



Canal &
River Trust

Using machine learning and spatial data to support strategy



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Tracsis is a leading provider of transport survey, market research, training, consultancy and data capture services

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Health & Inactivity

Machine Learning Video Analytics Sensors

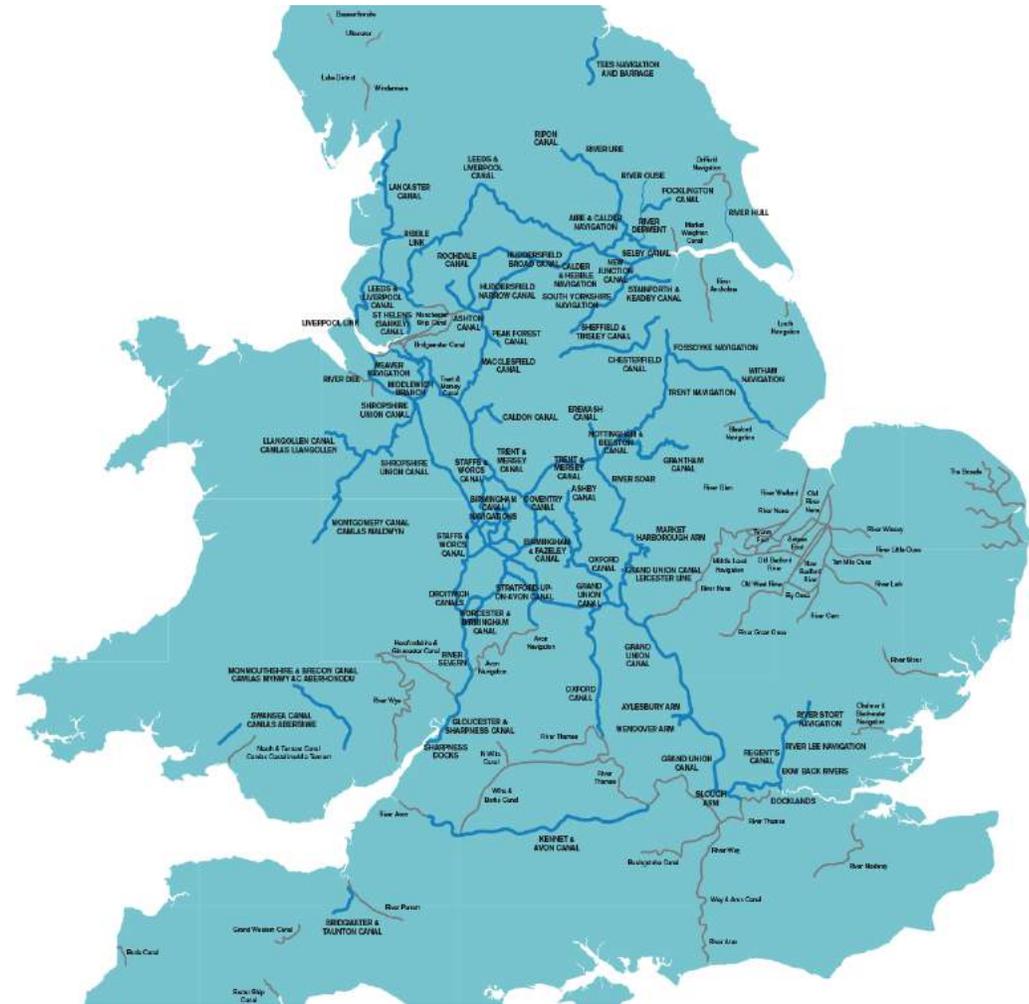
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Canal & River Trust

- 2,000 miles of historic canals and river navigations, plus several docks, 72 reservoirs etc. across England & Wales
- Over 2,700 listed structures – more than anyone bar the National Trust and Church of England - locks, bridges, aqueducts, tunnels and heritage buildings ...
- Environment – 63 SSSIs, local conservation areas
- Water resources
- Our Archives and ‘Collection’





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Outcomes Measurement Framework (OMF)



Health,
Wellbeing
& Happiness



Engaged
People &
Cohesive
Communities



Learning &
Enhancing
Skills



Prosperous
& Connected
Places



Green & Blue
Futures



Cultural &
Environmental
Assets

People

Prosperity

Places

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Canal &
River Trust

Why we are measuring outcomes & communicating impacts

Evidence

Waterways & the Trust
transform places &
enrich lives

Improve

Insight & Trust
performance

Story

Consistent &
credible narrative

Access Voluntary & Statutory Funding – **Wider Reach, Local Connections
& Relevance** – Stronger Policy Position & Authoritative Voice –
Greater Influence – Enhancing Brand Recognition

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Potential reach of our waterways	Population live within one kilometre	Population live within 8 kilometres (5 miles)
England	15%	52%
Greater London	15%	72%
Greater Manchester City Region	25%	92%
West Midlands City Region	51%	100%
Wales	3%	17%
Burnley	70%	100%
Black Country	70%	100%

