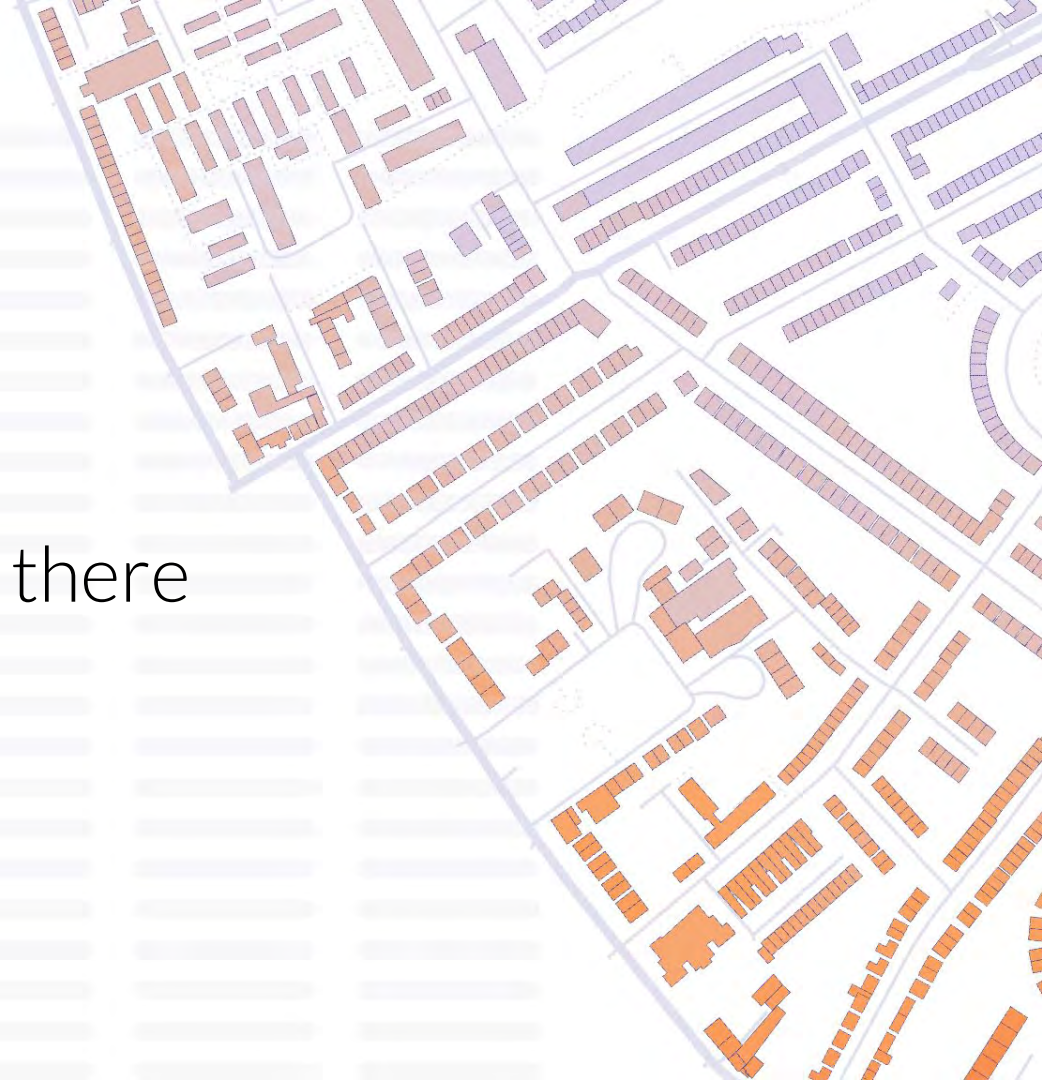


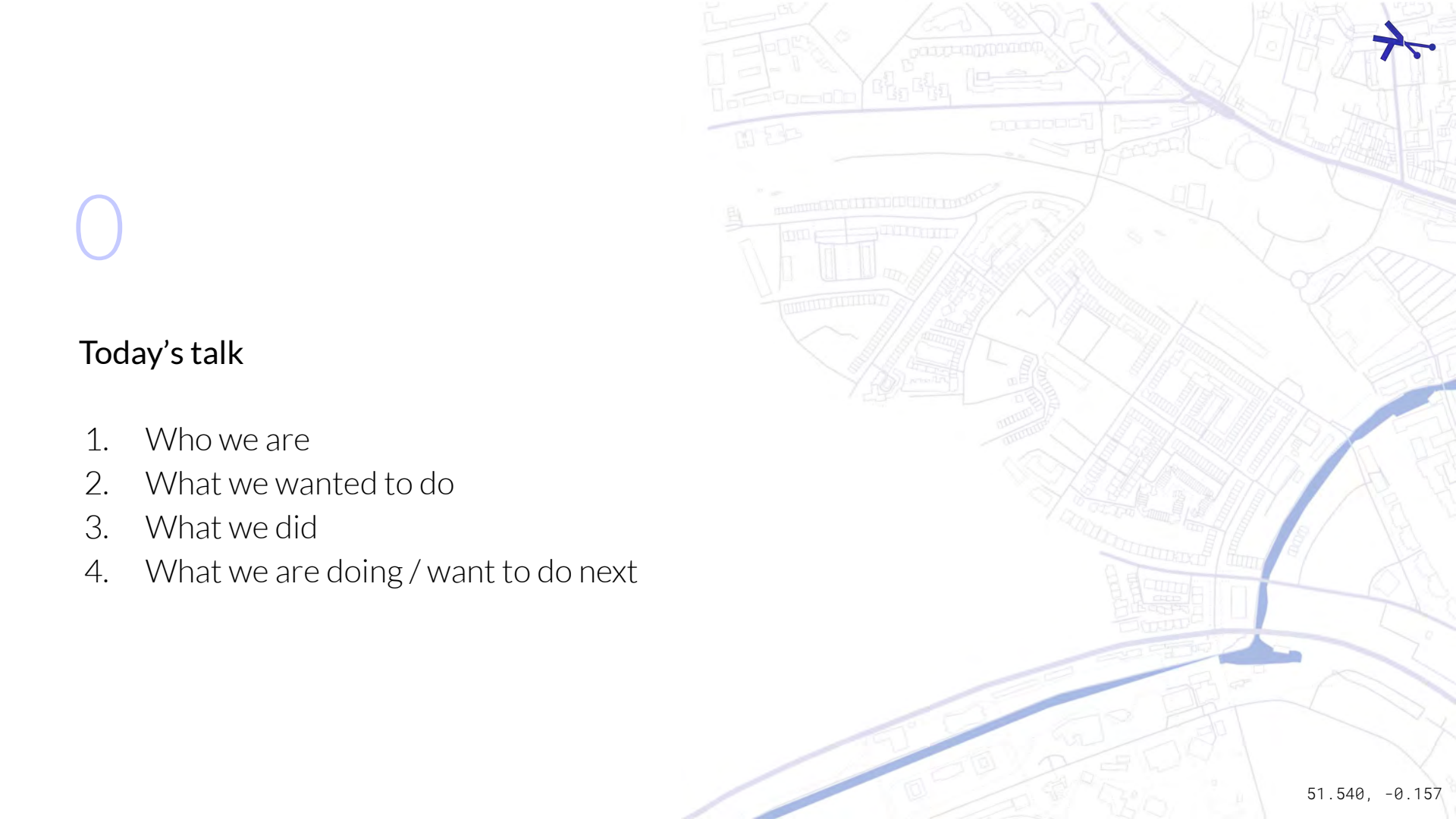


None:

A story of data that isn't there

State of the Map - 19 August 2022





0

Today's talk

1. Who we are
2. What we wanted to do
3. What we did
4. What we are doing / want to do next



1

About us [🔗](#)



Gala Camacho
Data Scientist



Simona Ciocoiu
UX Designer

At Diagonal



2

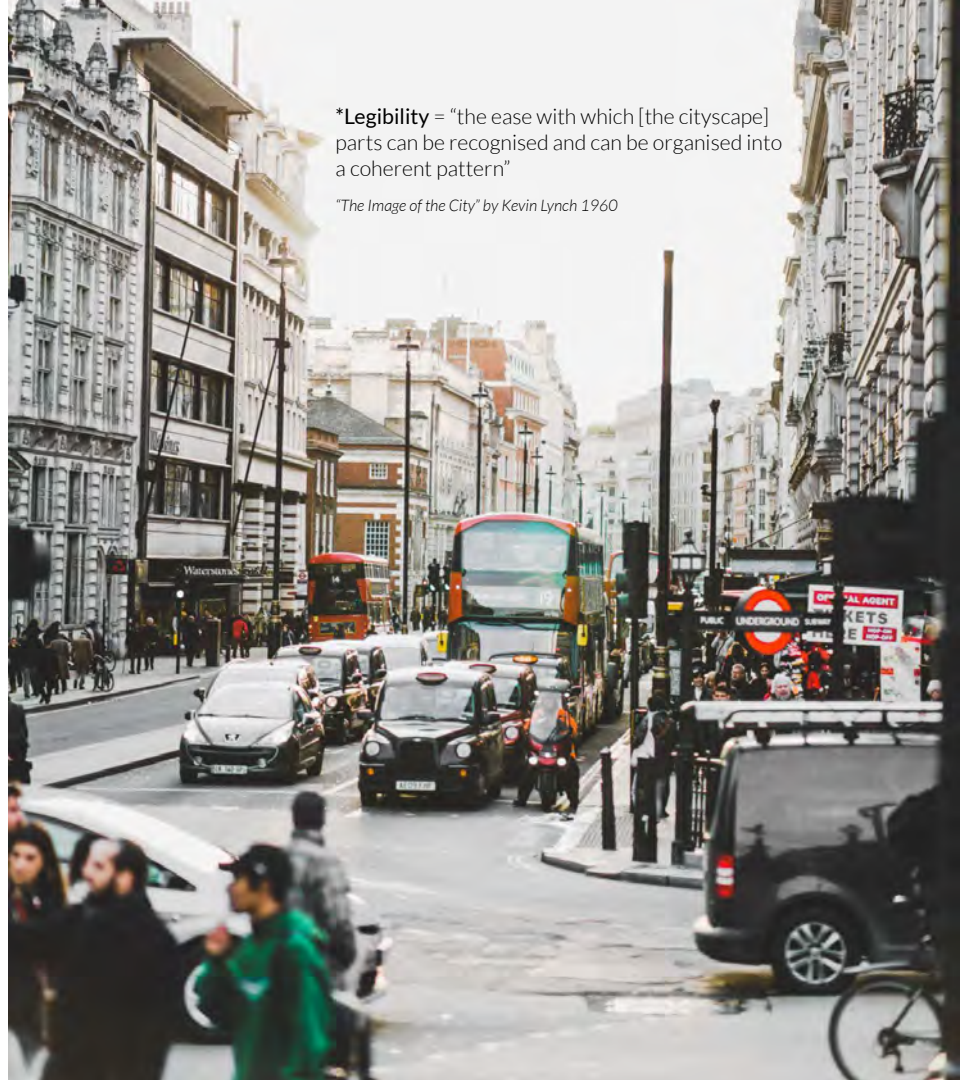
What we wanted to do

