query 1:

```
Alter table dublinpostcode add column numberpublicbins INTEGER DEFAULT 0;
```

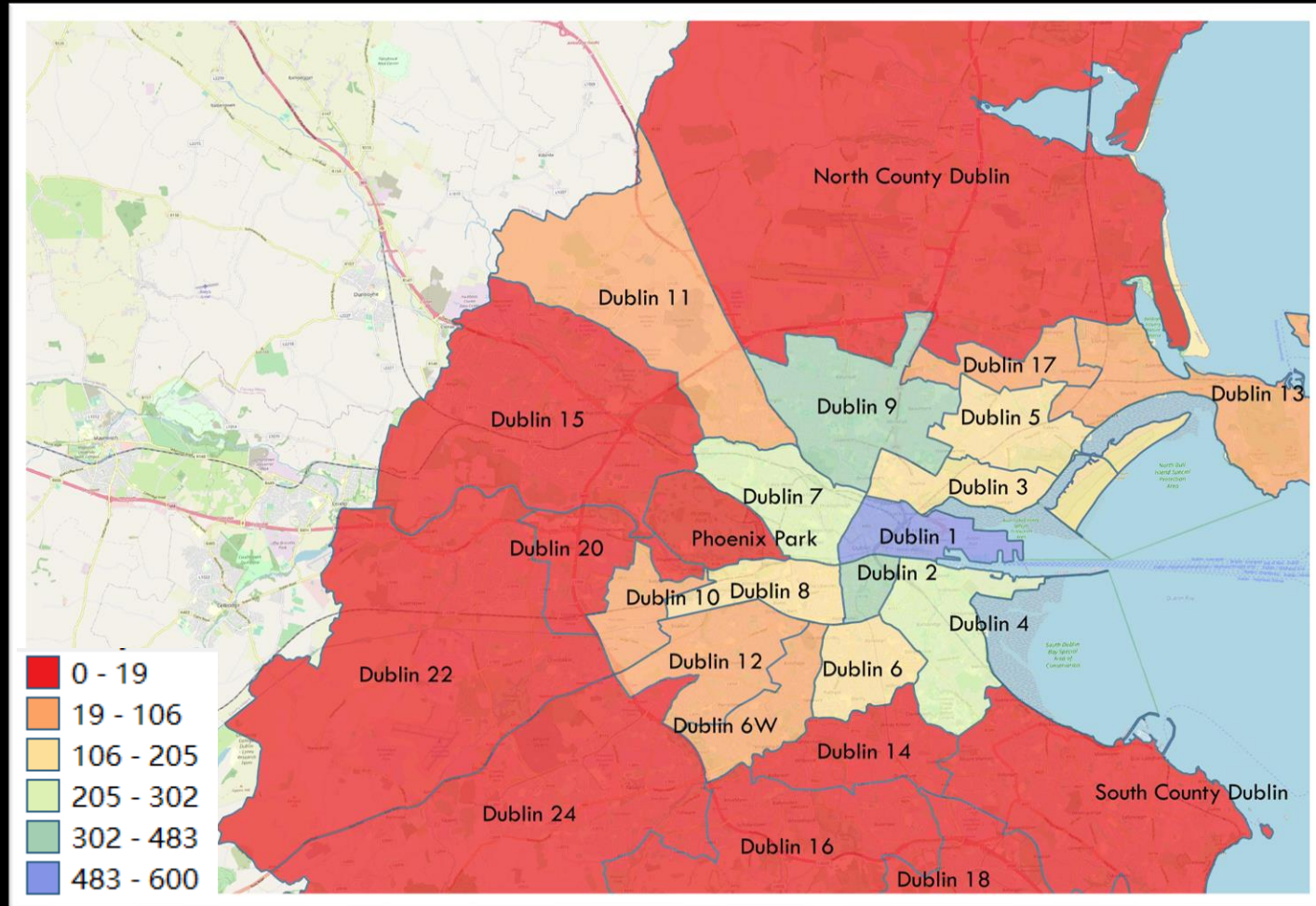
```
-----count number of bins in each postcode
```

```
with bins as (  
    select p.postcode, count(*) as numberofbins from dublinpostcode as p, dublinpublicbin as b  
    where st_contains(st_transform(p.pgeom, 4326), b.bgeom)  
    group by p.postcode  
)  
update dublinpostcode  
set numberpublicbins = bins.numberofbins  
from bins  
where dublinpostcode.postcode = bins.postcode
```