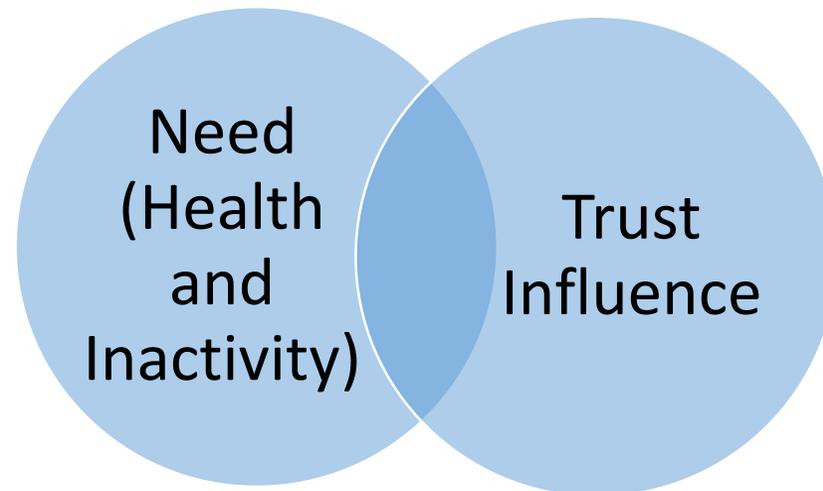
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- To provide an evidence based, formalised process for identifying priority areas for Trust led or partnership schemes
- Using external and Trust specific data to identify local authorities where health needs intersect with Trust influence and facilities

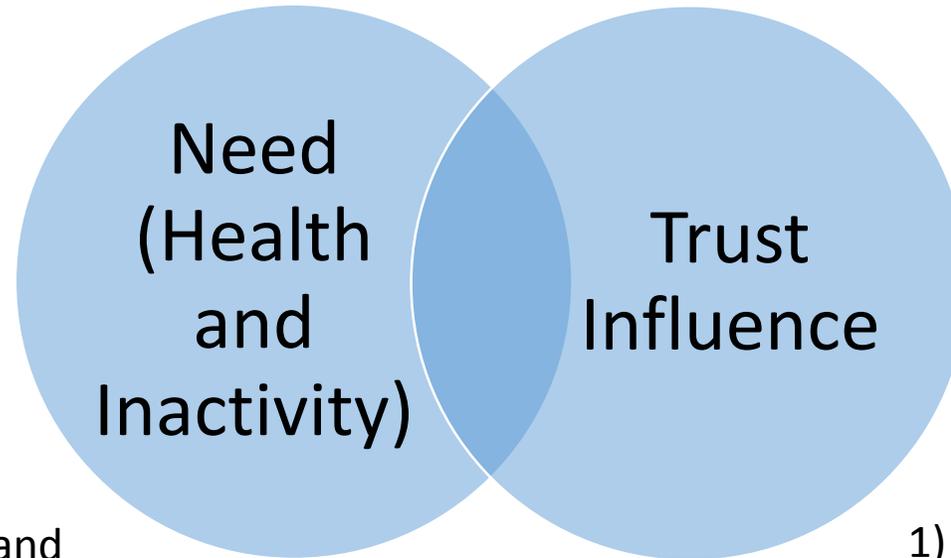


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- 1) Physical Inactivity (Sport England Active Lives Survey)
- 2) Obesity (PHE GP Practice Profiles)
- 3) Mental Health (PHE GPPP)
- 4) Child Obesity (Year 6) (National Child Measurement Programme)