Help a company understand facets of neighbourhood legibility*

- For a wider area
- For strategic purposes

***Legibility** = “the ease with which [the cityscape] parts can be recognised and can be organised into a coherent pattern”

“The Image of the City” by Kevin Lynch 1960

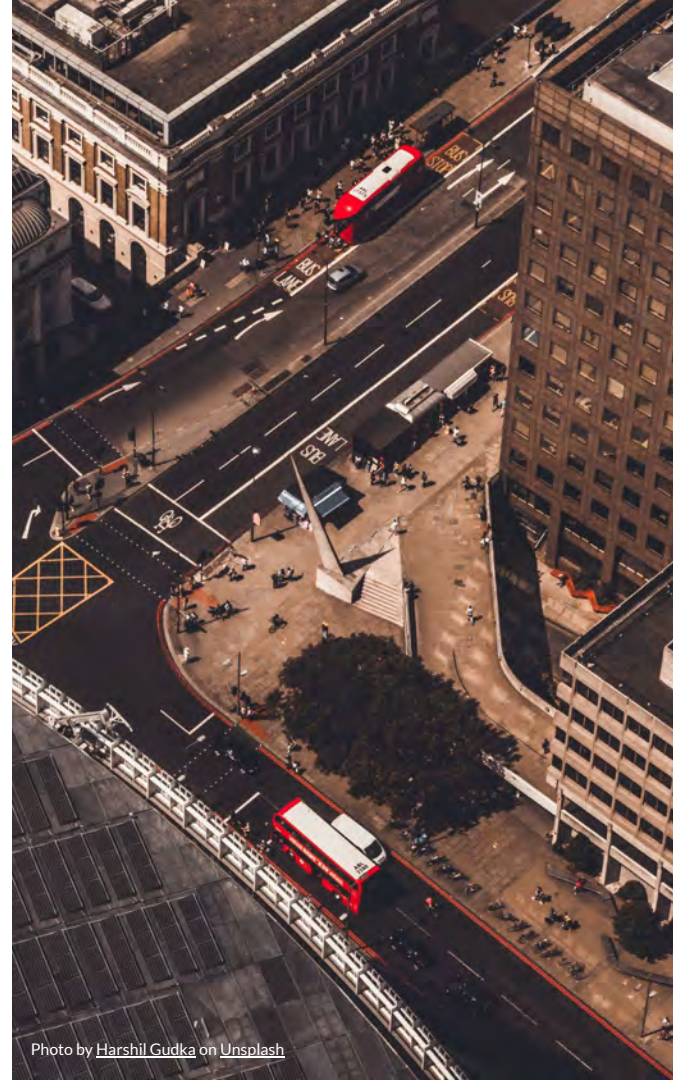


Neighbourhood legibility question

How hard is it for a pedestrian to cross any particular road in this area?