# Amount of bins in Dublin postcode area



## Query 2:

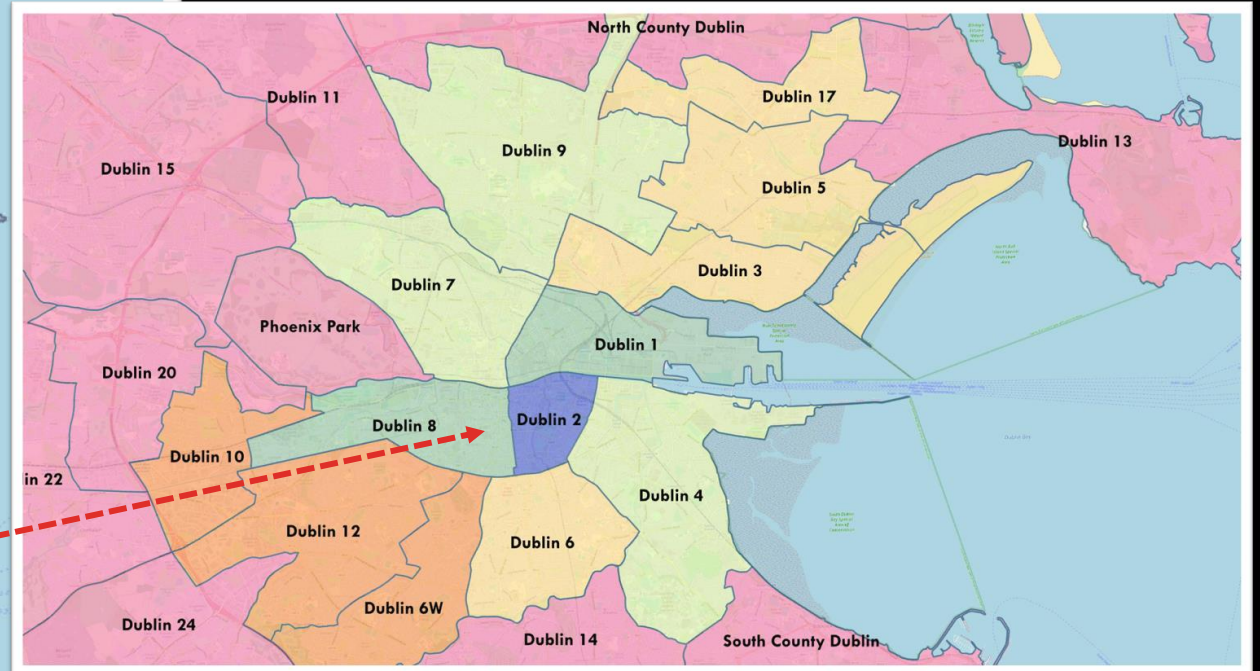
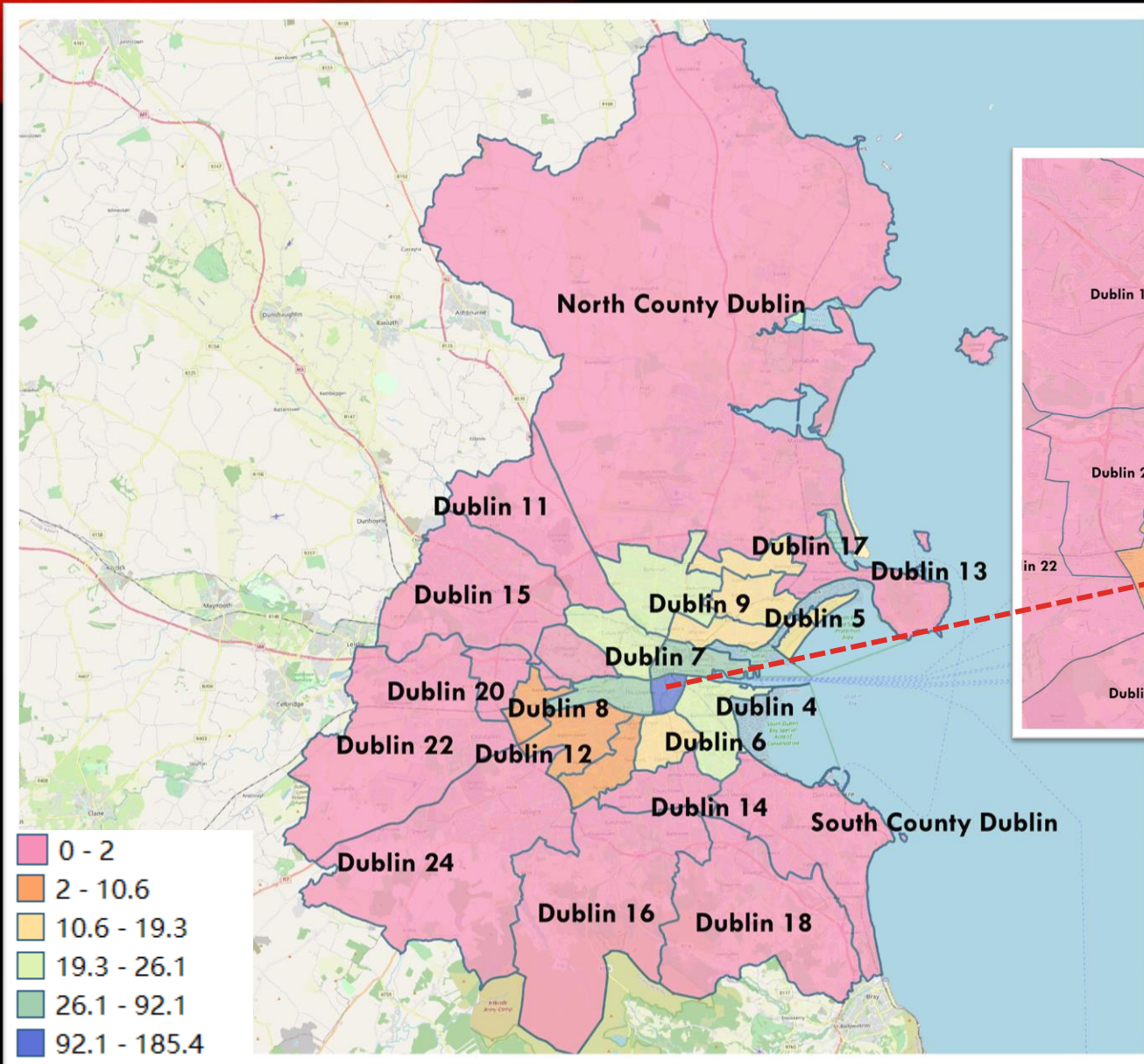
```
Alter table dublinpostcode add column densitypublicbins float(3) DEFAULT 0.0;

with dbins as (
    select p.postcode, p.numberpublicbins/(st_area(p.pgeom)/1000000) as densityofbins from dublinpostcode as p,
    dublinpublicbin as b
    where st_contains(st_transform(p.pgeom, 4326), b.bgeom)
)
update dublinpostcode
set densitypublicbins = dbins.densityofbins
from dbins
where dublinpostcode.postcode = dbins.postcode
```





