Report of Director of Resources and Housing

Report to Scrutiny Board (Infrastructure, Investment and Inclusive Growth)

Date: 19th February 2020

Subject: Smart Cities: Delivering a sustainable City in the Digital Age - Update

Are specific electoral wards affected? If yes, name(s) of ward(s):	☐ Yes	☒ No
Has consultation been carried out?	☐ Yes	☒ No
Are there implications for equality and diversity and cohesion and integration?	☐ Yes	☒ No
Will the decision be open for call-in?	☐ Yes	☒ No
Does the report contain confidential or exempt information? If relevant, access to information procedure rule number: Appendix number:	☐ Yes	☒ No

1.   Purpose of this report

1.1   To provide an overview of the smart cities agenda and an update on the Council's Smart Leeds programme.

1.2   To recommend a strategic approach that will build on the foundations of Smart Leeds to ensure the city maintains its place as one of the UK's leading smart cities.

2.   Background information

2.1   A 'smart city' is a place that maximises the potential of all of its assets: people (skills, endeavour), information and data (from all parts of the city), businesses and things (devices, technology) that when combined are more than the sum of its parts.

2.2   The world's most successful cities have smart programmes. London has been ranked by Forbes as the world's smartest city[1] in 2019 due to its attractiveness to tech start-ups, innovation and data publication. Leeds has signed a declaration to

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[1] World's Smartest Cities 2019 (Forbes)
https://www.forbes.com/sites/iese/2019/05/21/these-are-the-smartest-cities-in-the-world-for-2019/#49d7ea891429

work increasingly closely with London to share best practice and collaborate on projects that benefit both cities.

2.3 A smart city is where citizens, voluntary, public and private sectors co-operate to achieve sustainable city outcomes and increase economic competitiveness. The ability to share and exchange information across a whole city system will both contribute to better lives and outcomes for the people of Leeds.

2.4 An example of a smart city application would be where data is collected that monitors the humidity, temperature and CO_2 levels in a person's home. Combined, this data would help the Council to manage its properties better and improve outcomes for tenants, especially those living in fuel poverty or those with health conditions such as COPD.

2.5 The diagram below shows the Digital and Information Service (DIS) ecosystem and how Smart Leeds is central to the expanding scope of work that the service oversees.
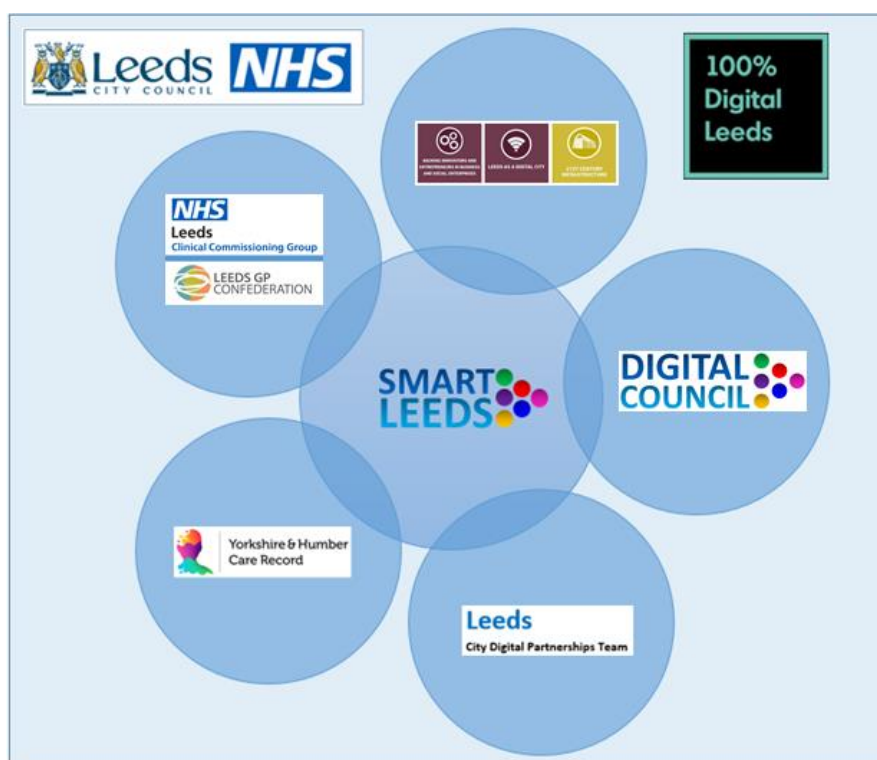
2.6 Under the leadership of the council's Chief Digital and Information Officer, the last two years have been significant in progressing the council's smart cities agenda that focuses on ensuring the council and its partners can get the most value from technology and data. DIS has a whole-system view of Leeds, spanning service boundaries, and focuses on achieving the best outcomes for Leeds. It is therefore best placed to ensure that:

- We collect the right data and that it is understood and utilised in the best way to aid data-led decision making, resulting in targeted services and improved outcomes.