Our challenge

Could we use OSM data + simple algorithm(s) to give a “rough” guide?





3

What we did

We started with the questions of doom for a data scientist

- Does the data have the information we need?
- If so, [yay!] is the information reliable enough to analyse it?



Does the data have the information we need?

- What tags are useful?



Example tags

key value

highway = footway

footway = crossing

crossing = marked



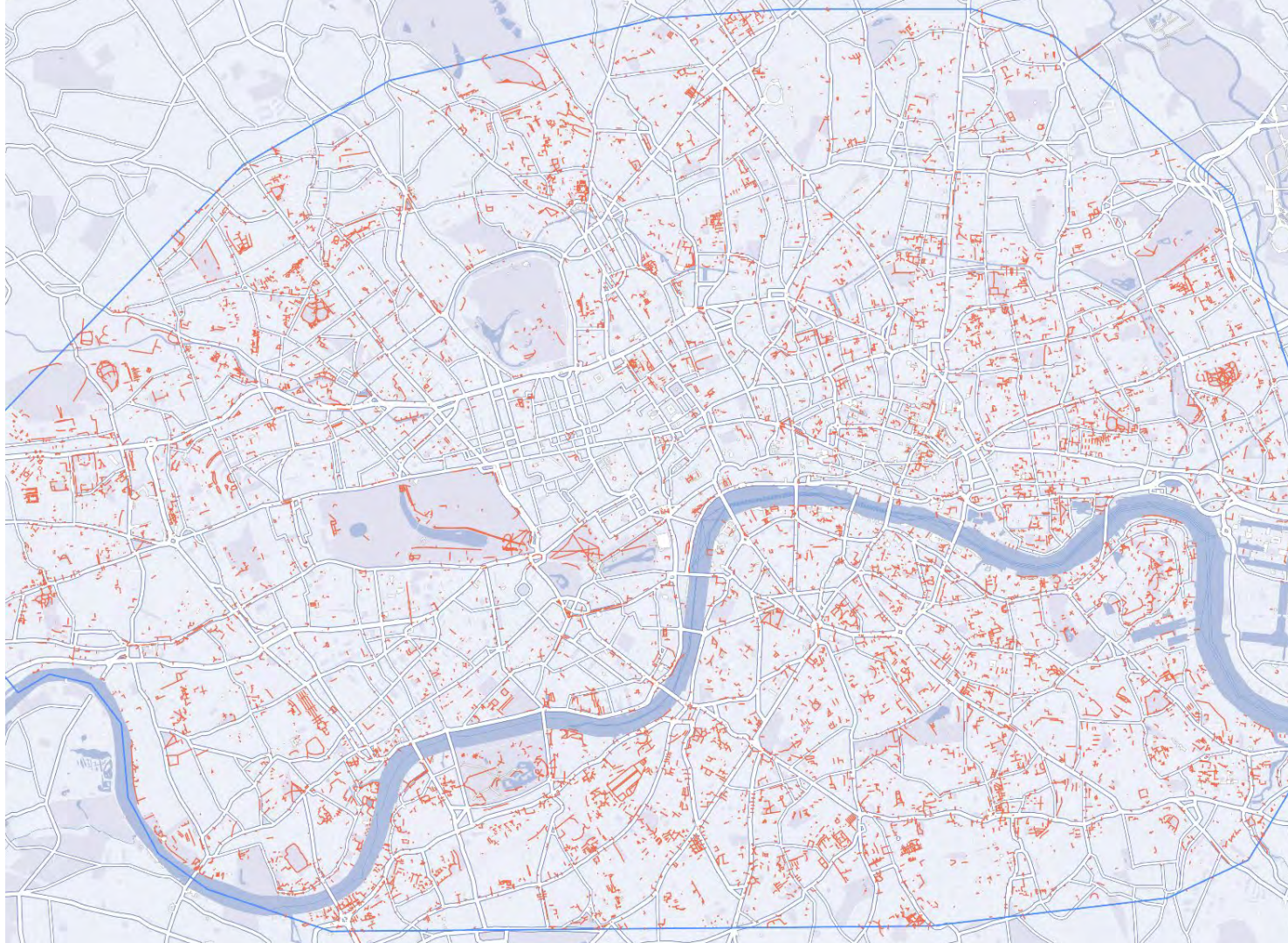
Is the information reliable enough to analyse it?

- Is it there?
- What values does it take?
- Can we trust it?
- Can we fill in missing information?