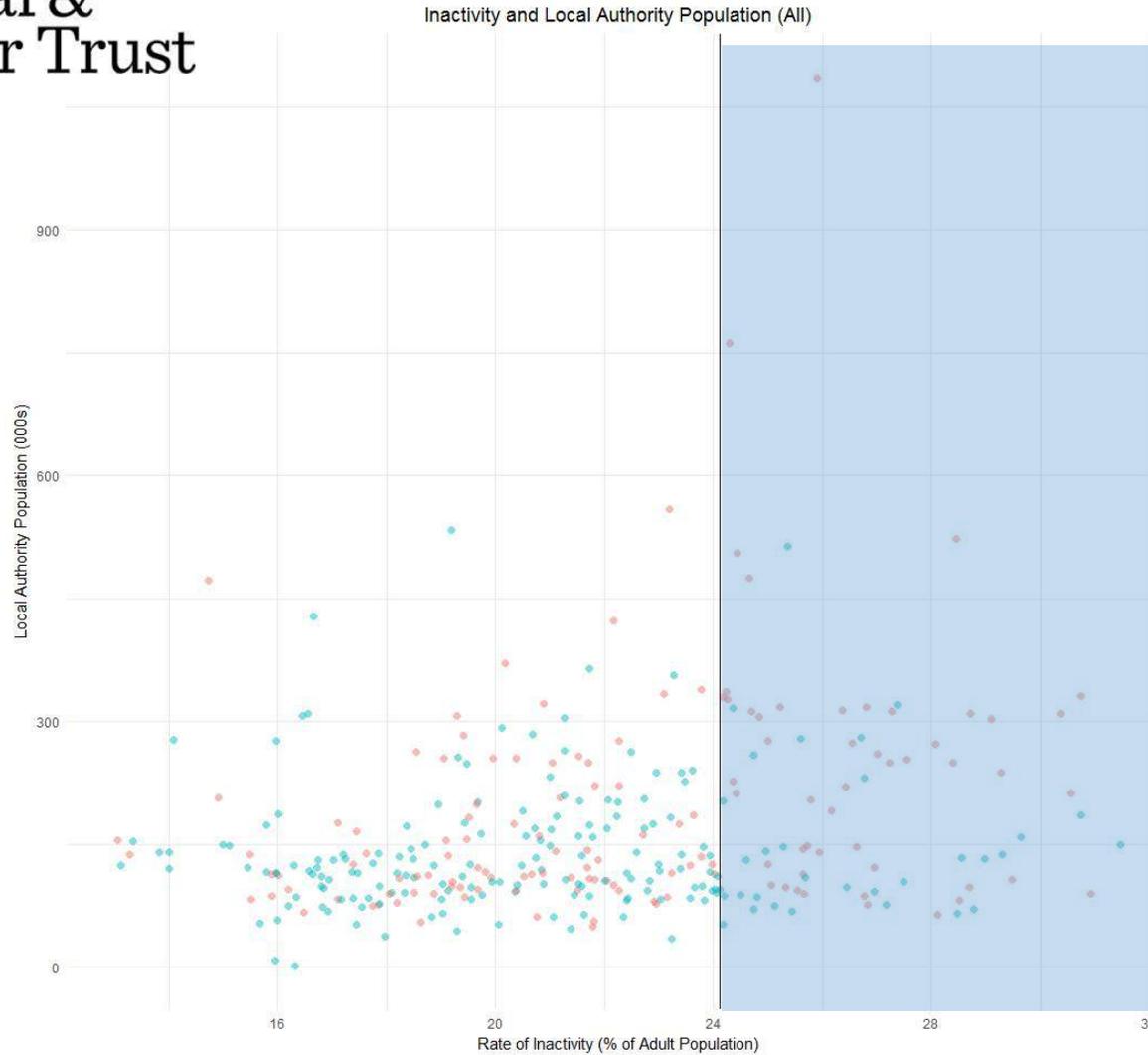
- 1) Length of waterway within a local authority (Trust GIS)
- 2) Resident population living within 1km of Trust waterway (Trust GIS)
- 3) % of local authority population living within 1km of Trust waterway (Trust GIS)

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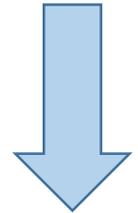




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Subset by 25% least
active (most obese etc)
LAs