- New applications that are procured by Council services can be linked up. Traditionally, tech companies have restricted access to their platforms meaning that any updates need to go through them, leading to higher costs and less innovation.

- Managers consider digital when delivering their services, which might not just benefit their service but also others in the organisation. For example, the new LED street lights include a standardised socket that allow additional devices such as air quality sensors or car counters to be fitted.

2.7 Leeds is regarded as a forward thinking, innovative city that is ahead of the curve. In 2019 the Council and employees were recognised by winning awards including Digital Leaders Regional Champion and Digital Council of the Year, Smart Cities UK Digital Leader of the Year, BEM for services to Libraries and Digital Inclusion and Women in IT Excellence for TechMums.

2.8 **SMART CITY PRIORITIES**

The Smart Leeds programme focuses on the following priority areas. The Smart Leeds Commitments document (Appendix 1) provides more detail about ongoing and future projects. Here are some examples of key work that is taking place:

2.8.1 Health and Wellbeing
Smart Leeds has a role to play in the "left shift" towards increased self-care and prevention that can lead to earlier intervention that costs less and results in better outcomes for patients and citizens:

- **DEVELOPMENT:** *Helm* is a solution that will help citizens make more informed decisions about their wellbeing choices through access to their health and care data. (Project in development)

- **ACTIVE:** *CareView* is an app to help front line community staff (e.g. social workers) to identify instances of social isolation and target resources in the right places.

- **ASPIRATIONAL:** *Smart speakers* (e.g. Alexa) could support those living with dementia or enable people to live in their own homes for longer. The Council is undertaking discovery work to review how these could support existing care plans.

2.8.2 Travel and Transport
As the city grows in size and population, we need to look at how technology can assist people to get around the city/region and promote sustainable methods of transport:

- **ASPIRATIONAL:** The Council is supporting WYCA to introduce a *Multi-modal Transport* app that enables people to buy a single, cheaper ticket if it comprises multi-modal journeys.

- **ASPIRATIONAL:** A *Smart Cycling* app that uses location data from cyclist's phones to prioritise their use of the highway over cars (similar to bus priority lanes) is being investigated that could improve journeys and the take-up of cycling.

- **ASPIRATIONAL:** Extensive publication of *traffic data* that will be used to better understand traffic flows and the impact of road closures on other parts of the network.

Some of these are also designed around influencing a change of behaviour in the way people travel to modes that are greener and contribute to better flow.

2.8.3 Housing Standards and Growth
The Council is the largest landlord in the city. Through the use of technology and better use of data, it will lead by example and encourage improved standards of homes across the city:

- **DEVELOPMENT:** The *Council House of the Future* programme is reviewing how technology can assist with the housing management and improve tenants' experience, health and wellbeing. If successful, these capabilities could be made available to privately owned homes too.

- **ACTIVE:** The government-funded *GovTech Catalyst* programme is focusing on how sensors can help improve the quality of Council homes and tenants' health.

- **ACTIVE:** *Free Wi-Fi* is being trialled in a number of Council tower blocks that is contributing to improving digital inclusion by helping people get the most out of being online such as reducing their energy bills or finding employment.

2.8.4 Climate Emergency
Improved data collection and the use of new technology can assist with a better understanding of the environment and lead to improved decision making and behaviour change:

- **ACTIVE:** The introduction of low energy *LED street lights* will reduce energy usage and CO2 emissions. Smart dimming technology will enable further savings.

- **ACTIVE:** A project is looking at how the Council can promote the use of technology and sustainable modes of transport to reduce *in-work travel ('grey miles')*.

- **ASPIRATIONAL:** Messages can be sent to citizens to alter their travel arrangements based on real-time *air quality and weather sensor data*.

2.9 FOUNDATIONS

It's important to have the foundations in place in order to assist with the delivery of these priorities and underpin the Smart City. Significant work is taking place in a number of areas, namely:

2.9.1 World Class Connectivity
To assist the Council in delivering the best services, provide full fibre connectivity to both urban and rural areas, and to attract inward investment/enable business to thrive, it's important that Leeds has world-class connectivity:

- A procurement exercise is nearing completion which will result in the Council working with a partner to roll out full fibre connectivity to 1,400 public sector buildings.

- A district-wide LoRaWAN network will to support smart street lighting network will also enable other sensors (e.g. air quality and footfall) to be deployed anywhere.

A fuller update on this scheme is provided in the Digital Inclusion paper on this agenda.

