Sustainable Communities Overview & Scrutiny Panel

22 February 2022

Wards: Borough wide

Smart Cities

Lead officer: Chris Lee, Director for Environment & Regeneration

Lead members: Smart city projects span a number of Cabinet portfolios including;

- Cllr Owen Pritchard. Joint Deputy Leader and Cabinet Member for Performance, Recovery and the Local Economy
- Cllr Martin Whelton. Cabinet Member for Housing, Regeneration and the Climate Emergency
- Cllr Rebecca Lanning. Cabinet Member for Adult Social Care and Public Health

Contact officer: Paul McGarry, Head of Future Merton

Recommendations:

A. That the Panel note the range of current smart city projects in Merton

B. That the panel consider opportunities to use data to embrace the smart cities agenda to improve service delivery.

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1   PURPOSE OF REPORT AND EXECUTIVE SUMMARY

1.1.   As part of the Sustainable Communities Overview and Scrutiny Panel's annual work plan, the Panel requested an overview of smart city technology projects currently underway in Merton. This report provides details of a number of project enabled by the South London Partnership's InnOvaTe project. (I.O.T being a range of Internet Of Things sensors)

1.2.   The Panel are invited to note the range of initiatives underway and discuss opportunities for data to enhance the customer experience and service delivery.

2   DETAILS

2.1.   **Smart Cities**

2.2.   'Smart cities' is a term used to describe the use of smart technologies and data as the means to solve sustainability challenges in urban areas. Many towns and cities are in the process of making themselves smart, using data and technology to improve transport, energy use, health and air quality or to drive economic growth.

2.3.   Internationally, other cities are being planned to be smart from the outset which is somewhat less relevant to Merton; however major projects such as Morden regeneration provide the opportunity to take a holistic approach to sustainability including net-zero carbon and embracing smart city principles.

2.4.   An early example of smart city technology in London was the introduction of the TFL Oyster Card. Initially envisioned to improve the customer experience and mitigate queues at ticket barriers and boarding buses; the scheme now provides rich data on transport usage and service demands. The technology then went onto evolve into other sectors such as the introduction of contactless bank cards and payment by mobile device.

2.5.   The point of embracing smart city technology is to increase resilience and improve the lives of residents and solve challenges we all face in urban life. For example in Merton, our network of gully sensors assists the Council in clearing blockages in advance of a flood event and minimising the impact.

2.6.   For residents, other smart city technologies (outside of Council activities) that improve life include for examples, city-mapper for planning journeys on public transport, bus apps which provide real-time bus arrival times, sat-nav to optimise journey times for residents and businesses who need to drive. Technology is also improving parcel deliveries whereby customers can now track and get real-time delivery information via courier apps and SMS messages.

2.7.   **Current activities**

2.8.   The following sections of the report provide an update on current smart city technologies being rolled out in the borough including;

- Vivacity Traffic Sensors
- Breathe London Air Quality Sensors
- Highway Drainage Gully Sensors
- Merton Local – E-commerce App
- Electric Vehicle Charging
- Parking Bay Sensors
- Social Care Deployment

2.9.   **About the InnOvaTe Project**

2.10.   South London Partnership is working with London Councils to deliver an exciting and innovative "Internet of Things" (IoT) project across the five south London Councils of Croydon, Kingston upon Thames, Merton, Richmond upon Thames and Sutton.

2.11.   This initiative is funded by the Strategic Investment Pot (SIP) as part of the London Councils Business Rates Retention scheme, which is administered by the City of London Corporation, and hopes to improve people's lives through the delivery of a multi-purpose Internet of Things (IoT) platform, which will connect various sensors across borough boundaries.

2.12.   An online map provides information on all sensor locations in Merton as well as data from each sensor (Air Quality, Traffic, and Parking Bay sensor locations) The map can be viewed at:

https://rbk.maps.arcgis.com/apps/dashboards/46867efa3203492a93348ba04ea23f08

2.13. **ViVaCity Traffic Sensors**

2.14. As part of the InnOvaTe project, Merton Council has partnered with Vivacity Labs to install a range of traffic sensors around Merton to improve traffic and active travel insight; building up data and evidence to inform future projects around active travel, road safety and other highway interventions such as Low Traffic Neighbourhoods.