Missing information is not uniformly distributed

- Select the area you are interested in

Visualise road segments which contain *only* the `highway` tag



A bit more in focus, what if we explore **highway** = **footway**

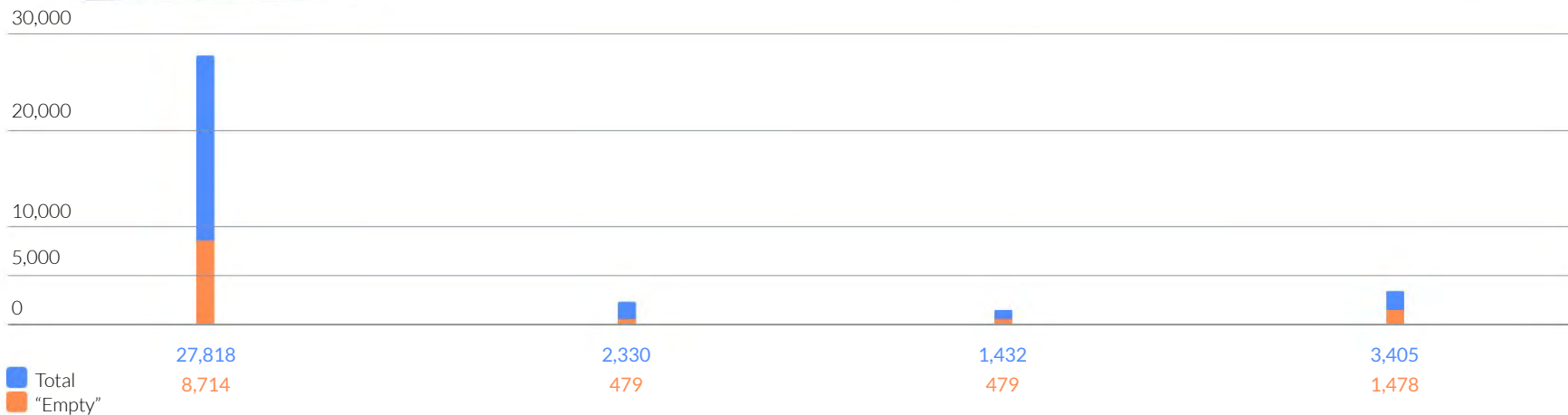


London (zone 1-2)

City of London

Lambeth (zone 1-2)

Southwark (zone 1-2)



A bit more in focus, what if we explore **highway** = **footway**

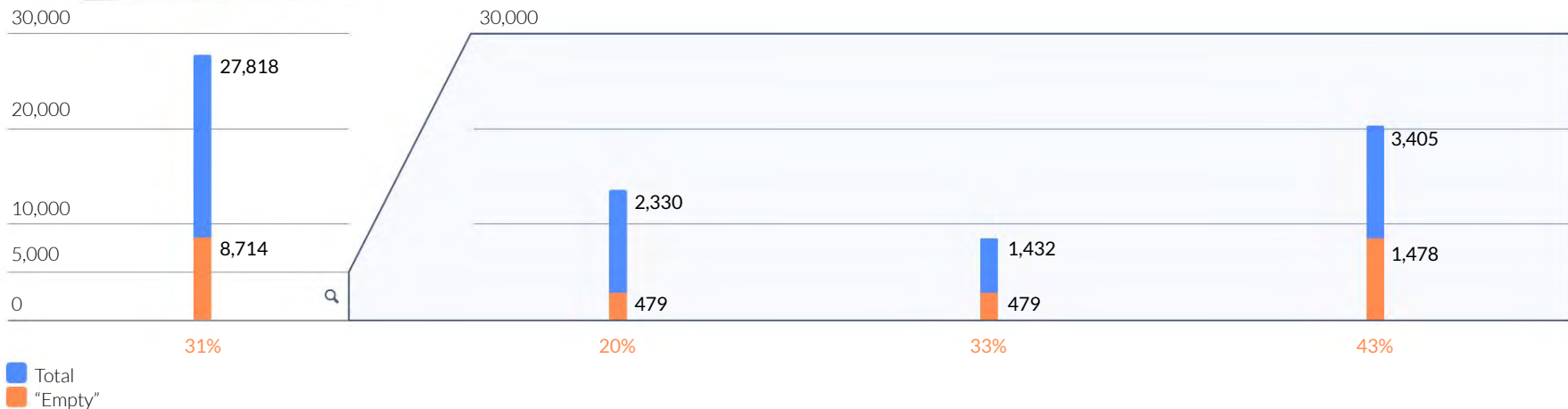


London (zone 1-2)

City of London

Lambeth (zone 1-2)

Southwark (zone 1-2)





Here are some tags that felt promising - within London Zone 1+2

"sidewalk"

"both"

"left"

"separate"

"right"

"none"

"no"

"shared"

"crossing"

"yes"

"both; right"

"separate;right"

"right;both"

"half"

"j"

"l"

"lit"

"yes"

"no"

"24/7"

"automatic"

"yes; no"

"wheelchair"

"yes"

"no"

"limited"

"private"

"designated"

"crossing:island"

"no"

"yes"

"crossing"

"marked"

"traffic_signals"

"unmarked"

"zebra"

"uncontrolled"

"toucan"

"pelican"

"tiger"

"island"

"zebra,_parallel"

"raised"

"stroller"

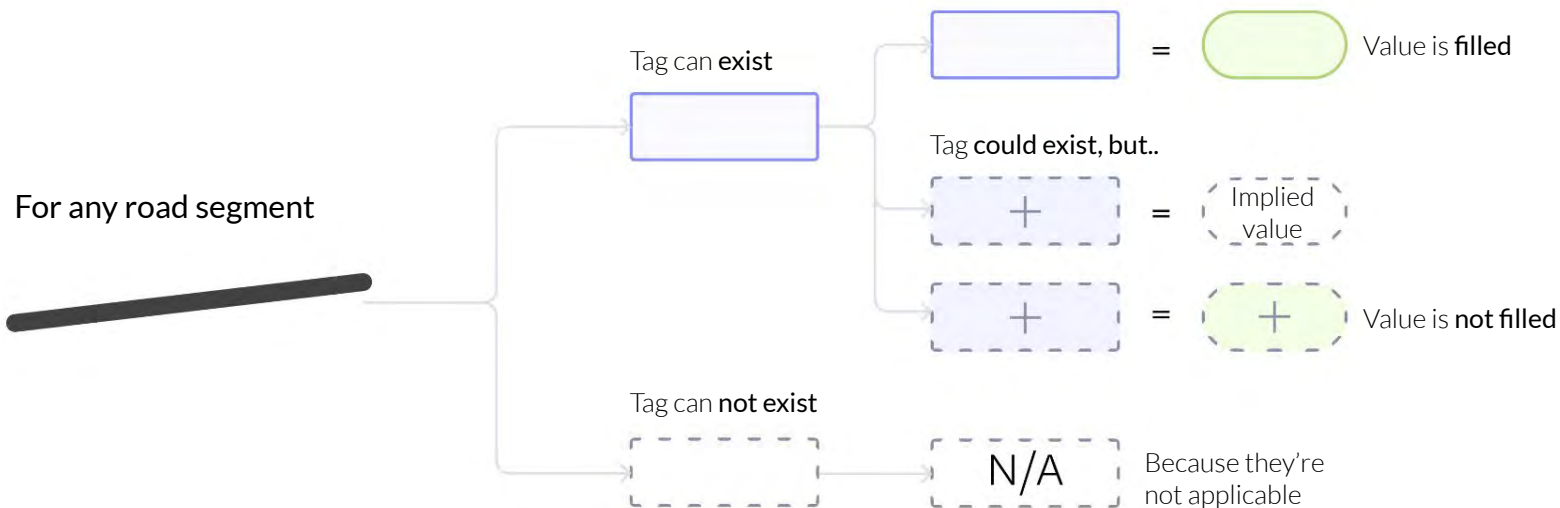
"yes"



