8th | CITY UPDATE

Welcome to the **8th City Update** newsletter #24. This issue covers programme and project activity during the period from August to October 2022.

The first part of the newsletter is used to offer an overview of projects delivered by each city for Phase 1 of the programme. This equates to 26 projects – plus a couple of Phase 2 Data projects that were completed in March of this year.

A further 13 projects are currently active as part of Phase 2 activity with all projects scheduled to complete by programme end date of June 2023. These projects will feature in further newsletters as they deliver data and digital solutions to issues faced by cities today.

8th City programme partners are committed to a collaborative approach to projects – with information and knowledge sharing a vital aspect. Case studies are a useful resource for showing this learning and the programme has recently partnered with the BABLE Smart Cities platform to share this under the **Smart Cities Scotland** banner. Case studies will appear over the coming months.

Scottish cities have also contributed to a Smart City response to COVID19 case study which is being developed by BSI/IS0 - see article page 17.

Thanks again to all programme partners and stakeholders engaged in delivering 8th City project activity.

Nicola McPhee, Programme Manager

2 | 8th CITY PROGRAMME - UPDATE ON COMPLETED PROJECTS

As a core element of the Scottish Cities Alliance (SCA) Smart Cities workstream, the 8th City programme of collaborative Smart City initiatives has been co-developed and delivered by the cities of Aberdeen, Dundee, Edinburgh, Glasgow, Inverness, Perth, and Stirling.

Funded as a 'Sustainable Growth' Strategic Intervention (SI) within the 2014-2020 European Regional Development Fund (ERDF) operational programme, the 'Scotland's 8th City – the Smart City' programme commenced in November 2016 and runs to June 2023.

The programme is aligned with the Green Infrastructure and the National and Cultural Heritage Fund Strategic Interventions in support of Scottish Government's policy action of 'Ensuring our communities are healthy and sustainable'.

In adopting a 'Smart and Sustainable' approach to delivering projects 8th City programme partners have sought to accelerate and transform the delivery of services and infrastructure to make Scotland's cities more attractive, resilient, and sustainable.

The 8th City programme includes 41 separate projects, delivered across seven cities via investment of £48 million, including £500k via the SCA-administered Cities investment Fund and ERDF support of over £20 million. For Inverness (in the Highlands & Islands programme area) ERDF grant Intervention Rate was latterly available to cover up to 70% of eligible project costs against an agreed budget; for the remaining cities (located in the Lowlands & Uplands programme area) a lower rate of 40% ERDF grant was available.

In securing ERDF grant funding to develop these projects 8th City partners aim to expand smart and sustainable capabilities and deliver city priorities. The programme also supports improved community engagement, integration of service delivery, innovation, and a commitment to joint working and sharing of assets, information, and learning. This collaborative approach to Smart and Sustainable Cities is unique at this scale across the UK.

The 8th City programme also contributes to work by each city in delivering their Net Zero targets in line with or ahead of Scottish Government target to reduce emissions of greenhouse gases to Net Zero by 2045.

City partners have used data and digital technology as core elements to address city priorities and issues relating to data (including open data and data analytics), energy, lighting, mobility, waste, water, and delivery of essential services.

Across the programme, 28 of the 41 projects have now been delivered – including all 26 of the programme's Phase 1 projects. Key highlights for each of the participating cities are noted over the following pages.
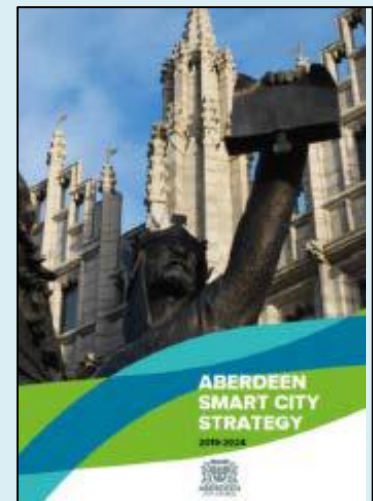
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Aberdeen Projects Overview:

For the Aberdeen **Open Data** project, the Innovative Service output was the development of an open data Platform, https://data.aberdeencity.gov.uk/, procured as part of a collaborative approach with Dundee, Inverness, Perth, and Stirling. See case study at https://www.bable-smartcities.eu/explore/use-cases/use-case/open-data-portal.html

The **Intelligent Street Lighting (ISL)** project has delivered a network of smart LED lights controlled by an innovative hybrid Central Management System which uses LoRaWan open network gateways to control the nodes on the lighting columns through a mesh network. Connection of street lighting equipment to other transportation systems has enabled potential for autonomous energy and safety strategies such as Safer Routes to Schools. By deploying an ISL network Aberdeen noted anticipated annual savings of around £1M for street lighting costs. See case study at https://scottishcities.org.uk/2020/12/11/aberdeen-intelligent-street-lighting-isl/.

The **Digital Data Development** project involves deployment of high-quality sensor nodes to enhance Intelligent Transport Systems (ITS) strategies and provide a better managed transport network.

Info and outputs related to Aberdeen's completed projects outlined below.

Project	Outputs		Completion
	Innovative Services	Data Sets	
Open Data	1	14	March 2020
Intelligent Street Lighting	1	4	Sept. 2019
Digital Data Development	2	3	Dec. 2018

Dundee Projects Overview:

Dundee had four projects in Phase 1 and is currently delivering a further two projects (Open Data/Data Analytics and Smart Mobility - Project ZED) as part of Phase 2.