2.9.2 <u>Data and Joined-up Analytics</u>
New technology offers the opportunity to collect data more easily and allows it to be combined with data from other sources to provide a holistic understanding of services:

- The Council manages one of the largest open data (publication of non-personal data) platforms in the UK, **Data Mill North**, which has facilitated the creation of numerous apps and websites including Social Housing Picker and Leeds Bins.

- The Health and Care Hub (a joint team between LCC Public Health, NHS Leeds CCG and Adult Social Care) have developed the Leeds Data Model, a whole system analytical platform that provides greater insight into Population Health in Leeds to inform better commissioning decisions and targeted interventions.

- **RAIDR** is an innovative tool that is enabling the smoother flow of patients across the system and shows real time information on availability of spaces across different care settings.

- Work has commenced to review how the Council better manages data. A next-generation **Data Platform** must improve the publication of open data, improve data sharing between partners and improve the presentation of data through charts and visualisations to make it more understandable to more people.

This is an area where more work is required to get services and partners to contribute more data into the data platform and take a more joined up approach to analysing data to provide greater insights and value.

e.g. (i) Through a combination of data from different sources, other authorities are processing automatic entitlements for people who may not ordinarily apply. E.g. school clothes entitlement, free bus passes.

e.g. (ii) Through a combination of more data on all highway and building schemes and plans across the city by the Council and importantly partners, future city models could be developed to demonstrate the impact and inform more coordinated approaches and synergies.

* These examples are not straight forward to deliver but are here to exemplify what could be done.

2.9.3 <u>Digital Inclusion (100% Digital Leeds programme)</u>
It's critical that our citizens and workforce have the capabilities to ensure that they are not excluded in what is becoming a digital world:

- A **£100,000 grant scheme** is providing support to community groups to improve digital skills through training, connectivity and equipment.

- **Free council Wi-Fi** has already been rolled out to 10 community buildings with a further 10 due to be completed by June, enabling more people to get online.

- The **largest tablet lending scheme in UK** is providing people with the technology and support to get the most out of being online.

A fuller report is provided as part of an ongoing inquiry on the agenda of this board.

2.9.4 <u>Collaboration</u>

The Smart Leeds programme is a 'council-led' programme rather than simply a council one. It's important that we leverage the skills and resources from

individuals and organisations outside of the Council to assist with the delivery our objectives.

- The Council collaborates with co-working spaces such as ***ODI Leeds*** and ***Co>Space North*** on its Innovation Labs to solve city problems. These have resulted in solutions such as CareView that is identifying instances of social isolation and Leeds Adult Learning which is helping adults to improve their skills.

- The Council continues to support ***Leeds Digital Festival***, the largest digital festival outside of London, which attracts increasing numbers of participants from the digital community.

- The creation of a ***Living Lab*** is being investigated which will provide a neutral space where new technology can be trialled that will assist the Council with developing business cases for wider roll out.

- To learn from others, share expertise and avoid duplication, the council is linked up and contributes to forums and groups such as ***UK Councils Smart City Advisory Group***, ***Eurocities*** and ***Open and Agile Smart Cities***.

3   Main issues

3.1   In addition to the Full Fibre Connectivity and 100% Digital Leeds programmes that are reported to this Board separately, it's important that as an organisation we improve on the collection, management and utilisation of data. The focus of the Smart Leeds programme over the forthcoming year is on:

- Improved data usage and collection
- Utilising of Internet of Things (IoT) devices
- Increasing collaboration to deliver improved outcomes
- Measuring success

These four areas have been expanded on below:

3.2   <u>Improved data usage and collection</u>

3.2.1 Leeds is often seen as a leader in the publication of open data, that is, non-personal and non-commercially sensitive data and has regularly been asked to contribute to Local Government Association discussions on the issue. Publication helps the council be more transparent and enables the developers to reuse the data in their own apps and websites.

3.2.2 In the 6 years since the introduction of the Data Mill open data website, technology has improved which could assist the Council in delivering services and managing data. To derive the best value from Council data we need to invest in a next-generation city data platform that can:

- Improve data-led decision making using 'real-time' data
- Improve sharing of data
- Provide a better understanding of data using visualisations
- Reduce FoI requests
- Increase reuse by parties outside of the Council
- Offer better insights into our communities

Discovery work is currently being undertaken to identify initial use cases that will be used to provide value, identify functionality requirements, data sources, users and the costs of build and deployment. This work is expected to be completed by the end of March 2020 and recommendations will follow early in the new financial year.

3.2.3 New technology enables us to collect increasing amounts of data in new ways. This does, however, bring about new data governance and ethical challenges such as where and how the data is stored, who has access to it and what it will be used for. The Information Governance team is therefore producing a framework that will focus on the emergence of new technology and how we will ensure that the collection of data is done appropriately and ethically. DIS, service users and potential suppliers will be required to provide specific information about the technology and how the data will be managed/used to provide evidence that data concerns have been considered and acted upon.