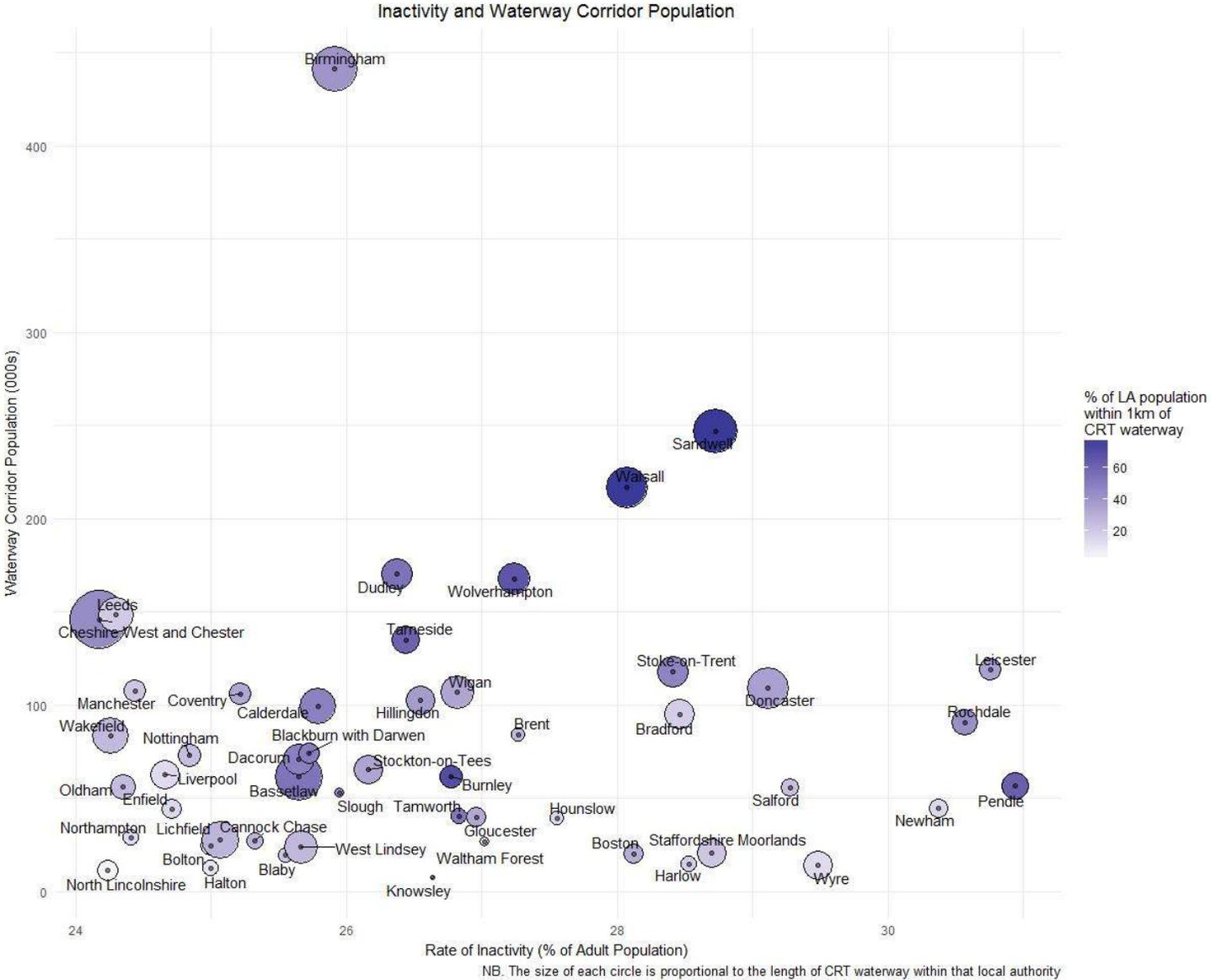


Exclude LAs with no
Trust waterway

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Inactivity



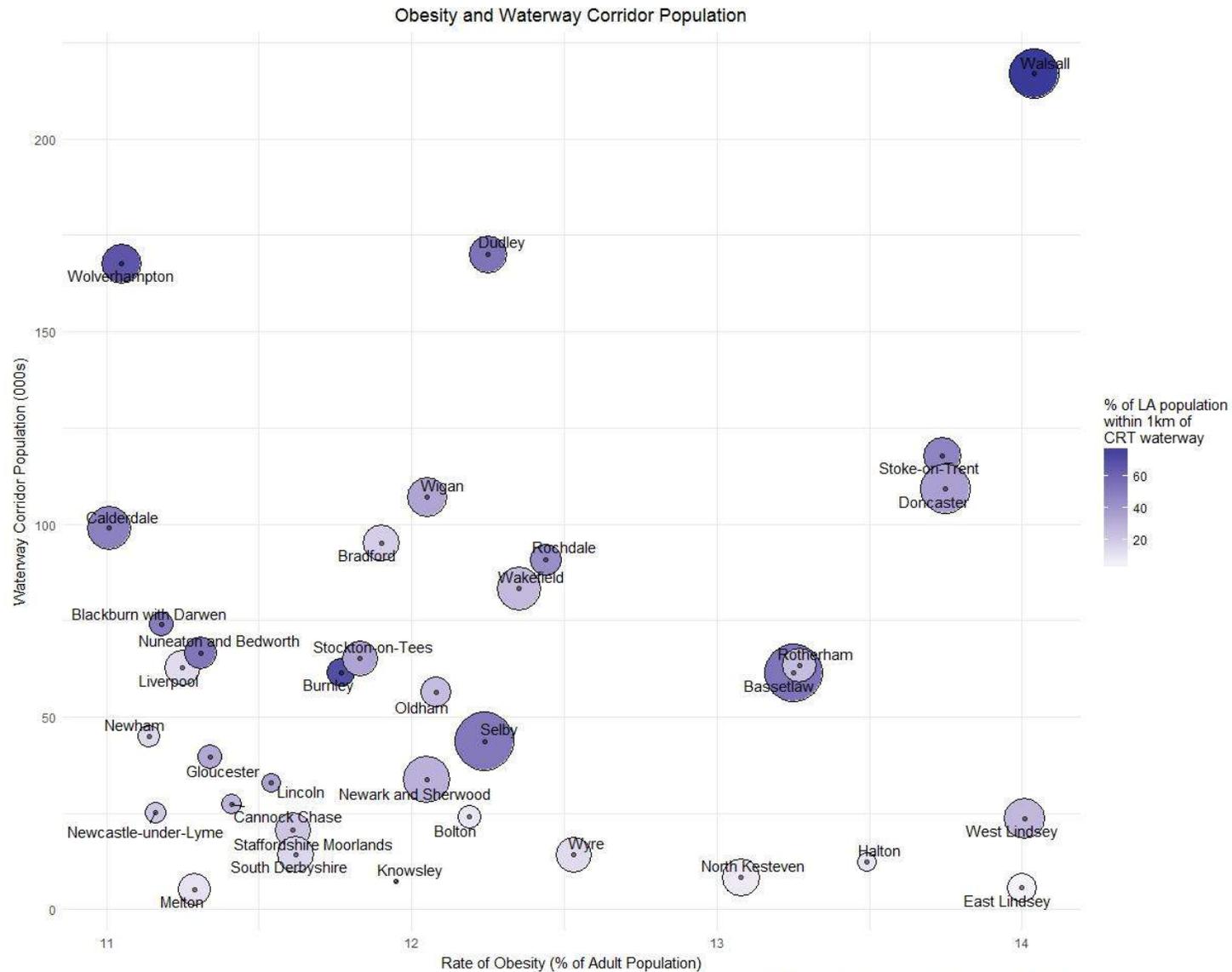
Target Areas

- Pendle
- Rochdale
- Leicester
- Newham

Birmingham

- Sandwell
- Walsall
- Dudley