Consider the “**lit**” tag

27818 features have the tag
Its missing in 20607 features

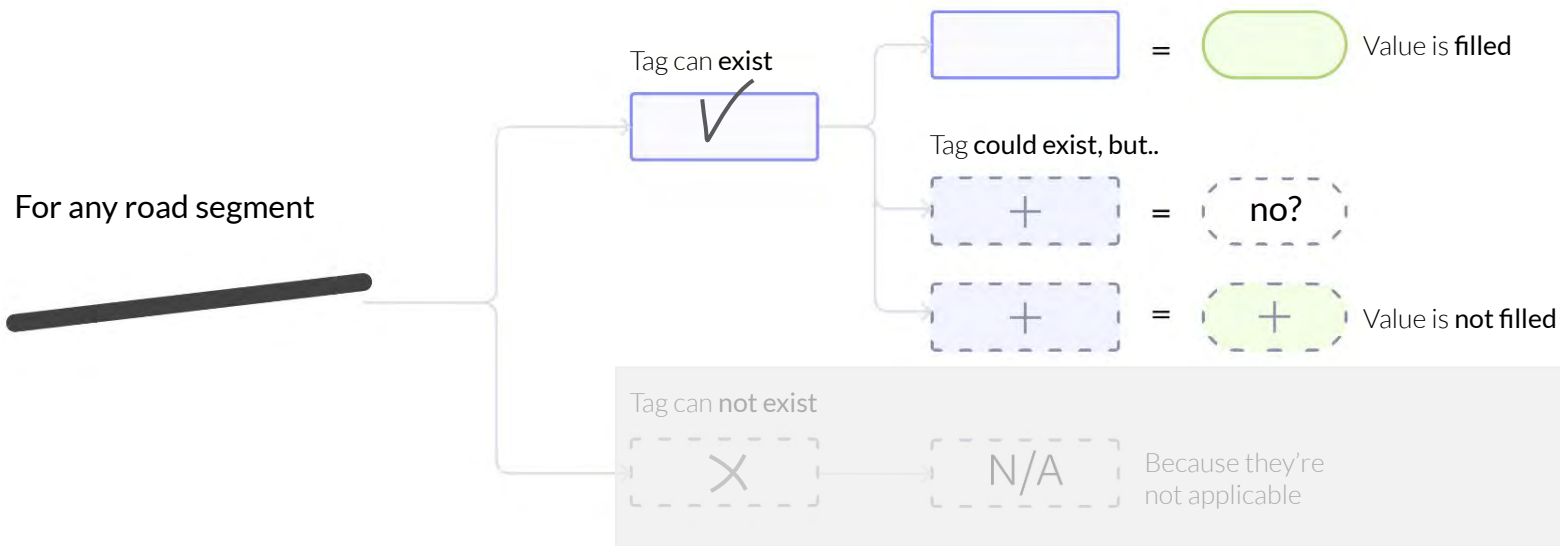
Can we use it?





"lit"

"yes" → 6044
"no" → 1117
"24/7" → 42
"Automatic" → 7
"yes; no" → 1





"crossing"

"marked"

"traffic_signals"

"unmarked"

"zebra"

"uncontrolled"

"toucan"

"pelican"

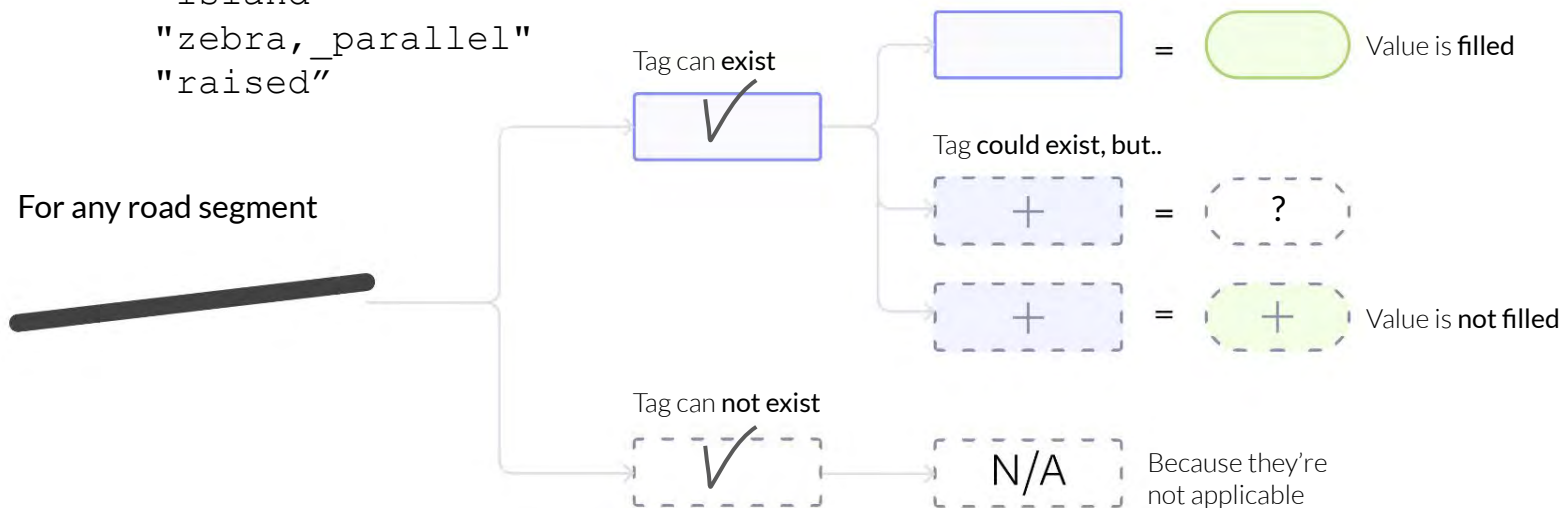
"tiger"

"island"

"zebra_parallel"

"raised"

For any road segment



Taking a step back



Taking a step back

What are we actually interested in?

- Exploration
- Abstraction
- Collaborative work
- Collaborative decision making
- Experimentation





4

What we want to do next



London zone 1+2

Filter by tags

crossing:island

=

yes

features

57 / 228



+

+ other tags



+ none

0

We are exploring

What tools would allow data scientists to explore the completeness of tagging in their area of study?