# Density of bins in Dublin city area(per km<sup>2</sup>)





## Query 3 :

```
DROP TABLE IF EXISTS dublintrafficvolume;  
create table dublintrafficvolume(  
    Year numeric,  
    Month numeric,  
    Day numeric,  
    Site numeric,  
    SumOfSumVolume numeric  
);  
  
select * from dublintrafficvolume  
  
select site, sum(sumofsumvolume) from dublintrafficvolume  
where site is not null and month = 6 and day = 1  
group by site
```

```
Alter table dublintrafficlocations add column sumoftrafficvolume INTEGER DEFAULT 0;  
with traffic as(  
    select site, sum(sumofsumvolume) from dublintrafficvolume  
    where site is not null  
    group by site  
)  
update dublintrafficlocations  
set sumoftrafficvolume = traffic.sum  
from traffic  
where dublintrafficlocations.siteid = traffic.site  
  
select * from dublintrafficlocations  
ORDER BY trafficid
```



Heatmap set:

Heatmap (Kernel Density Estimation) X

Parameters Log

☐ Selected features only

Radius

800.000000 meters

Output raster size

Rows 118282 Columns 15733

Pixel size X 50.100000 Pixel size Y 50.100000

▼ Advanced parameters

Radius from field [optional]

Weight from field [optional]

123 sumoftrafficvolume

Kernel shape

Quartic

Decay ratio (Triangular kernels only) [optional]

0.000000

Output value scaling

0%

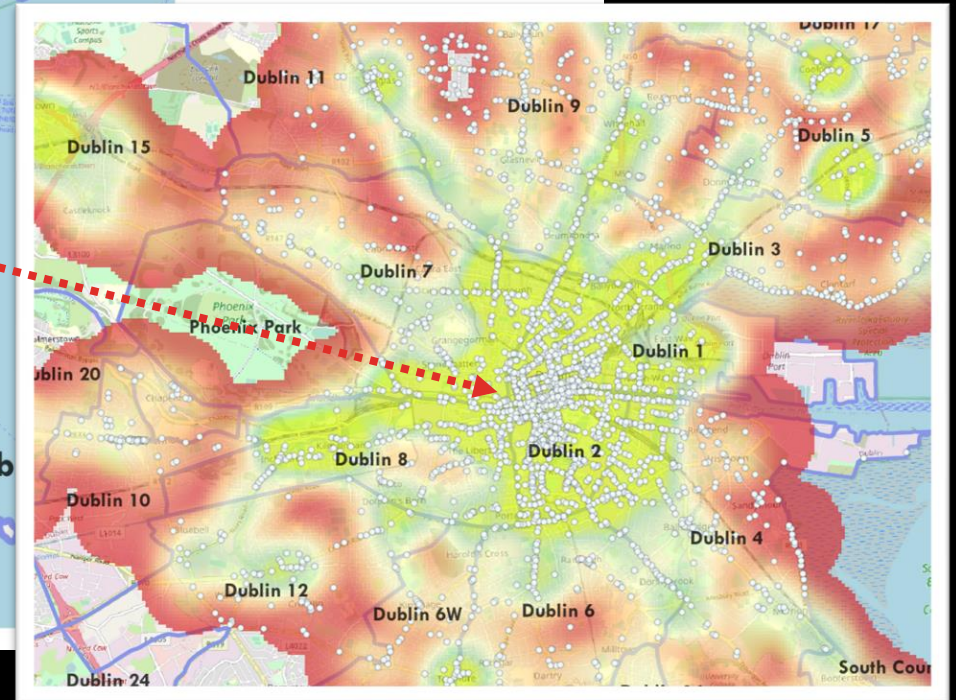
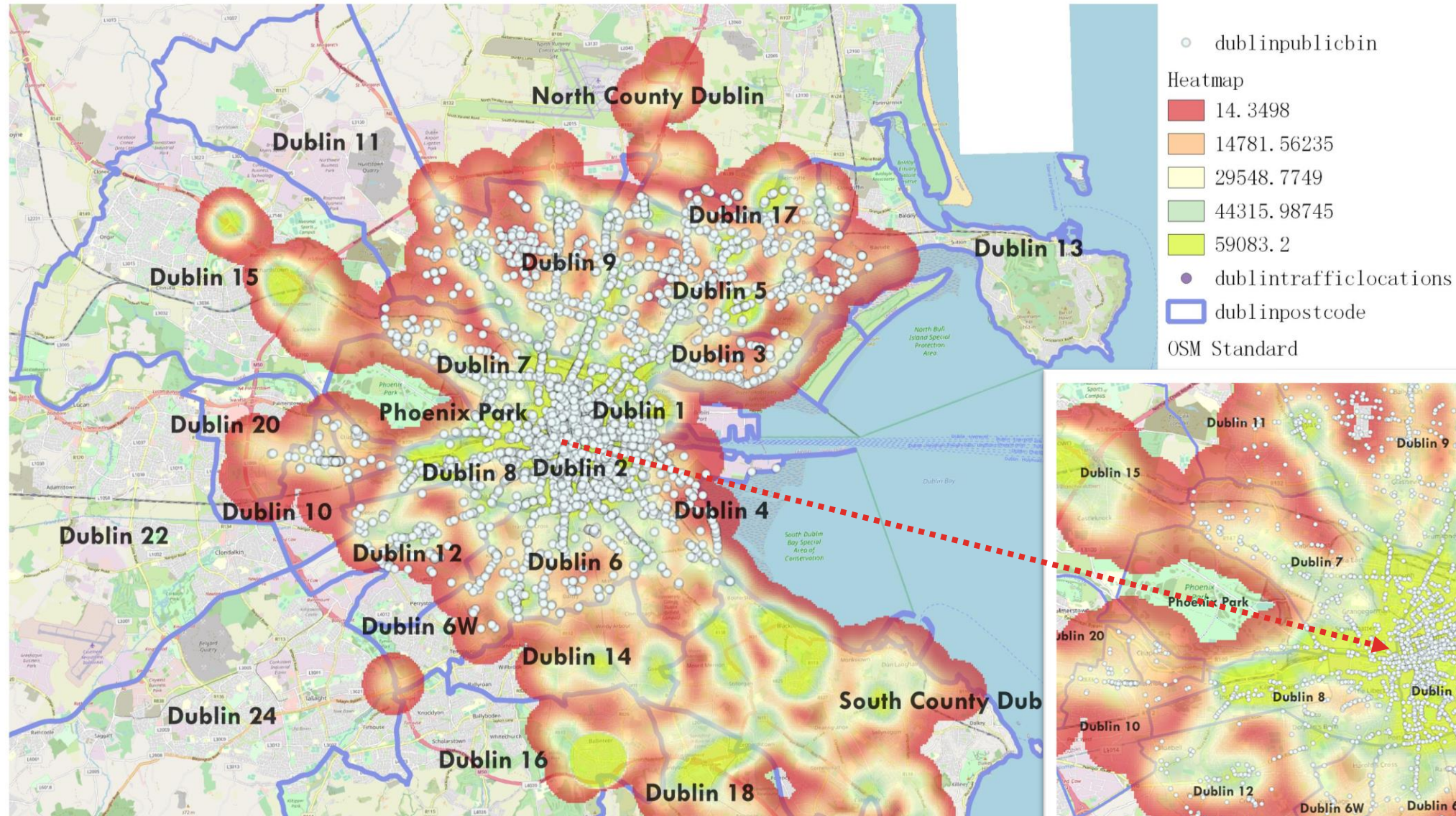
Cancel