2.15. The sensors use Vivacity's AI technology to provide anonymous data on different transport modes, road users and movement patterns in various locations.

2.16. Initially, the project has installed sensors at the borough entry points which, over time, will present a picture of traffic levels entering and leaving the borough. The sensors are also located in some high footfall areas and are able to provide data on the number of pedestrians, cyclists, cars, vans and HGVs passing through the sensor locations.

2.17. The sensor locations can be found at
https://rbk.maps.arcgis.com/apps/dashboards/46867efa3203492a93348ba04ea23f08

2.18. The map below provides an overview of the sensor locations in Merton
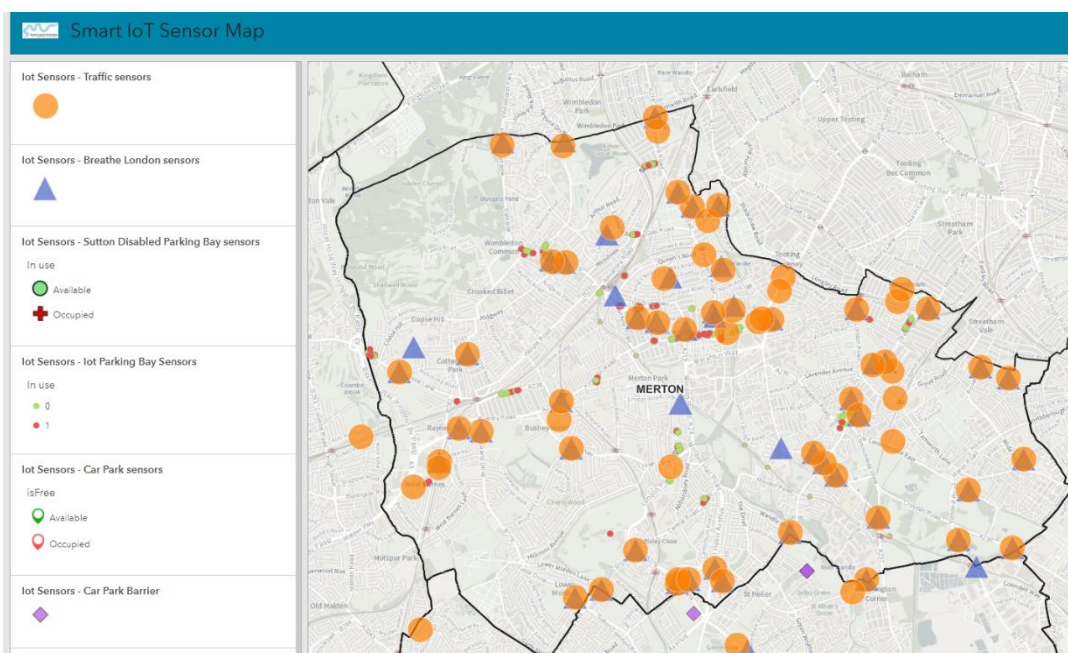
2.19.

2.20. The sites have been identified to provide good insight to cross-borough highway demands as well as footfall data in some high streets. The project will provide the council with an overview of traffic, cycling and footfall patterns across the network to enhance decision making on future investment in the public realm, active travel and traffic management.

2.21. The screenshot below provides an example of the type of data the Council can now access via the traffic sensors. The graphs provide a daily count of pedestrians, cyclists, cars, vans and HGVs which pass the sensors.