London

change area

Q

Search for places, streets, latlongs or IDs

London zone 1+2

Filter by tags

features

crossing:island

=

yes

57 / 228

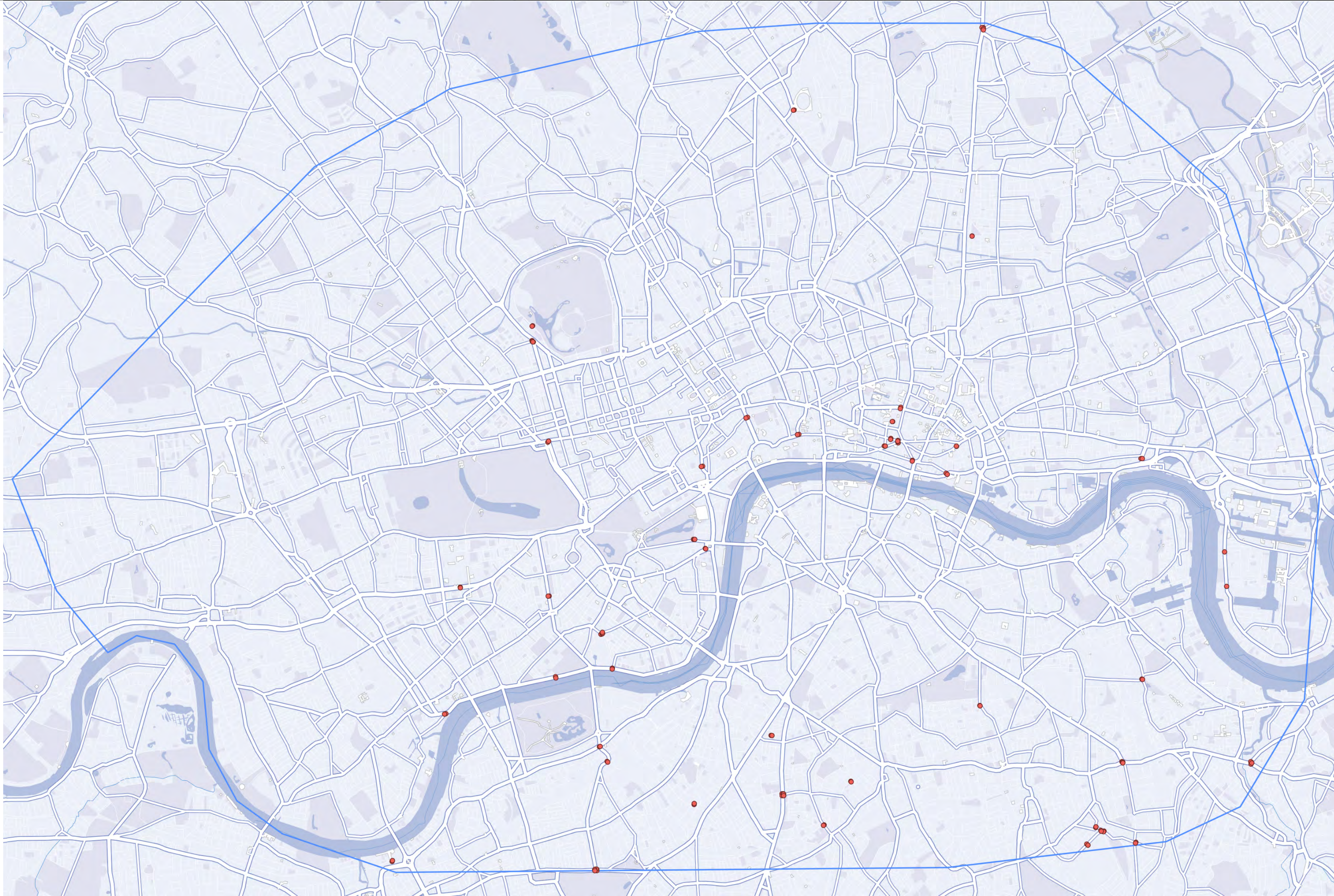
+

+ other tags

0

+ none

0





London zone 1+2

Filter by tags

features

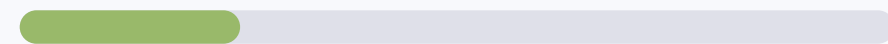
crossing:island = yes

57 / 228



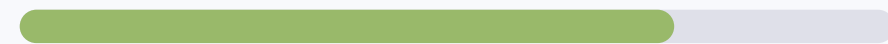
= yes

25%



= no

75%



← Explore the values of that particular tag, and their distribution.



London zone 1+2

Filter by tags

features

crossing:island = yes

57 / 228

+

+ other tags

+ none

0

See if features with this tag have other tags and if there are some that don't have any other tags.

London zone 1+2

Filter by tags

features

crossing:island = yes

57 / 228 

Tag tree

*looks for next tag with **most** features*

crossing:island = yes 57

collapse all

▼ highway = footway 53

▼ highway = cycleway 3

▼ highway = primary 1

See what other tags these features have, by following a tag tree that looks for the next tag with the most features

London zone 1+2

Filter by tags

features

crossing:island = yes

57 / 228 

Tag tree

*looks for next tag with **most** features*

crossing:island = yes 57

collapse all

highway = footway 53

footway = crossing 51

crossing = marked 29

surface = asphalt 24

tactile paving = yes 3

lit = yes 1

tactile paving = no 1

← Collapse the tag tree to see all the tags included in each branch and the number of features they are found in.

London

change area

Search for places, streets, latlongs or IDs

London zone 1+2

Filter by tags features

crossing:island = yes 57 / 228

Tag tree

looks for next tag with *most features*

crossing:island = yes 57

collapse all

highway = footway 53

footway = crossing 51

crossing = marked 29

surface = asphalt 24

tactile paving = yes 3

lit = yes 1

tactile paving = no 1

surface = paved 1

crossing = unmarked 5

surface = asphalt 4

tactile paving = yes 2

traffic_calming = yes 1

tactile paving = no 1

crossing = traffic_signals 2

surface = asphalt 2

tactile paving = yes 1

crossing = zebra 3

surface = asphalt 3

tactile paving = yes 2

traffic_calming = table 1

crossing = uncontrolled 5

lit = yes 3

surface = asphalt 2

tactile paving = yes 1

highway = cycleway 3

highway = primary 1

A map of London showing a dense network of streets. A blue line outlines a specific area in the north and east of the city. Numerous red dots are scattered across the map, primarily concentrated along the River Thames and in the central urban areas, indicating specific crossing points or features of interest. The map uses a light blue color scheme for water bodies and a white/grey color scheme for land and streets.