Leeds City Council and the Greater London Authority both recognise that new technology offers many opportunities and that we can benefit from working together to shape a standardised approach on how we collect and reuse data. Both parties have therefore signed a Smart Cities Joint Declaration (Appendix 2) through which we have committed to working on areas such as the ethical use of data, understanding how artificial intelligence can improve services and digital literacy.

3.3   Utilising Internet of Things (IoT) devices

3.3.1 As part of the Smart Street Lights deployment (i.e. new LED lights that can be dynamically controlled), an IoT Network is being installed across the metropolitan district. This will not only manage the lights but also enable the deployment of new devices (IoT) for the collection of data in real time, including:

- Air quality (to understand poor air quality 'hot spots')
- Road temperature (for efficient road gritting)
- Damp monitoring (improve social housing standards)
- Gulley monitoring (identify gullies that are becoming blocked)
- Adult Social Care (support people to stay in their own homes for longer)
- Footfall counting (improved town/city centre management)
- Vehicle counting (improved real time traffic monitoring)
- Infrastructure monitoring (understanding bridge/road stability)

3.3.2 Added value comes when datasets are combined, for instance, linking air quality, vehicle count and Met Office data. Climate Change colleagues could use this to deliver real time messages through text or apps to influence behaviour change (e.g. use public transport rather than their car).

3.3.3 Services will be able to use this data to monitor conditions and assist them with decision making. For example, daily reports enable Housing Leeds to target homes that have recently fallen below a 'damp threshold' meaning that tradespeople can be deployed in the right places to investigate.

3.3.4 Discovery work is currently taking place to better understand the technical requirements of the network and how it might be deployed. This work is likely to conclude by April 2020 with the network build completed by summer 2020.

Delivering insights is one part of the solution, there is likely to be a need for services to change what they currently do as a result in order that benefits are fully realised.

3.4   Increasing collaboration to deliver improved outcomes

3.4.1 The Council's Innovation Labs focus on identifying a 'city challenge' and then working with a variety of stakeholders to co-design and produce citizen-focused innovative solutions. These have led to solutions such as Leeds Bins, Leeds Adult Learning and Social Housing Picker.

The Council must use its influence to gain the assistance from other actors in the city/region to help deliver its objectives. For example, early discussions are taking place with White Rose Office Park to develop a mini 'smart city' on their site that will be a demonstrator of how the innovative and combined use of technology and data can contribute to addressing the global challenges of health and wellbeing, the climate emergency, travel and transport, social inclusion, housing and security. Successful outcomes from projects will inform business cases for the wider deployment across Leeds and beyond.

3.5   Measuring success

It's important that we can track progress of the initiatives being delivered as part of the Smart Leeds programme. As outlined below, some indicators to monitor progress areas already exist. Smart Leeds will focus on how it can contribute to the success of these. Indicators in other areas are still being identified and, as smart cities is still an emerging concept, are likely to change:

3.5.1   Health and Wellbeing

- Number of people signed up to Helm (new)
- Number of people identified using CareView (new)
- Number of people whose needs were met as a result of CareView (new)
- Reduction in health associated travel through the adoption of technology (new)

3.5.2   Travel and Transport

No indicators have currently been defined by the Sustainable Transport team however the following data is being collected which will contribute to Smart Leeds projects focusing on sustainable travel.
- Council Metrocard usage (currently 22 in different buildings)
- Number of e-Bikes (currently 8)
- CarClub usage, Cycle to Work scheme, Taxi usage and Travel Surveys

3.5.3   Housing Standards and Growth

- Reduced incidences of damp in council properties through the monitoring of environmental indicators (existing)
- Improved identification of those living in fuel poverty in council owned properties (existing)
- The scope of the 'Council House of the Future' programme is still being outlined and additional indicators will be identified once this work has completed.

3.5.4   Climate Emergency

- Reduced carbon emissions across the city (existing)
- Number of households in fuel poverty (existing)
- Improved energy and thermal efficiency performance of houses (existing)
- Lower CO2 emissions from Council buildings and operations (existing)

3.5.5   World Class Connectivity

- The Full Fibre Network is still at procurement phase and, as such, indicators are still to be defined. Further details of the scope and progress of the project can be found in the 'Powering up the Leeds Economy through Digital Inclusion' report, which is also submitted to this Board.

3.5.6 Data and Joined-up Analytics

- Number of council open datasets (new)
- Number of 3rd party open datasets (new)
- Number of FoI requests answered through the publication of open data (new)
- Number of IoT devices deployed and their uses/outcomes (new)

3.5.7 Digital Inclusion (100% Digital Leeds programme)

- Further details of the progress of the programme can be found in the 'Powering up the Leeds Economy through Digital Inclusion' report, which is also submitted to this Board.