For the **Open Data** project, the Innovative Service output was the development of an open data platform, https://data.dundeecity.gov.uk/, procured as part of a collaborative approach with Aberdeen, Inverness, Perth, and Stirling. For an example of data engagement acti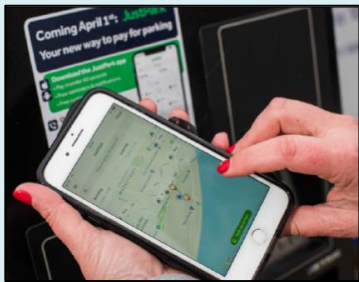vity undertaken in Dundee please see case study at https://scottishcities.org.uk/2020/12/11/dundee-open-data-dundee-places/

The Dundee Public Safety project has been developed and delivered in partnership with Perth (and with Angus Council as a non-8th City programme partner). The cities have combined resources and learning to work on a Tayside approach to delivering an integrated public safety network.

The introduction of enhanced public space CCTV and video analytics capability is playing a key role in integrating the work of partners all playing a role in tackling crime and disorder and promoting community safety.

Dundee was one of a number of cities using 8th City ERDF support to deliver **Smart Mobility** activity. For Dundee, the focus has been on Mobility as a Service (MaaS) solutions with a wide range of innovation-led projects delivered via the Dundee MILL (Mobility Innovation Living Lab), a real-world test and experimentation environment for innovative mobility solutions – see https://themill.scot/. See https://scottishcities.org.uk/wp-content/uploads/2020/11/Issue-15-May-2020.pdf for an overview of these projects.

Outputs for the Smart Mobility are currently being reviewed for reporting. This is also the case with the Dundee **Public Safety** project which completed earlier in 2022 and intends to deliver a range of open data sets derived from video analytics systems. These data sets will support Dundee's response to city centre management and inform active travel planning.

The Dundee **Smart Waste** project enabled the city to trial a mix of smart technology and data sharing processes within the council's Street Scene operational framework by deploying the following Smart Waste technologies: Solar Powered Compactor Bins; Bin Fullness Sensors; Electric Vacuum Industrial Street Sweepers; Hand-Held Devices / Route Optimisation Software.

Outputs for Dundee's completed Phase 1 projects are outlined below.

Project	Outputs		Completion
	Innovative Services	Data Sets	
Open Data	1	43	Dec. 2019
Smart Mobility - ShareMORE	TBC	TBC	March 2022
Public Safety	TBC	TBC	February 2022
Smart Waste	3	6	June 2019

Edinburgh Project Overview:

Edinburgh had one project in Phase 1 and this used IoT connectivity and smart bin sensors to focus on **Smart Waste** service development. Some of the learning from this project has informed an ambitious approach to integrated city management, including street bin collections. The City of Edinburgh Council is currently delivering a further three projects (Intelligent Infrastructure, City Operations, and Driving Operational Efficiency) as part of Phase 2.

Details of the completed Phase 1 Smart Waste project are outlined below.

Project	Outputs Reported		Completion
	Innovative Services	Data Sets	
Smart Waste	2	3	June 2020
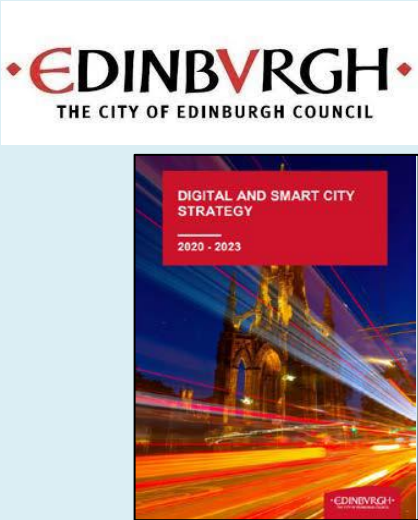
Glasgow Projects Overview:

Glasgow had five projects in Phase 1 and the city is delivering a further five projects (Open Data/Analytics, Intelligent Street Lighting, Smart Fleet, Assets Management, and Smart Projects Co-ordination) as part of Phase 2.

By deploying an extensive city centre **Intelligent Street Lighting** network Glasgow is connecting LED lamps with central management systems and network controls to achieve efficiency savings of around 70%; this significantly reduces energy costs and supports an estimated reduction in CO_2 emissions of around 700T per year

The Glasgow **Open Data/Analytics** project delivered 30 open datasets and deployed four Innovative Services (named) to enable data to be analysed as part of data driven innovation and decision-making. Nine case studies have been produced by the project team with areas covered including Data Modelling, Design Led Thinking, COVID-19 Business Grants, and Child Poverty – see case study at https://scottishcities.org.uk/2020/12/11/glasgow-responding-to-child-poverty/.

The Glasgow **Mobile Working** Phase 1 project delivered a range of innovative approaches across core services such as school's transport, bulk uplift, and environmental services.

As part of this work, Glasgow hosted a number of 'show and tell' events to share information and learning across the 8th City programme and beyond. Deployment of app-based mobile working has led to significant benefits for council officers and for the users of those services.

Glasgow combined with almost all of the other Scottish cities in delivering a **Smart Waste** project as part of a wider ERDF Operation involving Dundee, Edinburgh, Inverness, Perth, and Stirling.