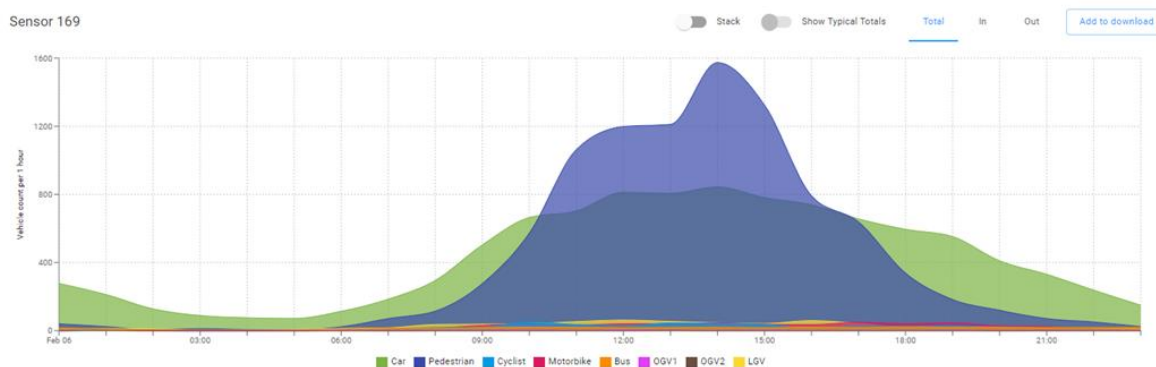2.22. The images below show data from Wimbledon Village High Street on the weekend of 5-6th February 2022.

2.23. **Saturday 5th Feb**

Pedestrians (blue), about 1100 per hour, mid-day 1pm peak, 1400 pedestrians. Cars (green), about 700 per hour
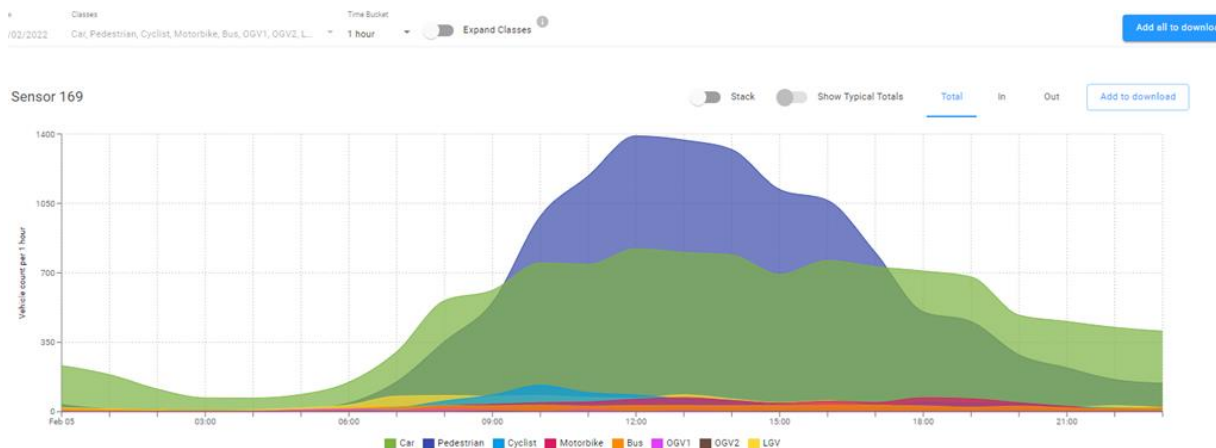
Sunday 6th Feb

Pedestrians (blue), about 1200 per hour 11am-4pm. 1pm-3pm peak of 1600 pedestrians per hour. Cars (green), about 800 per hour

2.24. **Breathe London Air Quality Monitoring Sensors**

2.25. Merton Council is installing 68 air quality sensors around priority locations around the borough

2.26. The 68 air quality sensors will be the highest number of Breathe London Network sensors across the capital. The Breathe London partnership between the GLA and Imperial College runs across London and raises awareness of toxic air pollution.

2.27. Along the air quality monitors, the council will combine 68 Vivacity digital traffic sensors to provide data, as part of the InnOvaTe project. This involves working with artificial intelligence (AI) company Vivacity Labs, using their systems and Internet of Things (IoT) technology.

2.28. The Breathe London air quality monitors and Vivacity traffic sensors will provide accurate data and better insights into pavement usage by pedestrians in town

centres, different transport methods including traffic and cyclist movement patterns and their impact on air quality.

2.29. The patterns can inform planning on how to improve the road network and the urban environment to make the borough smarter, safer and more sustainable. No personal data is collected and the technology cannot be used for enforcement purposes.