3.5.8 Collaboration

- Number of Innovation Labs delivered and their outcomes (new)
- Number of city events and their reach (e.g. Leeds Digital festival) (new)
- Value of external funding secured and outcomes (new)

4 Corporate considerations

4.1 Consultation and engagement

- Smart Leeds has been considered, reviewed and approved by the appropriate council officer boards and Lead Member.

4.2 Equality and diversity / cohesion and integration

- Equality, diversity, cohesion and integration requirements are embedded in all planning processes for Smart Leeds.

4.3 Council policies and the Best Council Plan

- The outward-facing Smart Leeds programme is led by DIS which is able to take a cross-organisation view. It contributes directly to Health & Wellbeing, Inclusive Growth, Age Friendly, Sustainable Infrastructure and Housing strategies.

- The 'Leeds as a Digital City' strand of the Inclusive Growth strategy is underpinned by the Smart Leeds programme. In particular, delivering the 100% Digital Inclusion and Full Fibre Programmes as well as developing the environment for digital innovation to solve some of the city's difficult problems. A Smart City with these key foundations are a significant differentiator in terms of attracting inwards investment and enabling Leeds companies in the Digital age.

4.4 Resources, procurement and value for money

- The report supports the Council's values of spending money wisely, being open & transparent, and working as a team for Leeds.

- Management of the Smart Leeds programme is overseen by DIS and funded through a mix of existing budgets and external grants (e.g. GovTech, NHS Digital etc.) To improve the effectiveness of the programme and the wider activity of work, DIS is currently undertaking a Target Operating Model exercise to ensure resources are targeted in the right areas.

- There are many projects taking place across the Council that could be referred to as smart city projects (e.g. Smart Lighting, Council House of The Future, eBikes). In addition to leading on some of these projects, the Smart Leeds programme offers a co-ordinating role of raising awareness, identifying where linkages can be made to reduce silos and promote a whole-system approach to working.

4.5 Legal implications, access to information, and call-in

- Decisions would not be subject to call-in and there are no specific legal implications or issues relating to access to information.

4.6 Risk management

- If Leeds does not have a co-ordinated smart cities approach, there is a risk that other cities may take the lead in this area and also the investment and talent. It's important that Leeds continues to champion its smart city credentials and promotes itself as an innovative city that welcomes cross-sector partnership and collaboration.

- Smart cities work needs to be increasingly co-ordinated across the council. It is important that all innovative work (e.g. procurement of devices that manage city operations, buildings, traffic, apps and analytics tools) is fed through the Smart Cities Steering Group. This approach was approved by the Executive Board in 2014 to avoid duplication and/or risk collaborative opportunities being missed.

- Use of new technology and collection and reuse of data needs to be managed carefully. The risk of not taking advantage of this new technology may result in increased costs and the targeting of services/resources in the wrong areas.

5 Conclusions

5.1 <u>Improved data usage and collection</u>

Data is an increasingly important feature of how we deliver services. New technology allows us to better understand what is happening in our homes, communities and the wider city. Understanding where we need to deliver services and having the ability to be proactive can lead to reduced costs and improved outcomes. It's important however that as an organisation we have the right tools and skills and that we have the right governance in place to ensure we manage and

process this data in the right way.

5.2 Utilising Internet of Things (IoT) devices

The installation of the new Smart Street Lighting Network will also enable other devices such as air quality and flooding sensors to be deployed. These use cases will need to be considered on a project-by-project basis to ensure that the right devices are procured that improve outcomes. DIS will work closely with services and Information Governance as this technology becomes more mainstream to ensure standards and governance procedures are adhered to.

5.3 Increasing collaboration to deliver improved outcomes

It's important that the Council uses its influence to take advantage of the skills and resources that exist in other sectoral organisations. The universities are increasingly looking to the Council for data sources to assist academics with their research, which in turn is providing added insight for the Council. Private sector organisations are increasingly wanting to work with the Council to test their new technology in a 'real world' environment (e.g. on buildings or lamp-posts). Working with these companies could provide the Council with useful information that could assist with business cases focusing on the wider city deployment of technology.

5.4 Measuring success

It's important that we're able to monitor the success of the Smart Leeds programme and that the projects that are delivered under this banner are leading to improved outcomes and/or lower costs. It is recognised that the indicators outlined in this report are a first step to monitoring progress and that these will need to be further defined/amended as the programme matures.

6 Recommendations

6.1 Support the work to improve data usage and collection through investigating how a next-generation city data platform will enable the Council to derive more value from data and through working collaboratively with cities such as London on shared data models which will review standards and information governance.

6.2 Endorse the approach of working increasingly with partners from all sectors (e.g. universities, other councils, tech companies) to continue to promote Leeds as one of the UK's leading smart cities by testing and trialling new technologies that can lead to improved outcomes for citizens.