Glasgow's approach involved deployment of bin sensors to enable responsive and more efficient collections from street litter bins across pilot neighbourhoods in the north, east, and west of the city.
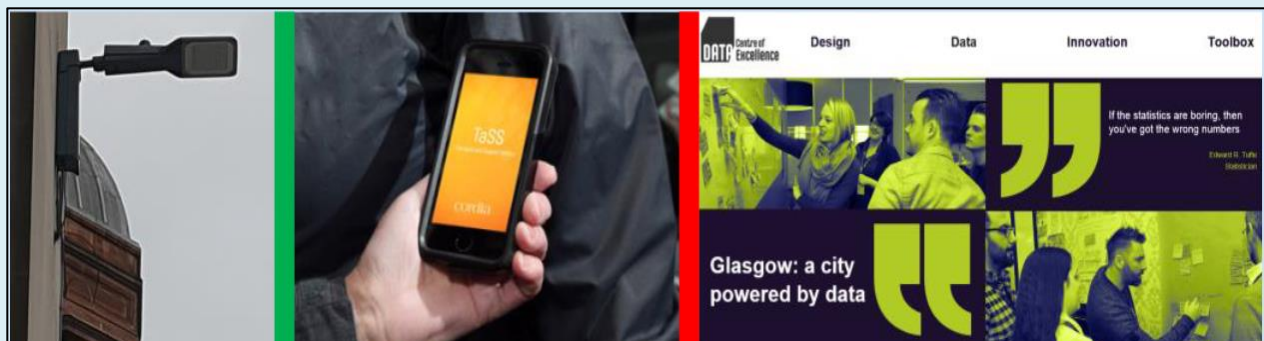
The **Smart Water Management** project - now known as Glasgow's **Smart Canal**, is a pioneering project and the first of its kind in Europe. By deploying sensors and predictive weather technology to dynamically manage water levels along the Forth & Clyde Canal, the project has enabled the canal to become a drainage route for excess surface water during high rainfall events. This, in turn, has opened up for development five major sites covering 110 hectares across North Glasgow. The project also delivers CO_2 savings of 500T per year by reducing the amount of wastewater requiring to be pumped.

The Smart Canal project has received six major awards for innovation, regeneration and infrastructure development, including: Best Innovation/Demand Management Initiative at the Association for Public Service Excellence (APSE) Awards 2021 and the Greatest Contribution to Scotland Award at the Scottish Civil Engineering Awards 2020-21.

The project has attracted significant interest from other local authorities and international visitors who are rethinking how they can use their reservoirs and canal networks. See case study at https://scottishcities.org.uk/2020/12/11/glasgow-water-management-smart-canal/

Glasgow's completed Phase 1 projects are outlined below along with the Open Data / Analytics (Phase 2) project which completed in March 2022.

Project	Outputs Reported		Completion
	Innovative Services	Data Sets	
Open Data/Analytics (Phase 1)	4	27	March 2019
Intelligent Street Lighting	1	4	June 2019
Mobile Working	10	0	June 2021
Smart Waste	1	4	June 2019
Smart Water Management	2	2	Dec. 2021
Open Data/Analytics (Phase 2)	5	30	March 2022

Inverness Projects Overview:

Inverness had three projects in Phase 1 and The Highland Council is delivering a further two projects (Smart Mobility and Smarter Buildings Management) as part of Phase 2.

For the **Open Data** project, the Innovative Service output was the development of an open data platform, procured as part of a collaborative approach with Aberdeen, Dundee, Perth, and Stirling. Upon expiration of the open data platform licence in 2020, The Highland Council (THC) made the business decision to port the open data sets to the council's spatial data platform at https://map-highland.opendata.arcgis.com/.

The **Smart Mobility** project incorporated a number of sub-projects delivered via THC and HITRANS. The central element of the project is a scalable and flexible wireless mesh infrastructure that forms the backbone for future digital city services, including Intelligent Transport Systems (ITS) solutions – see https://www.gov.scot/publications/european-structural-investment-funds-programmes-scotland-2021-case-studies-booklet/pages/4/.

Other elements of the Smart Mobility project include: smart bus stops; smart parking; the Fair Exchange operating system on the Far North rail line; Real Time Passenger Information (RTPI); and VMS infrastructure. Outputs across these projects are currently being reviewed for recording to EUMIS.

The Inverness **Smart Waste** project had as its primary highlight/innovation the procurement of Route Optimisation Software, which allows for the development of optimised waste collection routes. See case study at https://scottishcities.org.uk/2020/12/11/inverness-smart-waste-collection/

The completed Inverness Phase 1 projects are outlined below.

| Project	Outputs Reported		Completion
	Innovative Services	Data Sets	
Open Data	1	9	Dec. 2020
Smart Mobility	TBC	TBC	Dec. 2021
Smart Waste	1	15	March 2021

Perth Projects Overview:

Perth had six projects in Phase 1 and is delivering a further two projects (Open Data / Analytics and Smart Waste) as part of Phase 2.

For the **Open Data** project, the Innovative Service output was the development of an open data platform, https://data.pkc.gov.uk/, procured as part of a collaborative approach with Aberdeen, Dundee, Inverness, and Stirling. Open Data activity has continued into Phase 2 of the 8th City programme and Perth, in common with Dundee and Glasgow, is developing data analytics capability across Dundee City Council and partners. Perth hosted the 'Innovating with Data across the Public Sector' conference during DataFest 2020; this event was held at the Innovation Lab – an 8th City ERDF-supported project nested within the Perth Creative Exchange development .

The Perth **Intelligent Street Lighting** project has deployed LED lamps with central management systems and network controls to achieve efficiency savings of around 70%; this significantly reduces energy costs and supports a reduction in CO_2 emissions. ISL also creates opportunities for the deployment of sensors and data collection as integral support for city ambitions to deploy IoT-led Smart City solutions.