2.30. The localised data will help the council meet its air quality targets of being net-zero by 2030 and making Merton a net-zero borough by 2050.

2.31.   With the borough moving into a new normal after the height of COVID-19, the sensors will show how residents have changed their habits and how they now move around their local areas.

2.32. The monitors will also help understanding the local health impact of air pollution and provide data for the most vulnerable in the community.

2.33. **<u>4G Highway Drainage Gully Sensors</u>**

2.34. Merton has implemented an IoT gully sensor system on our highway network, which remotely monitors the drainage network and pre-warns the Council of high silt levels within the road gully, of any defects and floods.

2.35. Merton's cyclical and reactive gully cleaning service is managed by the Public Space team and their term contractor Veolia. In addition to this, Highways term contractor FM Conway are used for the annual High Risk Gully cleansing, highway drainage works and civil repairs to existing assets.

2.36. Merton's "high risk" gulley cleaning focuses on approximately a third of the borough's 17,000 gullies each year. It takes a "smart cities" approach, using smart data gathered from the gullies, pipework and sensors.

This includes:

- Measuring the level of silt in the gulley so we can understand how quickly particular roads or gullies are silting up and what might be causing problems in each area.
- Cleaning gullies ensuring they run free and fixing any damaged council gullies.
- Using GPS and real time IoT data, updating the state of the gulley online so we have real-time information as to what gullies are cleaned and the level of silt since the last cleanse.
- Using CCTV to ensure the gulley and the associated Thames Water sewer is free draining.

2.37. 100 4G gully sensors have been implemented right across the borough on the public highway in critical drainage locations and in areas that are susceptible to surface water flooding such as in Raynes Park, Wimbledon and Mitcham town centres.

2.38. These sensors notify us in real time if the gully's silt level is reaching a threshold trigger level or if it is blocked (for example, if someone pours building waste or

concrete down it) so we target particular blockages and ensure that they are dealt with swiftly to reduce the risk of flooding.

2.39. The sensors not only notifies the end user of the condition of each individual gully, but it also gives an overview of the network's performance prior, during and after each weather event. This sort of data is invaluable when designing cleansing programmes or when drainage modelling is required.

2.40. The data collected from sensors is presented in real time via live feeds onto a web based portal called Map16, which has a dashboard showing map-views, cleansing and defect records, pre-warnings, alert levels, rainfall forecasting and an optimisation dashboard for big data modelling.

2.41. Ultimately, this IoT solution gives greater insight to creating a well-managed and maintained road network, while ensuring resources are focused in locations that require priority attendance.

2.42. **Merton Local: Digital High Street Shopping App**

2.43. The Future Merton team have commissioned Bubltown to develop an e-commerce app for local businesses called **Merton Local.** Primarily the app is about encouraging residents to shop local, stay local and encourage the circular economy, both business to consumer and business to business.

2.44. The Merton Local App will also enable promotion of the local leisure/tourism offer such as events and making the experience of staying local easier. For example parking space details can be linked on the app, details on what's open, what special offers are available to customers.

2.45. The council can use the App for comms/messaging out to residents. The App has the option for businesses to use an affordable local delivery service which will enable local businesses to offer same day delivery to compete with Amazon, Deliveroo, etc.

2.46. Merton Local has been designed so that it is not just retailers who can promote themselves, we hope all businesses will consider the benefits of joining the App for free. The USP is that the business will offer an online incentive to either purchase with a discount code attached or in person visit with the offer. There is a free helpdesk available to businesses and it is designed for the business to self-load details.

2.47. The Council are currently in the stages of design and development with support from Merton Communications Team. Following formalization, we will commence the messaging/promotion to our businesses with the intention of including at least 200 businesses to make it a meaningful offer for residents.

2.48. Once there are a significant number of offers and businesses onboard, we will begin the promotion of Merton Local to residents to download and use the App. We anticipate a launch date in March 2022 and will use social media and on-street advertising to raise awareness.

2.49. **Electric Vehicle Charging**

2.50. Merton has a network of public electric vehicle charge points. These include 6 rapid chargers operated by ESB and BP, 143 Source London charge points and 90 lamp column chargers operated by Char.gy and Surecharge. There are additional publicly accessible chargepoints located on private land, such as the rapid charge points, operated by Podpoint, available in most Lidl car parks in the borough.