- Cheshire West
- Bassetlaw

Obesity

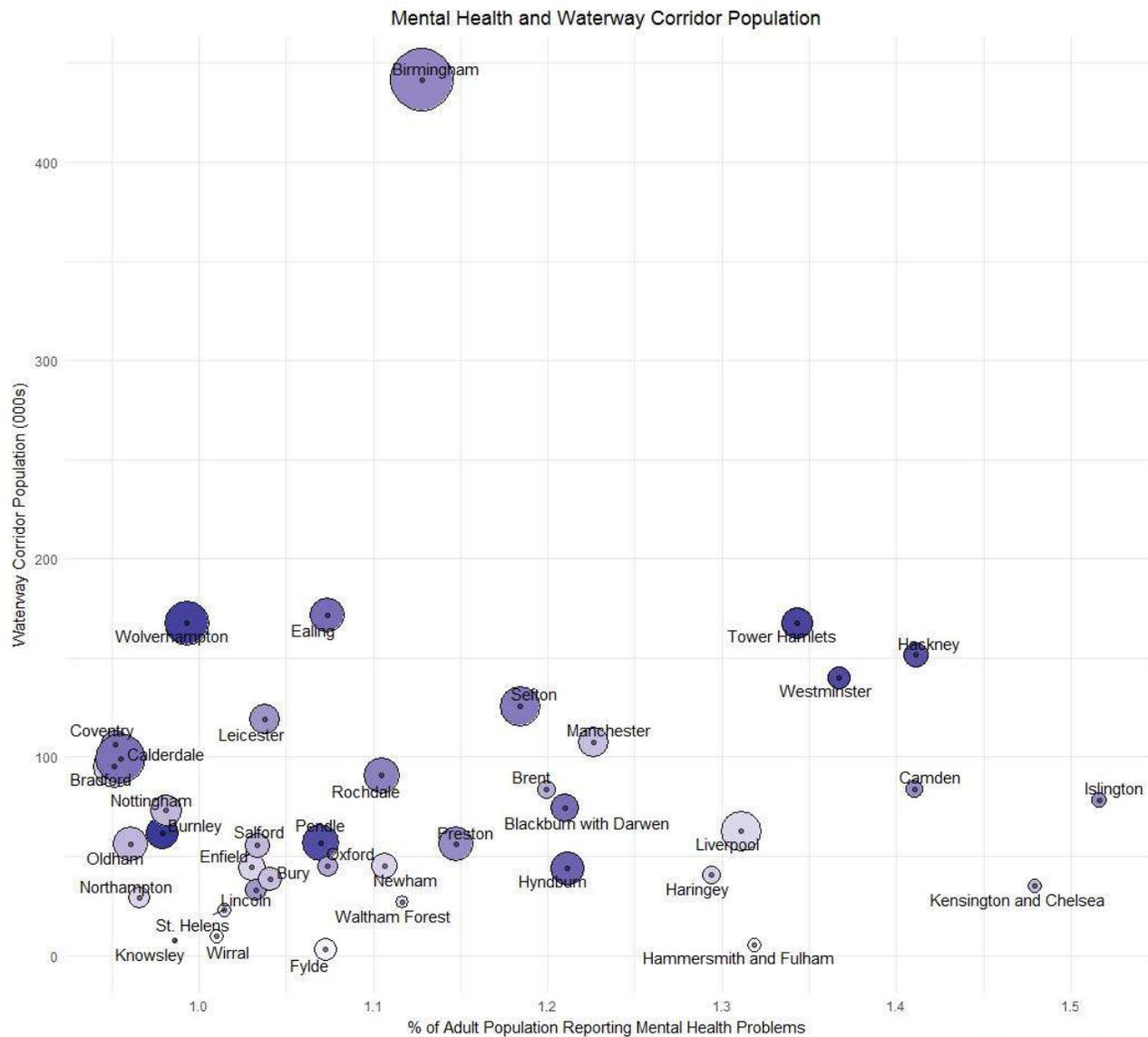


Target Areas
Walsall
West Lindsey
East Lindsey
Doncaster

Sandwell
Walsall
Dudley
Selby
Bassetlaw

NB. The size of each circle is proportional to the length of CRT waterway within that local authority