Perth delivered a **Mobile Working** project in Phase 1. This had led to the development of a range of innovative services arising from the deployment of app-based mobile working. This has led to significant benefits for council officers and for the users of those services.

Working alongside Dundee, Edinburgh, Glasgow, Inverness, and Stirling, Waste Officers in Perth deployed a range of **Smart Waste** approaches including bin sensors to enable responsive and more efficient collection. This means less waste going to landfill and fewer journeys made due to data-led routing and scheduling of collection services. Smart Waste Officers in Perth also sought to tackle issues around fly-tipping – see case study at https://scottishcities.org.uk/2020/12/11/perth-smart-waste-tackling-fly-tipping/.
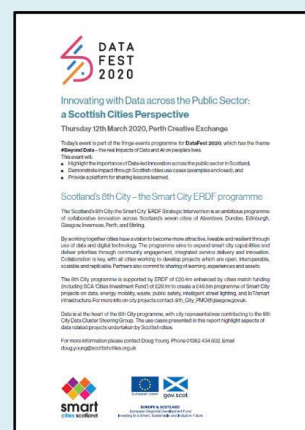
The Perth **Public Safety** project has been developed and delivered in partnership with Dundee (and with Angus Council as a non-8th City programme partner). The cities have combined resources and learning to work on a Tayside approach to delivering an integrated public safety network. The introduction of enhanced public space CCTV and video analytics capability is playing a key role in integrating the work of partners all playing a role in tackling crime and disorder and promoting community safety.

The Perth **Innovation Lab** is nested within the Creative Exchange development led by PKC and WASPS and which opened in February 2020. The Innovation Lab offers a space for stakeholders to work on urban challenges and to prototype smart city solutions using multiple approaches, activities and tools. The focus is on combining data and digital technology to support the development of new products and services helping to tackle city challenges. The Innovation Lab subsequently secured local funding and was re-branded as The Famous Grouse Ideas Centre. The wider Perth Creative Exchange won the Regeneration Project of the Year at the Scottish Property Awards 2021. See Innovation Lab case study at https://scottishcities.org.uk/2020/12/11/perth-innovation-lab-at-creative-exchange/.
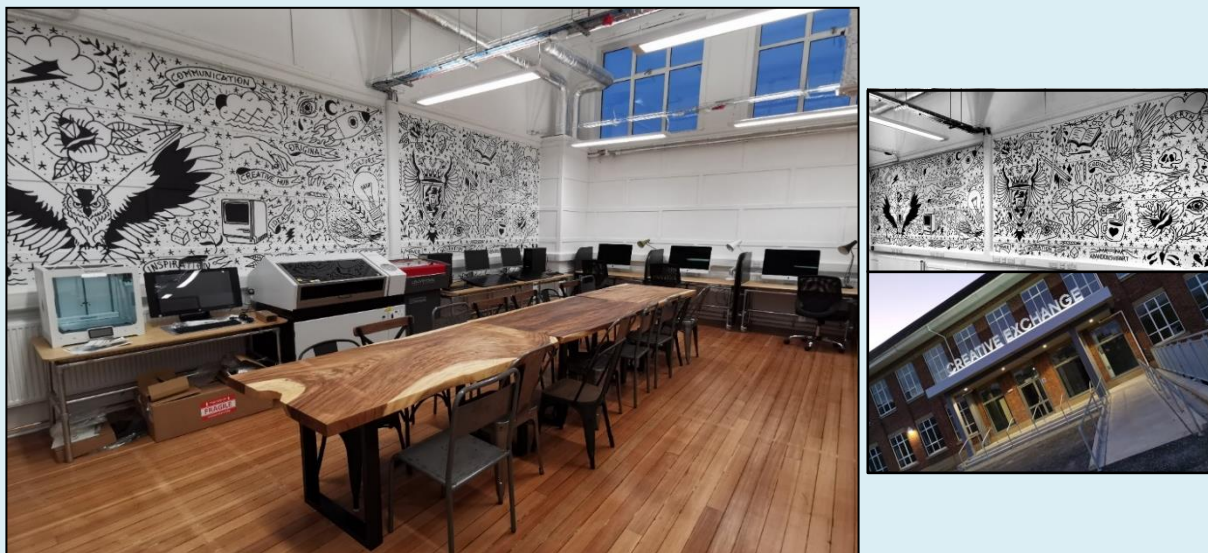
Perth's completed Phase 1 projects are outlined below.

Project	Outputs Reported		Completion
	Innovative Services	**Data Sets**	
Open Data	1	43	Dec. 2019
Intelligent Street Lighting	1	4	Dec. 2018
Mobile Working	7	2	Dec. 2019
Public Safety	TBC	TBC	Dec. 2021
Smart Waste	3	3	June 2019
Innovation Lab	1	2	Dec. 2019

Stirling Projects Overview:

Stirling had four projects in Phase 1 and has delivered a further Open Data project as part of Phase 2. The completed Phase 1 and Phase 2 projects are outlined below.

For the **Open Data** project, the Innovative Service output was the development of an open data platform, https://data.stirling.gov.uk/, procured as part of a collaborative approach with Aberdeen, Dundee, Inverness, and Perth.

The **Smart Energy** project enabled Stirling Council to deploy energy dashboards to track and monitor energy demand, carbon emissions and renewables performance across 35 key Council sites. See case study at https://scottishcities.org.uk/2020/12/11/stirling-smart-energy/.

