CITY VERVE AND SEE.SENSE
UNDERSTANDING THE INVISIBLE CYCLIST

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HOW DO WE BETTER UNDERSTAND CYCLIST BEHAVIOUR?
PROJECT AIM

- Generate a source of data and insights that will help the city of Manchester make data driven decisions on provision of cycle planning and infrastructure in Manchester.

- Provide a compelling use case for CityVerve, visualising data in the BT Hub/Platform of Platforms, utilising other data streams available to CityVerve.

- Engage citizens in collection of data and in shaping their city.
IT ALL STARTS WITH A GREAT BIKE LIGHT

See.Sense lights are used by over 30,000 cyclists around the world.

Our dedicated sensor technology detects riskier moments on the road, helping keep cyclists visible by flashing brighter and faster.

ROAD JUNCTIONS

ROUNDABOUTS

FILTERING IN TRAFFIC

CAR HEADLIGHTS
SEE.SENSE \ CYCLING TECHNOLOGY

SEE.SENSE APP CAPABILITIES

ACE connects to our free smartphone app via Bluetooth Low Energy (BLE).

Cyclists opt in to the See.Sense community, giving access to a range of exciting features as well as providing data for the city.
We seek to contribute a comprehensive, standardised and trusted dataset that provides real-world evidence to inform transport policy, as well as the development of infrastructure.

**SAFETY**
Collisions & near miss data

**ROAD CONDITIONS**
Road surface quality data

**PERCEPTION**
Understand experience of cyclists via qualitative surveys

**JOURNEYS**
Origin-destination and journey mapping data
OUR SOLUTION BENEFITS FROM BEING

\textbf{LOW COST}

\textbf{HIGH REACH}

\textbf{HIGHER ACCURACY AND WIDER RANGE OF DATA THAN APPS}

\textbf{MORE REPRESENTATIVE OF EVERYDAY/COMMUTER CYCLISTS}

Popular Days of the Week

Male vs Female Participants

Female 28%

Male 72%
ENGAGEMENT OF PARTICIPANTS

400 cyclists apply
180 cyclists accepted
5 Months of data collection from Oct - Feb
137 cyclists collected data
385 annoyances recorded

4105 Total number of journeys
25489 Total distance covered (km)

SMART CITIES // MANCHESTER
MANCHESTER CITY TRIAL: THANK YOU! \%
Thank you once again for your participation in the See.Sense Manchester City Trial, run in conjunction with BT and CityVerve.

Monthly Newsletter
Public Showcase
Hackathon
Participant Workshop
MANCHESTER MAPPED LIKE NEVER BEFORE

See.Sense Road Roughness Index overlay with Perception Data.

This map shows sections of road that have been identified as ‘rough’ (ranging from green ‘slightly rough’ through to amber ‘medium’ and red ‘very rough’). It is overlaid with perception data (blue dots). These dots represent where someone reports something that annoyed or scared them on their journey.
EVIDENCE TO SHOW PERFORMANCE OF CYCLING INFRASTRUCTURE

These two images show the direction of cyclists on two different sections of road. In both images the yellow lines represent cyclists heading north and blue lines represent cyclists heading south. This section of Oxford Street at St Peter’s Square does not have any cycling infrastructure and the delineation of direction travelled is less apparent. Oxford Road has well demarcated cycling infrastructure which results in clearer delineation as well as a higher average speed.

\*12.8 km/h Average Speed - Oxford Street, St. Peter's Square\*  \*19.4 km/h Average Speed - Oxford Road\*
ROAD CONDITIONS MAPPED ACROSS THE CITY

Our road conditions data strongly correlates with visual, on site, inspection - highlighting areas of road roughness which may be detrimental to the experience of cycling in the city.

\ CLUSTER MAPS OF ROUGH ROADS

\ CORRELATION WITH POTHOLES
ENGAGEMENT WITH CYCLING COMMUNITY

\MAP OF ANNOYANCES

\POPULAR WORDS
MAP COLLISION AND CLOSE PASS HOTSPOTS

Enabling proactive data based responses to improve problem areas
ABILITY TO GENERATE A MANCHESTER GREEN WAVE
CAPTURING INVISIBLE JOURNEYS (OUTSIDE THE DEPLOYED COUNTERS)

Ability to access the data from multiple heterogeneous sources in near real time can give better visibility of how city infrastructure is being used.

Figure 6 displays a view of two types of cycle counters – traditional physical ones (existing hardware on the road, in red) and virtual ones (in blue) created by the data collected from on-cycle tracking devices – shown together, enabling the city to gain better understanding as many journeys (purple) are not captured by physical counters.
“What a smashing tech initiative. Bit of security for you, lots of info for us to inform future infrastructure.”

Chris Boardman
INTERESTED IN WORKING WITH US TO IMPROVE CYCLING CONDITIONS WHERE YOU LIVE?

\ CONTACT

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THANK YOU

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