Mental Health



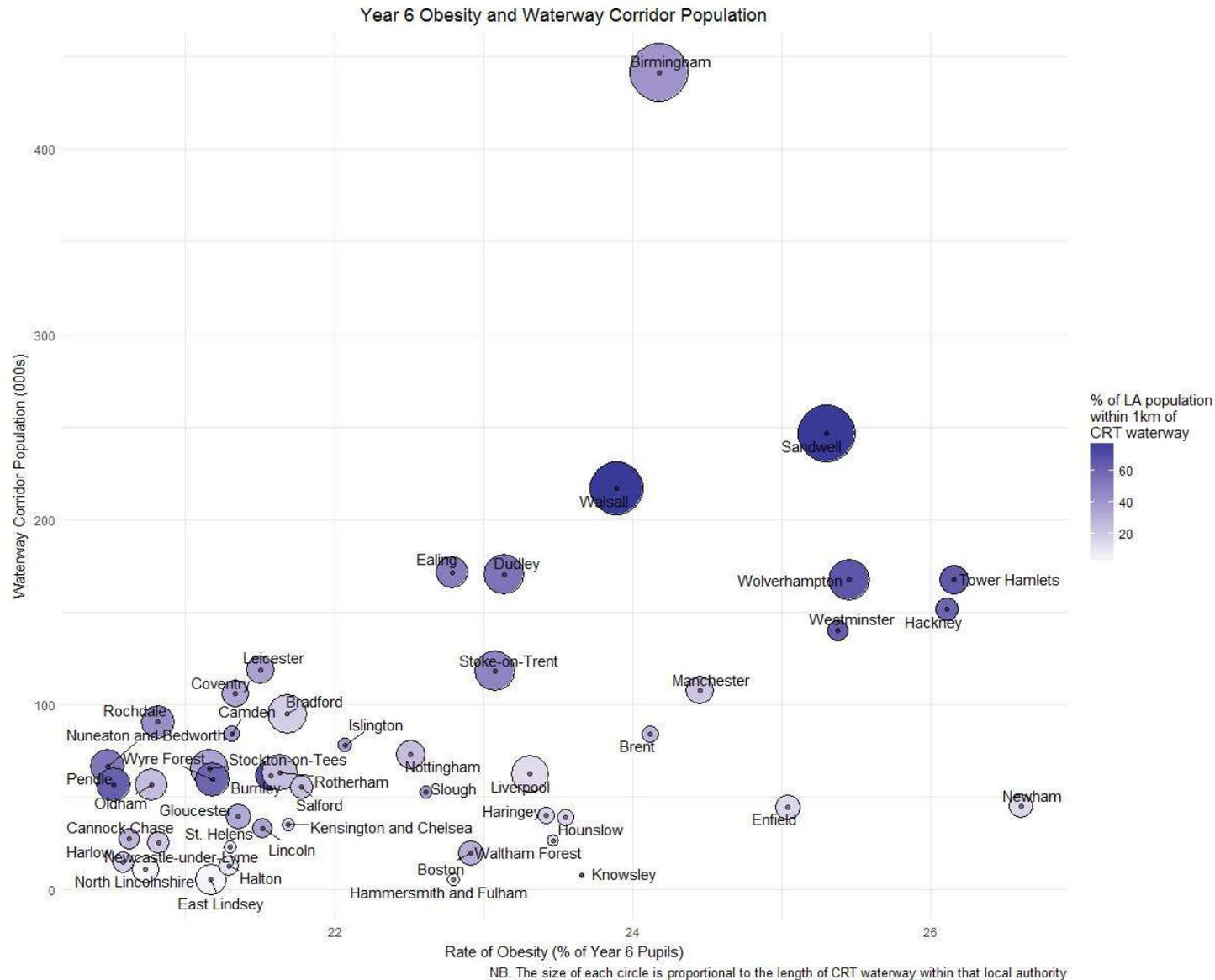
% of LA population within 1km of CRT waterway

Target Areas
Islington
Kensington and Chelsea
Hackney
Camden

Birmingham
Wolverhampton
Ealing
Tower Hamlets
Burnley
Hyndburn
Calderdale

NB. The size of each circle is proportional to the length of CRT waterway within that local authority

Child Obesity



Target Areas
 Newham
 Tower Hamlets
 Hackney
 Wolverhampton

Birmingham
 Sandwell
 Walsall
 Stoke on Trent
 Dudley
 Ealing



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Next Steps

- Develop list of target local authorities & seek partners to develop health interventions (either Trust led or partnership approach)
- First proposed pilot – Project with Sport England, Dudley (PHE / England Athletics)

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Counter Survey Services

Methodology and Technology

Tracsis has project experience of all counting and sensing technologies:

- Video and manual counts
- Inductive loop counters
- Piezoelectric sensors
- Pneumatic tube counters
- Acoustic detectors
- Passive infra-red
- Bluetooth and Wi-Fi sensors
- Mobile Phone Network Data

All have their pros and cons and many struggle with accurately counting and differentiating pedestrians, cyclists and other users in a canal/river towpath environment.