Stirling's **Smart Mobility** project deployed sensor-based monitoring of a range of travel modes – including vehicles, cyclists, and pedestrians. This vehicle monitoring infrastructure helps to reduce congestion and make travel more efficient. Feeds from these monitoring devices are included as open data sets on the Stirling Open Data platform.

The Stirling **Smart Waste** project included a network of city centre solar-powered compactor bins. The project was delivered as part of a wider ERDF Operation involving Dundee, Edinburgh, Glasgow, Inverness, and Perth.

Stirling's completed Phase 1 and Phase 2 projects are outlined below.

Project	Outputs Reported		Completion
	Innovative Services	Data Sets	
Open Data (Phase 1)	1	8	March 2019
Smart Energy	1	1	June 2019
Smart Mobility	3	3	Dec. 2018
Smart Waste	1	1	Dec. 2018
Open Data (Phase 2)	0	20	March 2022

Two of the 8th City programme Phase 2 projects have also completed, namely Glasgow Data Analytics and Stirling Open Data – both of which finished in March 2022.

Collectively, the projects completed by the seven cities have contributed 52 Innovative Services and 248 Data Sets Opened for Innovation as part of the output targets for the 8th City programme - with a further 10 Innovative Services and 35 Data Sets currently being reviewed for Phase 1 activity prior to being recorded on the Scottish Governments' EUMIS portal.

Phase 2 of the programme has now been in delivery for the past few years with many cities running Phase 1 and Phase 2 activity concurrently. There are 15 projects being delivered in Phase 2, with some cities seeking to develop and extend the learning from Phase 1 projects. Other Phase 2 projects have sought to introduce Internet of Things (IoT) and integrated and intelligent infrastructure as key enablers for effective city management.

Upon physical completion in June 2023, it is anticipated that the 8th City programme will deliver 123 Innovative Services and 420 Data Sets Opened for Innovation.

For 2022/23, cities and programme partners will seek to support Phase 2 activity across the 8th City programme – including ongoing opportunities for sharing learning, knowledge and resources as cities look towards programme end and, at the same time, identify wider funding and collaborative opportunities building on from the 8th City programme's ethos of 'one city is all the cities'. This important collaboration of local authorities working together was highlighted as a significant achievement in the Scottish Government-funded interim review of the 8th City programme.

The 8th City programme governance and reporting activity was also recognised in 2021/22 when the programme was runner-up for the 'Governance and Economy' category of the annual World Smart City Awards 2021, a prestigious international competition. Entries came from almost 50 countries and were "of an exceptionally high standard". Winners were announced at the Smart City Expo World Congress which took place in November 2021 in Barcelona – with the World Economic Forum's G20 Global Smart Cities Alliance winning.
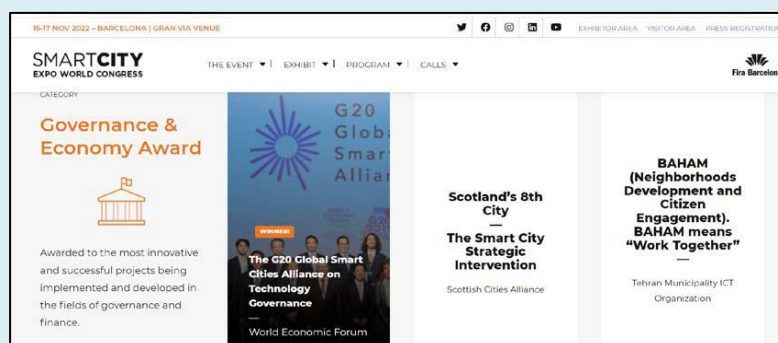
For more information about the 8th City programme, or about any of the individual projects delivered by city partners, please contact the 8th City Programme Management Office at 8th_City_PMO@glasgow.gov.uk. Programme newsletters and case studies are available at https://scottishcities.org.uk/smart-cities/.

Recent issues of the 8th City Update newsletter have included overviews of smart city project delivery and developments across each of the Scottish cities.

In this issue we highlight the 8th City / Smart City projects in Stirling.

Dating from the 6th century, Stirling is the administrative centre for the Stirling Council area and has a current population of 36,162 – making it the smallest of the seven cities working on the 8th City ERDF programme. Stirling has had city status since 2002.

The Understanding Scotland's Places website notes that Stirling is extremely mixed in terms of demographics, as follows:

- There is a particularly wide range of people, housing and activities.
- The number of older couples with no children is higher than average.
- There is a mix of professional and non-professional jobs, and part-time and self-employment are both important for a significant proportion of residents.
- Socioeconomic status is higher than in other kinds of town and there is a mix of professionals and non-professionals, those with higher and lower educational attainment.
- Stirling is described as an 'independent to interdependent' town

Stirling Council (SC), working with a range of partners and stakeholders, has developed and delivered five projects as part of Phase 1 and Phase 2 of the 8th City ERDF programme. These are: Phase 1 Open Data; Smart Energy; Smart Mobility; Smart Waste; and Phase 2 Open Data.

All of the projects have now completed delivery activity - but with work ongoing for the Open Data (Phase 2) project to complete a Project Closure Report. Collectively these projects have delivered five Innovative Services and 33 Data Sets Open for Innovation. These outputs may increase by a further three Innovative Services and ten Data Sets as Stirling Council has provided funding for the Open Data Phase 2 project to continue to March 2023 and it is anticipated that further outputs will be achieved in line with project targets. See page 12 of this newsletter for more details on Stirling Council's delivery of these projects.