Run as Batch Process... Run Close Help





# Dublin Traffic Volume Heatmap





# DATA SOURCES

1. <https://data.gov.ie/dataset/dcc-public-bin-locations> (Dataset updated: 19/11/2020)
2. [https://github.com/rdmolony/dublin-postcode-shapefiles/tree/master/Postcode\\_dissolve](https://github.com/rdmolony/dublin-postcode-shapefiles/tree/master/Postcode_dissolve)
3. [https://data.smartdublin.ie/dataset/3495362f-06c2-4b06-90f5-3eaa307ab145/resource/653f8222-949c-4a83-b8e0-e4e4b1092b60/download/its\\_scats\\_sites\\_aug-2020.csv](https://data.smartdublin.ie/dataset/3495362f-06c2-4b06-90f5-3eaa307ab145/resource/653f8222-949c-4a83-b8e0-e4e4b1092b60/download/its_scats_sites_aug-2020.csv) (Dataset updated: 02/10/2020)
4. [https://data.smartdublin.ie/dataset/3495362f-06c2-4b06-90f5-3eaa307ab145/resource/5f9946a8-f800-4813-9c63-8742df0f15c5/download/scats\\_detector\\_volume\\_jan-jun-2020.csv](https://data.smartdublin.ie/dataset/3495362f-06c2-4b06-90f5-3eaa307ab145/resource/5f9946a8-f800-4813-9c63-8742df0f15c5/download/scats_detector_volume_jan-jun-2020.csv)





*THANK YOU FOR YOUR TIME*