2.51. The individual charge point operators have their own websites and apps which show the location and live availability of their chargers, but the number of different operators can make it difficult for residents to identify all the charge points that are available in their area.

2.52. Zapmap brings together information from all the main operators to provide the location of all EV charge points. Zapmap includes live data for some operators including Char.gy and ESB, which is updated every five minutes to show when the charger is in use.The integration of live availability data from all other operators onto the Zapmap platform is being progressed.

2.53. Merton's lamp column chargers do not have dedicated EV only bays. This can create further difficulties for EV users, as even if live data shows that the charge point is available, it may not be possible to access the charger as the parking bay may be ICE'd (i.e. occupied by a standard internal combustion engine vehicle). A potential solution to this that is being further explored with operators and other boroughs, is to use parking bay sensors, as set out in more detail below.

2.54. **Parking Bay Sensors**

2.55. Parking Services have also joined the innovate project to roll-out parking bay sensors. Partners in the trial also include Sutton (42 sensors) and Richmond and Wandsworth (150 sensors)

2.56. The installation of Merton's sensors is complete. The 12 month is expected to go live in March 2022. The Council will then have access to the back office system which will show us real time information such as:

- Space usage info
- No of vehicles that park
- Length of stay
- Date and time of demand

2.57. Data will be gathered over a 12 month period and this can be used to better focus enforcement and for publication of real time space availability info for the public to access. Richer data will also allow the Council to and review parking restrictions.

2.58. The public app via RinGo can be particularly useful for disabled motorists to see where spaces are available and at what time if for example, they have a wheelchair and would not necessarily be able to use a standard sized space.

2.59. The project will deliver

- 500 individual bay sensors
- 94 disabled bay spaces in off-street car parks

- All of Broadway (Wimbledon Theatre) car park with 70 bays, including 8 disabled bays.
- 336 time limited parking bays on-street

2.60. **Social Care deployment**

2.61. Merton's Adult Social Care service linked up with the InnOvaTe project in June 2020. The devices used in Sutton and Richmond were made available to us. The in-home sensors monitor monitors activity in a resident's home, and will pass on information to a nominated carer or support worker. Should there be a drop in activity levels the resident can be contacted immediately to check on their wellbeing.

2.62. To date, we have deployed fifteen sensors across a Supported Living site which has people with a learning disability as tenants. We have placed six with customers of Mascot Telecare, and will roll this out further with a second tranche of Mascot customers. The sensors give an extra level of awareness to people providing support for vulnerable residents, and peace of mind to the householder, who is unaware of the device once it has been activated.

2.63. As well as being easy to install and inconspicuous, the sensors do not collect personal data or make any recordings, so can be a useful tool in persuading people who might be reluctant to have assistive technology installed. With some people this might be a useful first step in maintaining their independence before in time requiring or choosing to add further equipment in their home.

3   ALTERNATIVE OPTIONS

3.1.1   None for the purpose of this update report.

4   CONSULTATION UNDERTAKEN OR PROPOSED

4.1.1   None

5   TIMETABLE

5.1.1   None for the purpose of this update report.

6   FINANCIAL, RESOURCE AND PROPERTY IMPLICATIONS

6.1.1   None for the purpose of this update report.

7   LEGAL AND STATUTORY IMPLICATIONS

7.1.1   None for the purpose of this update report.

8   HUMAN RIGHTS, EQUALITIES AND COMMUNITY COHESION IMPLICATIONS

8.1.1   None for the purpose of this update report.

9   CRIME AND DISORDER IMPLICATIONS

9.1.1   None for the purpose of this update report.

10   RISK MANAGEMENT AND HEALTH AND SAFETY IMPLICATIONS

10.1.1   None for the purpose of this update report.

11   APPENDICES – THE FOLLOWING DOCUMENTS ARE TO BE PUBLISHED WITH THIS REPORT AND FORM PART OF THE REPORT

- None for the purpose of this update report.

12   BACKGROUND PAPERS

12.1.   Web links are provided in the body of the report.

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