London zone 1+2

Filter by tags

features

`crossing:island` = `yes` 57 / 228 

Tag tree

*looks for next tag with **most** features*

`crossing:island` = `yes` 57 [collapse all](#)

`highway` = `footway` 53

`footway` = `crossing` 51

`crossing` = `marked` 29

`surface` = `asphalt` 24

`tactile paving` = `yes` 3

`lit` = `yes` 1

`tactile paving` = `no` 1

Select a set of tags to
see the road segments
on the map

London

change area

Search for places, streets, latlongs or IDs

London zone 1+2

Filter by tags

features

- crossing:island

=

yes

57 / 228
- highway

=

footway

53
- footway

=

crossing

51
- crossing

=

marked

29
- surface

=

asphalt

24

+

+ other tags

+ none

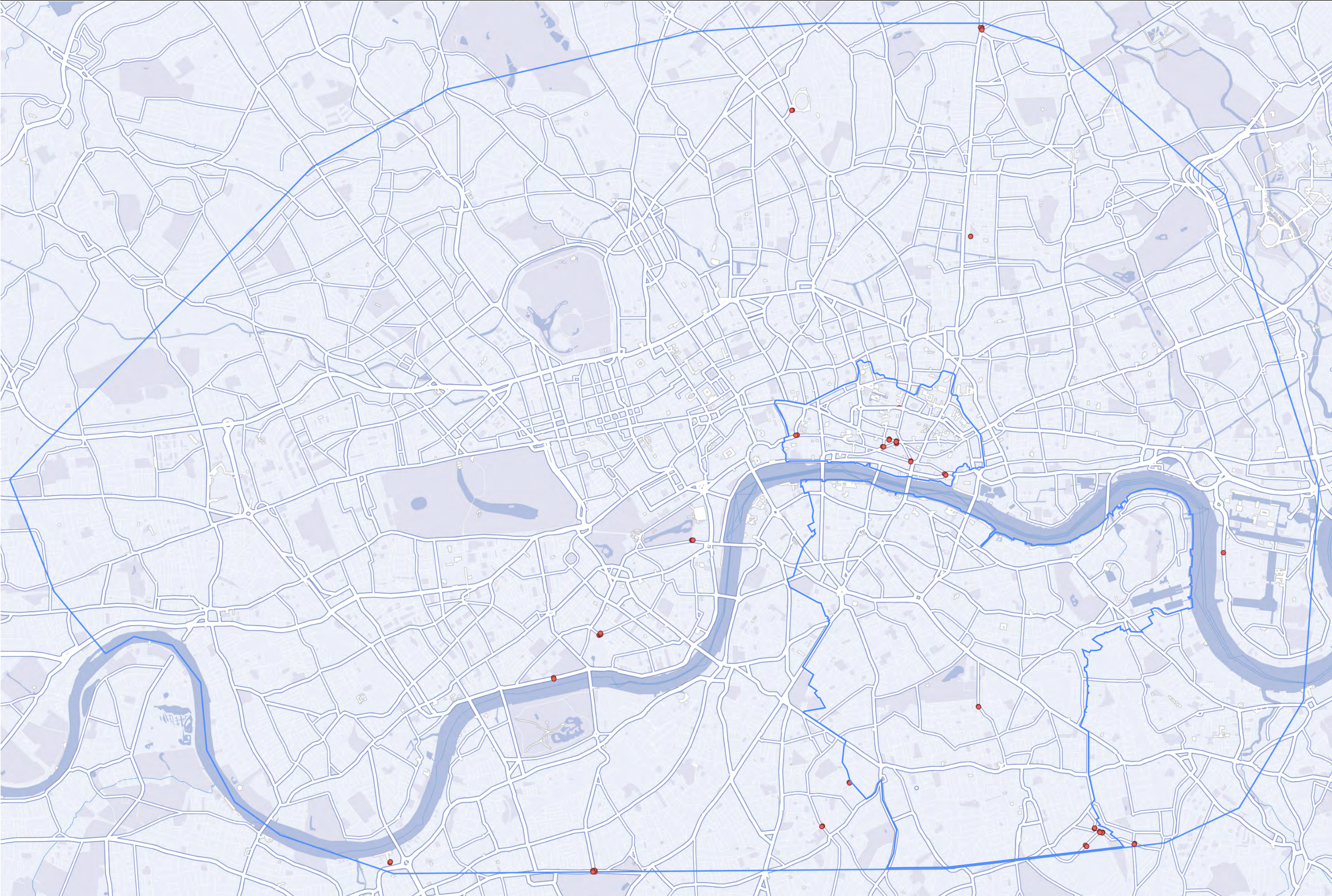
0

run on

City of London

Southwark

+



run on ▶

 City of London

 Southwark

+



Once you have an interesting selection of tags, you can run it on other areas of interest.