Machine Learning Video Analytics Sensors provide an accurate, robust and cost-effective alternative for the collection of usage levels for the CRT Evidence Base.



Automatic Pedestrian and Cycle Monitoring

Follow link to view video

<https://www.youtube.com/watch?v=a9ngZ-p88o8&feature=youtu.be>

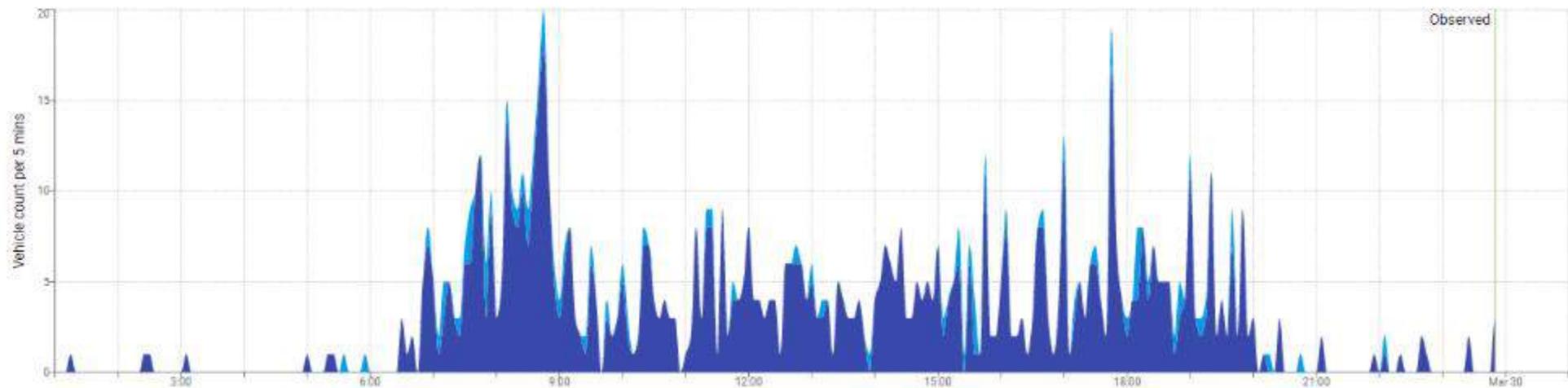


Automatic Pedestrian and Cycle Monitoring



CLASSIFIED COUNTS OVER TIME ▾ IN ▾

DOWNLOAD DATA TAKE PICTURE



pedestrian (91.4%)
cyclist (8.6%)

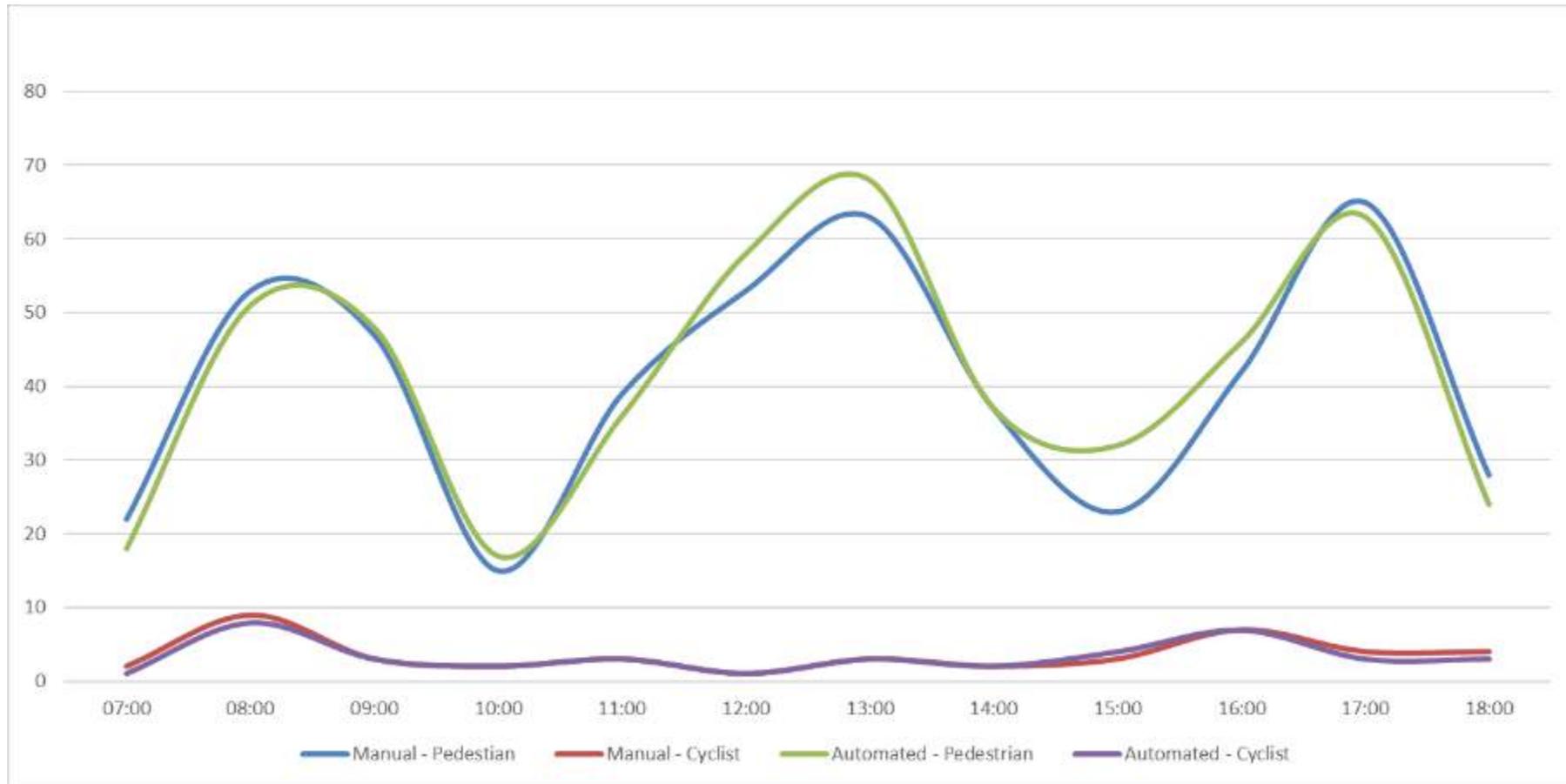
Automatic Pedestrian and Cycle Monitoring