6.3 Support the work to review how IoT devices can assist with understanding the city environment to improve decision making, and work on use cases that enable the testing of these devices that can assist with business cases and city wide deployment.

6.4 Approve the introduction of indicators to track progress and suggest changes or where additional ones should be included. These indicators will be review annually to identify if the correct ones have been identified and are delivering better understanding of progress.

7 Background documents[2]

7.1 None

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[2] The background documents listed in this section are available to download from the council's website, unless they contain confidential or exempt information. The list of background documents does not include published works.

OUR CITY

With nearly 800,000 residents and over 29m visitors annually, Leeds is the third largest city in the UK.

Through our Inclusive Growth Strategy, we're shaping a compassionate city that has a strong economy benefitting everyone, where people and businesses grow, and where inequality and deprivation is reduced.

Our mission is to be the 'best city for digital'. Through Leeds City Council's Smart Leeds programme we will deliver new and innovative services and solutions which improve citizens' lives.

We will promote Leeds as a city 'test bed' where innovation is embraced, and build on existing foundations which have made Leeds a city where people want to invest, visit, live, study and stay.

FOUNDATIONS

It's important that we get the basics right.

To build the 'smart city', we need; the best digital infrastructure; to ensure people have digital skills; to promote the publication and reuse of open data; to make informed data-led decisions; and to work collaboratively across all sectors.

These are the foundations upon which we will build a smarter Leeds.

WORLD CLASS CONNECTIVITY

WE ARE working with government and private sector suppliers to ensure people and communities have access to the best possible broadband speeds.

WE ARE exploring all opportunities for Leeds to become a test bed for 5G and Small Cells.

WE ARE building a district-wide Long Range Wide Area Network which will bring about Internet of Things opportunities.

WE ARE equipping more community buildings with free council wi-fi.

WE WILL work towards equipping all council houses and flats with access to the lowest priced broadband.

WE WILL deliver Full Fibre broadband to public buildings across the district to speed up the further roll out to residential and commercial premises.

DIGITAL LEADERS Winner 100
Leeds City Council Digital Council of the Year 2019

IMPROVING DIGITAL SKILLS AND CAPABILITY

WE ARE delivering the 100% Digital Leeds programme, increasing the capacity of the third sector to give residents the skills they need to improve their lives through digital.

WE ARE building the UK's largest and most successful tablet lending scheme to give third sector organisations the equipment and connectivity they need to pilot new approaches to digital inclusion.

WE ARE helping community groups to deliver digital inclusion at a hyper-local level through a £100k grant scheme.

WE ARE installing free wifi in more community locations.

WE ARE creating a network of Digital Champions who promote the benefits of digital inclusion, signpost people to training and support their neighbours, communities and colleagues.

WE ARE working with Good Things Foundation and encouraging organisations to join the Online Centres Network, which works to tackle digital and social exclusion.

WE ARE hosting events and workshops for community groups, bringing organisations together to raise awareness and expand the digital inclusion network across Leeds.

COLLABORATION AND TECH FOR GOOD

WE ARE working collaboratively across all sectors to create and deliver new and improved services.

WE ARE working closely with partners to realise the benefits of what open data can do in aligning to our smart city priorities.

WE ARE promoting the 'tech for good' movement where new innovation brings about positive impact and change to people and communities.

WE ARE working closely with the hospitals and universities to promote, influence and take advantage of the city's new Innovation District and Living Lab.

WE ARE working with stakeholders from a variety of backgrounds to create innovative solutions to city challenges through our award winning Innovation Labs process.

WE WILL investigate the creation of a city Living Lab to test new innovation prior to large scale deployment.

WE WILL extend our public engagement work to ensure more citizens are involved to make sure citizens are involved at every stage.

OPEN DATA AND ANALYTICS

WE ARE working with other organisations in the city and across the North to encourage them to open up their data for the benefit of the city.

WE ARE working towards creating a Leeds Office of Data Analytics which will analyse and interpret data from a variety of sources to provide insight.

WE ARE working with city experts such as the Leeds Institute of Data Analytics who can interpret 'big data' which can help inform decision making.

WE WILL explore how Machine Learning and Artificial Intelligence can assist us with better data-led decision making.

WE WILL continue to develop and promote the Data Mill North brand across the region build on the progress made already with opening up council data and work towards being increasingly 'open by default'.

WE WILL increasingly use and make available spatial data which can help us better understand our communities and improve services.

PRIORITIES

Leeds is a one of the most popular and fastest growing cities in the UK bringing about benefits, opportunities and challenges.

A growing population is adding to existing housing shortage pressures, increased traffic on our roads continues to be a problem, and an increasingly ageing population means extra pressures on our health and social care system.