London

change area

Search for places, streets, latlongs or IDs

London zone 1+2

Filter by tags

features

crossing:island

=

yes

57 / 228

highway

=

footway

53

footway

=

crossing

51

crossing

=

marked

29

surface

=

asphalt

24

+

+ other tags

+ none

0

City of London

Filter by tags

features

crossing:island

=

yes

10 / 102

highway

=

footway

10

footway

=

crossing

10

crossing

=

marked

6

surface

=

asphalt

6

+

+ other tags

+ none

0

Southwark

Filter by tags

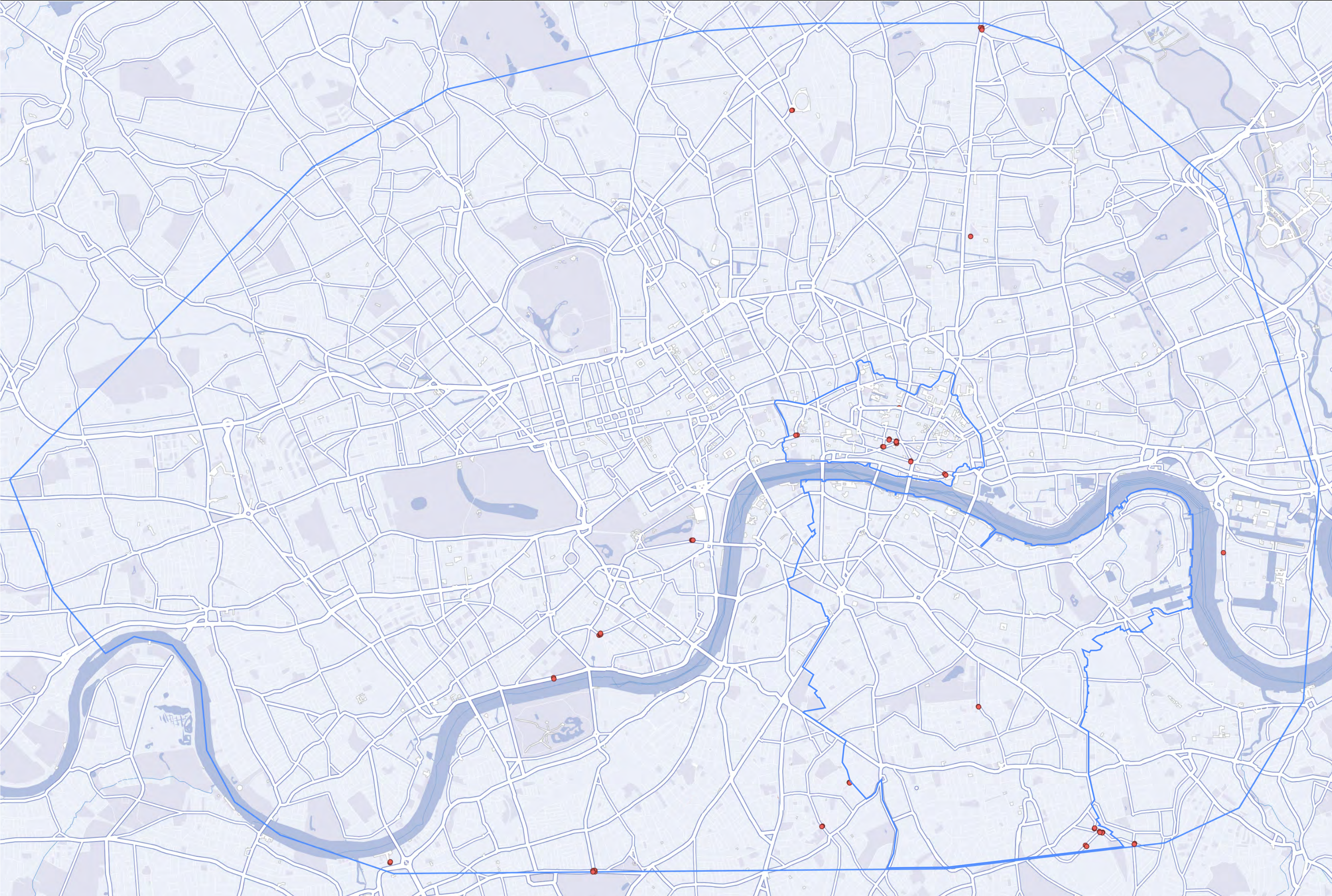
features

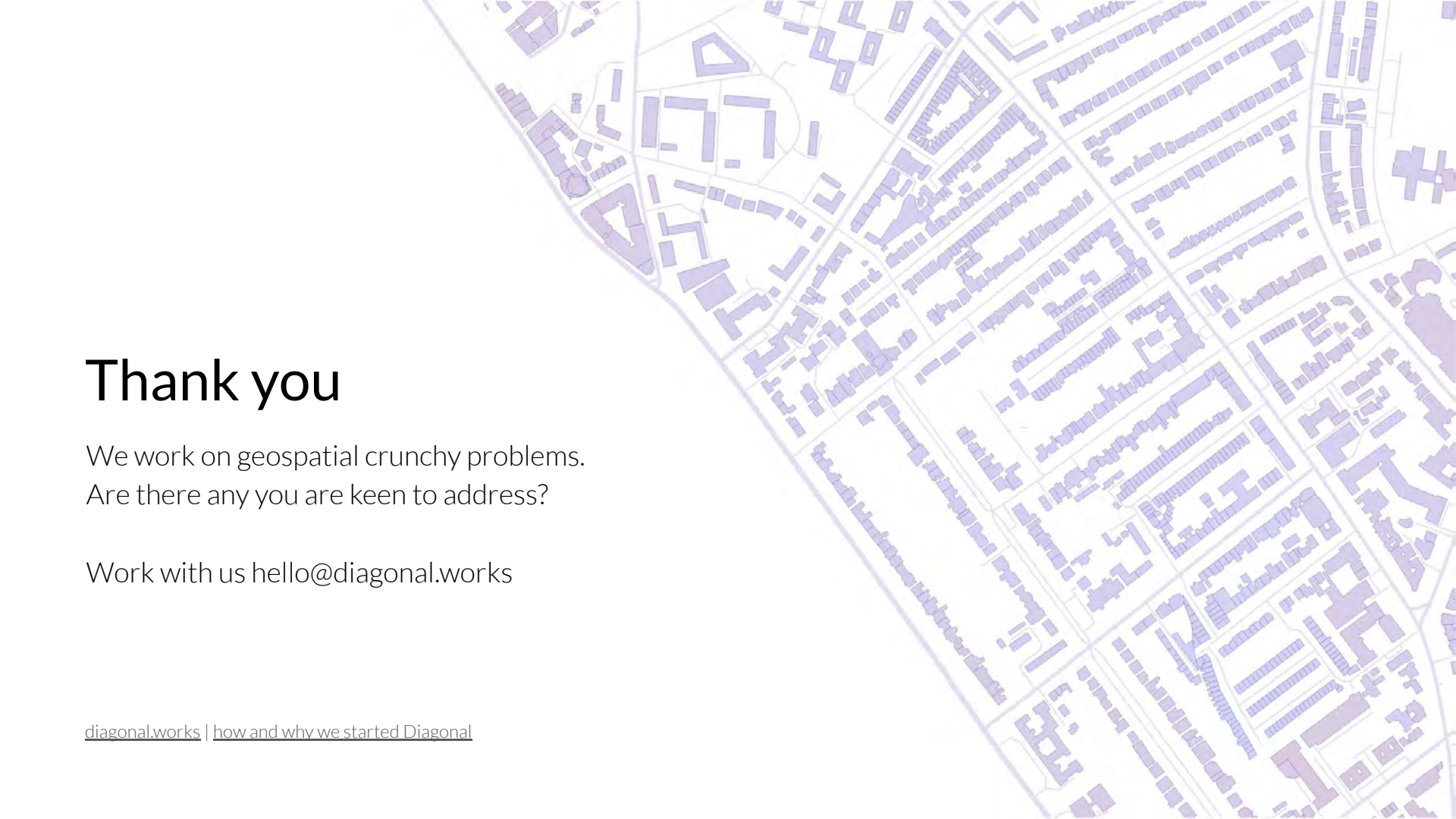
crossing:island

=

yes

10 / 12





Thank you

We work on geospatial crunchy problems.
Are there any you are keen to address?

Work with us hello@diagonal.works

[diagonal.works](#) | [how and why we started Diagonal](#)