Collaboration and information sharing has been a key aspect of Stirling's Smart City activity. This includes links between and across Stirling's 8th City projects (such as the inclusion of Smart Mobility journey times and cycling and pedestrian counts monitoring data on the Stirling Open Data Platform) and also the extensive external engagement undertaken by Stirling Council officers.

James Tonner, Stirling's Open Data Officer and city representative on the 8th City Advisory Group is active in stakeholder engagement with a variety of agencies and organisations, including: University of Stirling research on 'Participatory Design and Open Data Platforms for a Data Commons in Scotland'; the ECCI Carbon Scenario Tool: Pathfinder Project Report (see article on page 19 for more info); and local authorities such East Renfrewshire, Falkirk, and West Dunbartonshire councils. Collaborative work also continues with Data Officers in Dundee and Perth in relation to data standards and common data sets across their platforms.

For info contact James Tonner, Stirling Open Data Project Officer - tonnerj@stirling.gov.uk

15 | Smart City responses to the Global Energy Crisis

Over the past year the UK and many countries across Europe and Asia have experienced the significant impacts of a global energy crisis in relation to the oil, gas, and electricity markets. This is only the most recent in a series of cyclical energy shortages experienced over the last fifty years – though it is more acutely affecting European countries with a high dependency on imported energy.

In developing the framework for the 8th City programme partners agreed to work with the definition of a Smart City as being the 'integration of data and digital technologies into a strategic approach to sustainability, citizen well-being, and economic development'; taken from an Urban Tide report for Scottish Government, this definition encapsulates the environmental, social, and economic benefits that could arise from data and digital innovation.

Smart City activity is usually predicated on future scenario planning and, in relation to the current energy crisis, many of the 8th City ERDF-supported projects are now playing a role to aid city responses to this. For example:

Intelligent Street Lighting projects in Aberdeen, Glasgow, and Perth have significantly reduced energy use by at least 70% - with an impact energy costs (as well as carbon emissions); Smart Waste projects in Dundee, Edinburgh, Glasgow, Inverness, Perth, and Stirling have reduced waste volumes and/or collection routes leading to fewer uplifts and trips to amenity and recycling centres; and

Smart Mobility projects in Aberdeen, Edinburgh, Inverness, and Stirling have introduced a range of transport monitoring systems or, in the case of Dundee, introduced Mobility as a Service pilots which may be taken forward.

However, in relation to proactive monitoring of energy use across council buildings estates, there are Smart Energy projects being delivered by Stirling and by Inverness (on behalf of the wider Highland Council).

The Stirling Smart Energy project gathers energy data from the variety of channels and sources operating within Stirling Council buildings and sites into one single repository.
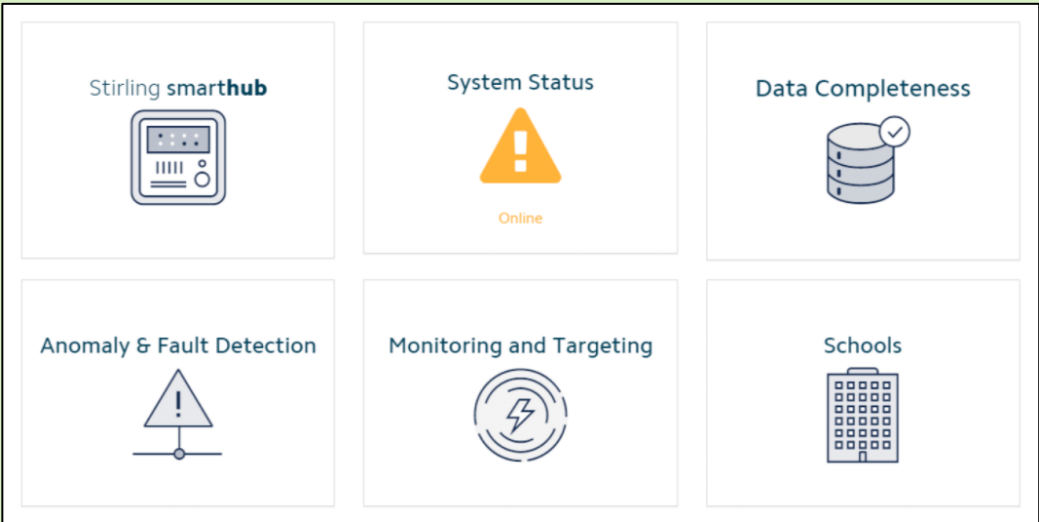
The Stirling Smart Energy project has enabled data generated to be captured on a centrally management platform - the Energy Hub – and is essential to improving the facilities, mechanisms, processes, and procedures used to identify energy wastage. This innovative service also supports work to identify opportunities for energy consumption reduction.

The Inverness Smarter Buildings Management project currently being delivered by Highland Council's Climate Change & Energy Team will gather and process energy use and other data to optimise the most effective and efficient use of council buildings. This smart infrastructure/IoT project sets out to develop and demonstrate the use of close and enhanced control for building energy management and information systems.