Furthermore, we recognise that as one of the largest cities in the UK, we have a duty to clean up and protect our environment for future generations.

With 3 world-class universities, NHS Digital, NHS England, one of the fastest tech sectors in the UK, ODI Leeds and Co>Space North and the UK's only internet exchange north of London, Leeds is well placed to face these challenges head-on.

Housing Standards and Growth, Travel and Transport, Climate Emergency, and Health and Wellbeing are our main priority areas.

That's not to say we're not doing lots elsewhere because we are; these areas however offer the greatest opportunities to positively impact on all of our lives and improve the health of the poorest, the fastest.

We see technology and innovation as an enabler to helping us deliver new and innovative services to those who live, study, work and visit our great city.

Ours is a collaborative approach. Leeds is bursting with skills, enthusiasm and a can-do approach. Bringing the right people together will enable us to ensure our city continues to grow and provide the best opportunities for all.

> " *Local government in Leeds has shifted and it's about enabling better outcomes for people and business, rather than an inward focus on service efficiency.* "
>
> Dylan Roberts, CDIO, Leeds City Council

HOUSING STANDARDS AND GROWTH

WE ARE promoting the 'Leeds Standard' as the sustainable standard for all new homes to be built to.

WE ARE investigating how smart sensor technology can help us manage our housing stock more efficiently.

WE ARE working with government and the private sector to investigate how technology can help us manage our council houses and improve health outcomes.

WE ARE continuing to work with residents to ensure they understand the roll out of the online-only Universal Credit system.

WE ARE delivering free and low cost wi-fi to some council flats and community buildings.

WE ARE using data about housing in the city to target cost effective carbon reduction measures focusing particularly on the council's portfolio of homes.

WE WILL identify smart ways of assisting council tenants to report repairs and contact the council for assistance.

WE WILL work with council tenants to ensure they're prepared for the roll out of the online-only Universal Credit system.

TRAVEL AND TRANSPORT

WE ARE investigating how smart sensors can assist drivers with finding the nearest parking spaces.

WE ARE redesigning city centre routes to promote sustainable travel and improve air quality.

WE ARE improving the East Leeds Orbital Ring Road which will involve installing gigabit fibre broadband to improve traffic management.

WE ARE bringing West Yorkshire's urban traffic management & control centre under one roof to improve traffic flows across the region.

WE ARE investigating how 'demand responsive travel' can enhance the existing public transport offer.

WE ARE developing our signal control technology to rebalance traffic light priorities towards sustainable transport modes.

WE WILL promote the city centre as a 'walkable city' using technology to highlight activities, increasing dwell time and spend.

> " *If we can use information, data and artificial learning to target our resources more intelligently, it could have a massive benefit.* "
>
> Adam Crampton, Housing Leeds

HEALTH AND WELLBEING

WE ARE promoting the use of open data and data analytics to improve health and wellbeing outcomes.

WE ARE leading with healthcare partners across the region to deliver Local Health and Care Record Exemplar programme.

WE ARE working closely with health colleagues, universities major digital companies and SMEs to investigate how technology can deliver better outcomes through innovative health and social care solutions.

WE ARE continuing to develop and promote the Personal Held Record, Helm, providing patients with the ability to manage their own health data that will span Yorkshire and Humber.

WE ARE working with Public Health and communities to develop the CareView app for the city to address social isolation.

WE ARE working with the health sector to promote the Leeds Care Record providing a joined-up approach to sharing health data.

WE ARE ensuring the digital inclusion work has a strong focus on people with health, care and support needs.

WE ARE investigating how we can bring together community open data from a variety of different organisations and sectors into a single repository to reduce duplication and promote common standards; providing the end user with a single, accurate and trusted source, no matter where they land.

WE WILL investigate and test how new generic digital products, such as wearables, Internet of Things, smart speakers etc. can assist people to better manage their health and care and to tackle social isolation.

> "Leeds has a strong history of innovation. Providing information and data to people about their own health and wellbeing will help them take control of their own lives."
>
> Mick Ward, Adults & Health

CLIMATE EMERGENCY

WE ARE introducing a new Clean Air Zone to improve the city's environment and bring about health benefits for all.

WE ARE collecting city centre air quality data which will be used as part of a Leeds Beckett University Heat Island Effect study to help us better understand the urban environment.

WE ARE the lead local authority for hydrogen conversion in the country with a vision that Leeds could be one of the first cities in the UK to convert to 100% hydrogen.

WE ARE installing Leeds PIPES – the city's flagship District Heating Network.

WE ARE replacing all street lights with LEDs and introduce more part night operation into a further 8,000 lights that will eventually result in a carbon saving of approximately 8,823t CO_2 per annum.

WE ARE working towards upgrading the entire council 350-strong vehicle fleet to electric, the largest local authority electric fleet in England.