Follow link to view video

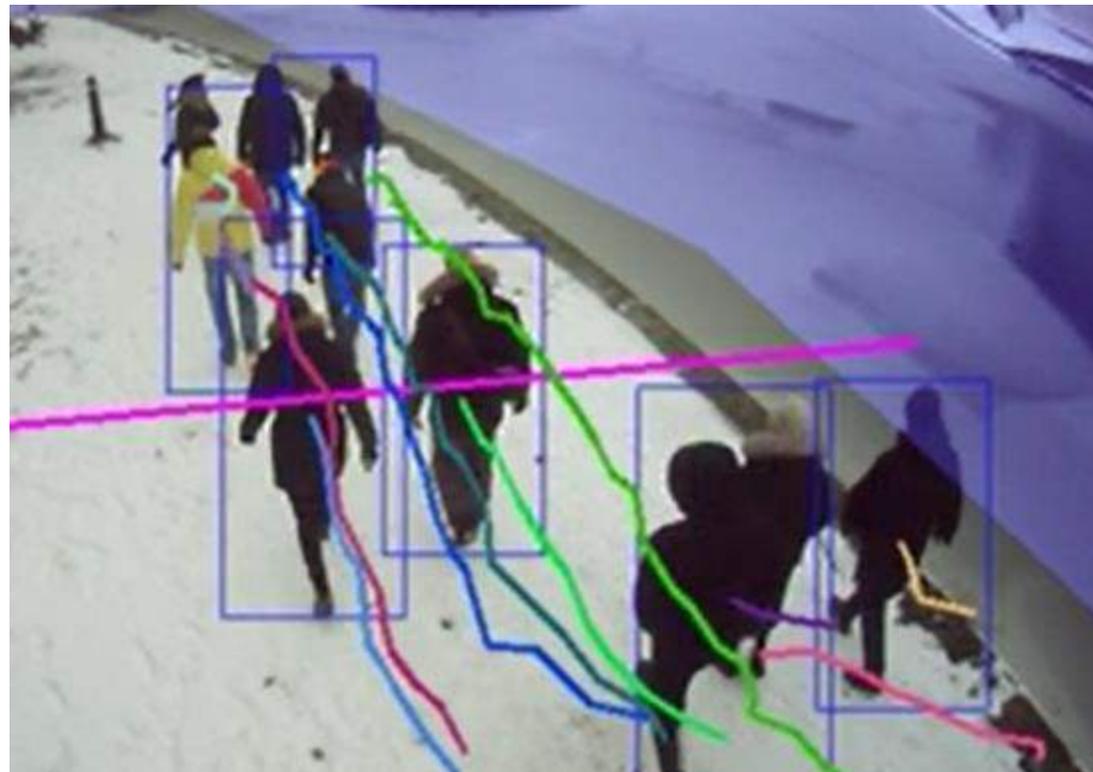
<https://drive.google.com/file/d/1unVg0l9FboU5VaPHhnK7PxNtrjKKFLLP/view?usp=sharing>



Automatic Pedestrian and Cycle Monitoring



Automatic Pedestrian and Cycle Monitoring



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