Ronnie Macdonald, Energy Manager at The Highland Council, leads the team delivering this project. Ronnie notes that:

> *"At Highland Council we are already realising the benefits of the installed equipment, from facilitating detailed evaluation of the energy and environmental performance of newly constructed buildings to identification of instances where energy efficiency could be improved.*
>
> *Given the very large geographical size and remote nature of our Authority, the real time cloud-based accessibility to site data is of particular benefit to us. It is also being recognised that the potential benefits extend beyond direct energy performance improvements, but also to maintenance and security considerations."*

Building on the findings from sensor deployment at a sample of 30 buildings across, the project will be extended across the wider Highland Council estate during 2023 and aims to bring efficiencies and other benefits using the three cornerstones of Automation, Optimisation, and Information. Deployment of equipment for this project utilised learning from the Stirling Smart Energy project noted above.

17 | 8ᵗʰ City inputs to BSI/ISO report on Smart Cities response to COVID-19

As the UK's national standards body the British Standards Institution (BSI) produces technical standards on a wide range of products and services and also supplies certification and standards-related services to businesses. The International Organisation for Standardisation (ISO) produces the ISO 9000 family of quality management systems - a set of standards that helps organisations ensure they meet stakeholder needs within statutory and regulatory requirements related to a product or service.
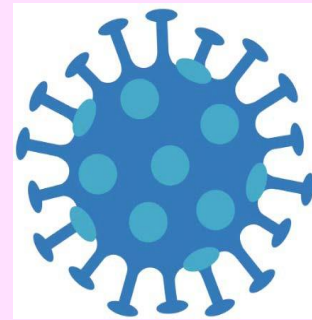
In June of this year the 8ᵗʰ City programme was contacted by Chris Parker, Convenor, ISO TC/268 Working Group 4 (Smart City Operating Models and Business Processes). Chris made the link via Scottish Government and the Scottish Cities Alliance (SCA) and invited Scottish cities to contribute to an ISO project to develop a set of global best practice studies on how cities have used 'smart city' approaches to inform and enhance their strategies for managing COVID-19.

The case study report will be published later in 2022 and will pave the way for a full International Standard setting out recommendations on smart management of future public health emergencies. Cities already featured in the draft case study include New York and Wuhan.

As a result of Chris's engagement with the SCA an opportunity was identified for input on how Scottish cities have collaborated in this space. This was seen as an important aspect due to the understanding that Scotland has taken a 'citizen-centric' approach in the pandemic. Examples of this were identified by Chris and his colleagues and include:

▪ The strong 'digital community engagement and empowerment' theme of the Digital Glasgow Strategy, and how this is reflected in Glasgow's approach to COVID-19

▪ The citizens jury approach deployed around QCovid - cited as a good example of the power that new technology can contribute (in this case an AI-enabled risk calculator), coupled with a determination to make these tools directly available for use by individual citizens on a self-service basis (rather than keeping them the preserve of health professionals), and an understanding that public trust and take-up of these new technologies cannot be taken for granted, and can be enhanced by engaging citizens directly in co-creating the rules and processes that surround them.

▪ The sonic graphs developed by the Scottish Tech Army , which provide an exciting example of the community empowerment that can follow by making data sets open for re-use; empowering others through open data has enabled this community to meet its own needs.

Contributions to the case study were made by partner cities across the 8ᵗʰ City programme, including Dundee, Glasgow, and Perth.

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These insights have been collated into a section on decision-making and communication by the Scottish cities – showing how partners were able to build on Scotland's smart city ambitions to connect with and engage residents during the pandemic.

The case study further highlights that this work is aligned with Scotland's overall ambition (as set out in the 2017 Digital Strategy for Scotland) to make Scotland "an international pioneer of citizen-led service design".

Case study inputs by Scottish cities include the following:

- **Intensive citizen consultation and engagement:** Dundee Partnership launched two large-scale engagement exercises in October and November of 2020, enabling citizens to inform the Dundee Partnership on their lived experience during and immediately after the first wave of the virus. A range of survey methods were used to provide a way for citizens to share the impacts of COVID-19 on them, how individuals experienced services during the lockdown period and what impacts if any there had been particularly in relation to their health and wellbeing. The resulting information helped to assess and plan the priorities in communities going forwards – for example, by identifying changing needs of residents in their community due to change of lifestyles brought about by the pandemic.

- **Working with the community to fill key skills gaps in the pandemic-response through volunteering:** With many city services facing unprecedented pressures during the pandemic, Perth & Kinross Council (PKC) was able to use its digital services platform rapidly to create an online registration process enabling citizens to register as a volunteer. These forms asked citizens to list areas in which they had skills or experience, and this was used to allocate volunteers more effectively to areas needing support. This was used to respond to issues and demands at both urban and rural level - as PKC covers many settlements beyond Perth.

- **Data sharing with citizens:** Scottish cities were able to re-use the platforms and processes they had developed as part of earlier smart city work to empower their citizens with direct access to data during the pandemic. For example, information by Glasgow City Council used to inform its decision making is available within interactive Apps available from Glasgow's App Gallery . Some of the data used is also available as open data and is available from Glasgow's Open Data Hub.

8TH City programme partners look forward to sharing the case study report once it is approved for circulation. Further, it is hoped that this provides guidance on good practice for city responses to the pandemic as we await an anticipated wave of infection cases as we enter the winter season.

Stephen Birrell, 8th City PMO

The Climate Change Act 2019 commits Scotland to net-zero emissions of all greenhouse gases by 2045. City authorities across Scotland have taken the lead in setting targets to reduce city emissions, some with ambitious deadlines ahead of Scotland's national net zero target; these range from 2025 to 2045, as shown below.

These targets go beyond participating city authorities' organisational footprints and seek to tackle all territorial emissions within the local authority boundary.