WE ARE investigating how we can reduce in-work travel to help reduce the city's CO_2 emissions.

WE WILL look into how Internet of Things devices can help us improve our environment.

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SMART LEEDS

Leeds CITY COUNCIL

SMART LEEDS is a Leeds City Council programme.

APPENDIX 2 CITY-TO-CITY SMART CITIES DECLARATION GREATER LONDON AUTHORITY AND THE CITY OF LEEDS (1/2)

This Declaration is entered into as of 17 December 2019 by and between the Chief Digital Officer of London (London) and the Chief Digital and Information Officer of Leeds (Leeds). The purpose of this Declaration is to outline an understanding between London and Leeds in order to create a framework for collaboration in making, sharing and reusing digital technology for the benefit of citizens.

This Declaration affirms our collective ambition for city services in the digital age, and our commitments to realising it. It commits us working together to build our respective capabilities to design services and new business models that best meet the needs of citizens; offer the flexible tools and services; protect citizens' privacy and security and deliver better value for money.

NOTES

1) The digital era means never before has it been possible to collaborate so effectively, to deliver services across, to interrogate our data so insightfully, to realise such great efficiencies, and to reshape public services for the benefit of citizens;

2) Leeds and London have a common perspective which is not just to look at how services can be transformed through digital, but to look at how the service model can be changed as a result of digital and in particular how better outcomes are achieved for people, places and businesses in our respective places and in some cases designing existing services out;

3) The growing role of city government in adopting digital technology and services to meet social, environmental and economic challenges faced by our citizens;

4) London and Leeds have both set out ambitions plans to mobilise our respective cities' people, assets and data to improve quality of life.

The CD/IOs of the two cities mutually set forth the following understandings:

1. COLLABORATION

The parties will: share use cases, best practices and expertise in the field of digitalisation, data and artificial intelligence use; share experiences on code and collaborating on joint-platforms; enable city staff to exchange experience on identified work streams to grow in-house talent; explore possibilities to design a joint open-calls to meet common needs across two cities.

THE ACTIVITIES WILL FOCUS ON:

Data: Collaborative working on future development of city data platforms (Data Mill North and London Datastore), specifically:

- Agree a shared set of design principles that will influence our decision making to help us choose the options and deliver solutions that will further the open data and sharing objectives we share. For example, this will include principles that will directly influence the procurement and selection of IT systems that have to make the data they hold openly available and consumable.

- Jointly work on a shared outline business case and value proposition for a City Data Platform that will consume data from data providers and orchestrate access to that from ecosystems that include private sector, public sector, academia and others.

- Jointly work on a technical requirements document for the City Data Platform that can securely provide sensitive and open data. (Next generation Data Mill North / London DataStore).
- Jointly provide a lobbying position on data strategy to government.

- Jointly consider and commission marketing and promotional material to data consumers.

- Jointly commission evaluation work to ascertain the value created from our platform.

- Jointly develop open data standards for data types in order to set these as a default for industry. For example, Local Waste Standard and FHIR profiles for Health.

Data-visualisation: Approaches across public services, 3D city modelling and developing an ecosystem of digital twins to enable more effective infrastructure planning and scheduling for our Cities into the future.

Data ethics: Joint working on the ethical use of data and artificial intelligence for better citizen engagement and improved services.

Digital economy: Co-creation of digital innovations between entrepreneurs and citizens, sharing learning from the Mayor of London's Civic Innovation Challenge and Leeds' Sustainable Innovation Lab

Wider digital economy: Actions relating to goals of our respective industrial strategies.

Use case development and sharing: A commitment to develop a standard consumable format for use cases and publish these openly. This could include the description of the use case, outcomes, data uses, and possibly a link to the code if there is any. (SHARE, AMPLIFY, DO).

Digital literacy: Joint approaches to digital literacy leading to 100% of citizens in Leeds and London taking up the basic digital skills that help them get the most out of being online.

Digital connectivity: Jointly lobbying government on full fibre connectivity to the home and the provision of accurate data by Ofcom and DCMS.

3. TERM

This MOU has an initial period of three years and may be renewed by mutual agreement between the parties. It may be terminated prior to its expiration by either party at any time without cause. In event of termination, the parties will promptly and orderly terminate any joint activity carried out under this MOU in a cost-effective manner.

4. GENERAL

Each city will commit resources and work with appropriate partners to scope out this work. They both agree to meet up on a regular basis in each city, and engage other local authorities and partners in their wider respective areas to contribute to the Leeds and London discussions.

This MOU is intended to set forth the understanding of London and Leeds concerning the subject matter stated herein and is not intended to be a legally binding instrument or to create any legally enforceable rights or obligations. London and Leeds will comply with respective laws in performing the activities under the MOU.