The Carbon Scenario Tool (CST) Pathfinder project began as a partnership between the City of Edinburgh Council (CEC) and Edinburgh Climate Change Institute (ECCI) to consider how to support decision-making for climate action. This led to partnership work with Scottish Cities Alliance (SCA) to explore the potential to support wider capability and capacity building for net zero targets across city authorities. The project has been funded by the Scottish Government, with the aim of supporting integration of area-wide action with Local Heat and Energy Efficiency Strategies (LHEES).

The CST Pathfinder project team engaged local authority staff from the (then) seven city authorities and other key stakeholders: Officers working on Open Data projects funded via the 'Scotland's 8th City – the Smart City' ERDF programme also participated in this work and work is ongoing across the cities to review dataset development activities that support this. These aim to address the challenges facing collaboration on delivery of a Nero Zero Action Plan, and include activities covering a consistent approach to data collection and capture, use of standardised measurement tools and stakeholder expansion.
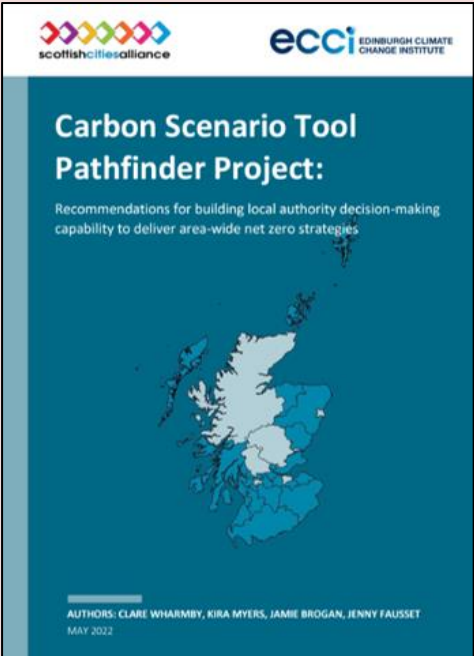
The project has produced a set of recommendations for Scottish Government, local authorities, supporting organisations such as ECCI, Sustainable Scotland Network (SSN), the Improvement Service, and the wider public and private sector. These include:

- Publishing an annual area-wide Greenhouse Gas (GHG) emissions dataset with an appropriate boundary, ensuring consistency with local authorities' Local Heat and Energy Efficiency Strategies (LHEES).

- Investigating the opportunity to buy a licence for the existing area-wide tool which has the best match with local authority requirements

- Supporting the development of both capacity and capability within Local Authorities by acknowledging the responsibility of all sectors in supporting the delivery of net zero targets and creating systems to share knowledge and expertise.

Doug Young, Development Officer at Dundee City Council contributed to this work, along with other 8th City Data Officers, and noted:

> *"The CST Pathfinder was an extraordinary opportunity for us to apply the experience gained by the Scottish Cities through the 8th City Programme to the important question of tackling the climate emergency, bringing together expertise from across academia and our own organisations to produce a far-reaching set of recommendations."*

For more details about the Carbon Scenario Tool (CST) Pathfinder see the ECCI or SCA websites.

| Managing Authority Update

8th City programme partners are working towards an end date of June 2023 for project delivery activity. The financial end date for the 8th City programme is 30th September 2023. Other key dates* that programme partners should be aware of are listed on the Managing Authority ESIF blog page as follows:

- Final Stage 2 Visits - 30 June 2023

- Final Submission of Claims by LP's - 31 January 2024

- Final Payments by MA - 20 June 2024

- Final Article 127 Visits - 31 December 2024

* Please note that the ESIF blog page also notes later Delivery End Date (30 September 2023) and Financial End Date (31 December 2023) - but these relates to other programmes and do not apply to the 8th City Strategic Intervention.

8th City programme partners are committed to delivering projects which are (where possible) open, scalable, replicable, and interoperable.

There is also a commitment to share assets, information, and learning to enable other cities and local authorities to utilise knowledge arising from project development and delivery. Much of this activity is supported via the production of case studies and project blogs – many available on the Scottish Cities Alliance website.

8th City project case studies have also been featured in the following publications and initiatives:

- DataFest 2020
- Institute of Civil Engineers (Scotland) annual report 2020
- Council of Europe Congress of Local and Regional Authorities
- SOCITM website
- Local Government Information Unit (LGIU)
- 2014-2020 ESIF Programmes in Scotland - annual report

Case studies and project documentation - such as project closure reports, lessons learned logs, and stakeholder engagement plans - are also shared amongst project partners via the 8th City forum on the Knowledge Hub platform (restricted to programme partners only).

The 8th City programme was recently in contact with the BABLE city community platform; this is free-to-join and free-to-use and currently hosts a wide variety of smart city case studies submitted by cities across Europe.

Aberdeen and Glasgow are currently the only Scottish members on the BABLE platform. However, an agreement was recently made for the 8th City programme to be featured, under the banner of Smart Cities Scotland. This allows for each city to submit case studies relating to the 8th City programme, but to retain possibility of signing up as individual cities at a later date. The 8th City PMO is currently working on draft case studies for each city plus an over-arching case study on programme development and supporting governance and reporting.

To find out more about the programme case studies please contact 8th City Programme Management Office – 8th_City_PMO@glasgow.gov.uk

The next **8th City Update** will cover programme activity from November 2022 to January 2023 and will be out in the first week of February. Contributions are welcome from across the 8th City programme. Deadline for content is 25th January 2023.

For information please contact Stephen Birrell, 8th City PMO, stephen.birrell@glasgow.gov.uk