

# GM 5G Innovation Region Programme

## Smart Decarbonisation Network

### Programme Overview for UKTIN Clusters Forum Call



**GREATER  
MANCHESTER**  
DOING DIGITAL DIFFERENTLY

22<sup>nd</sup> May 2024



Department for  
Science, Innovation,  
& Technology

# What is it

Greater Manchester 5G Innovation Regions Smart Decarbonisation Network (GM 5GIR SDN) focuses on tackling the drivers of climate breakdown at a city region level, accelerating decarbonisation, improving quality of life, and growing the Green Technologies and Services sector.

## The Project will:

- 5G enable hundreds of existing air source heat pumps across social housing.
- Accelerate the creation of **Smart Energy** networks and bring forward benefits for residents, industry and public services, aligning with the GM Local Area Energy Plan.
- Pilot a 5G enabled **Digital Road** networks environment aiming to reduce congestion, carbon emissions through prioritising traffic flow, and supporting active travel modes and public transport movement.

Central to this is 5G advanced wireless technology wrapped within ***an ecosystem delivered by industry and telecoms partners.***

# The rationale

- Focus on supporting residents, communities and businesses
- Prove concepts and support benefits of next generation wireless
- Build on existing 5G foundations (5G Create Smart Corridor)
- Leverage existing GM assets (LFFN, GM One Network)
- Alignment to GMS and Blueprint priorities

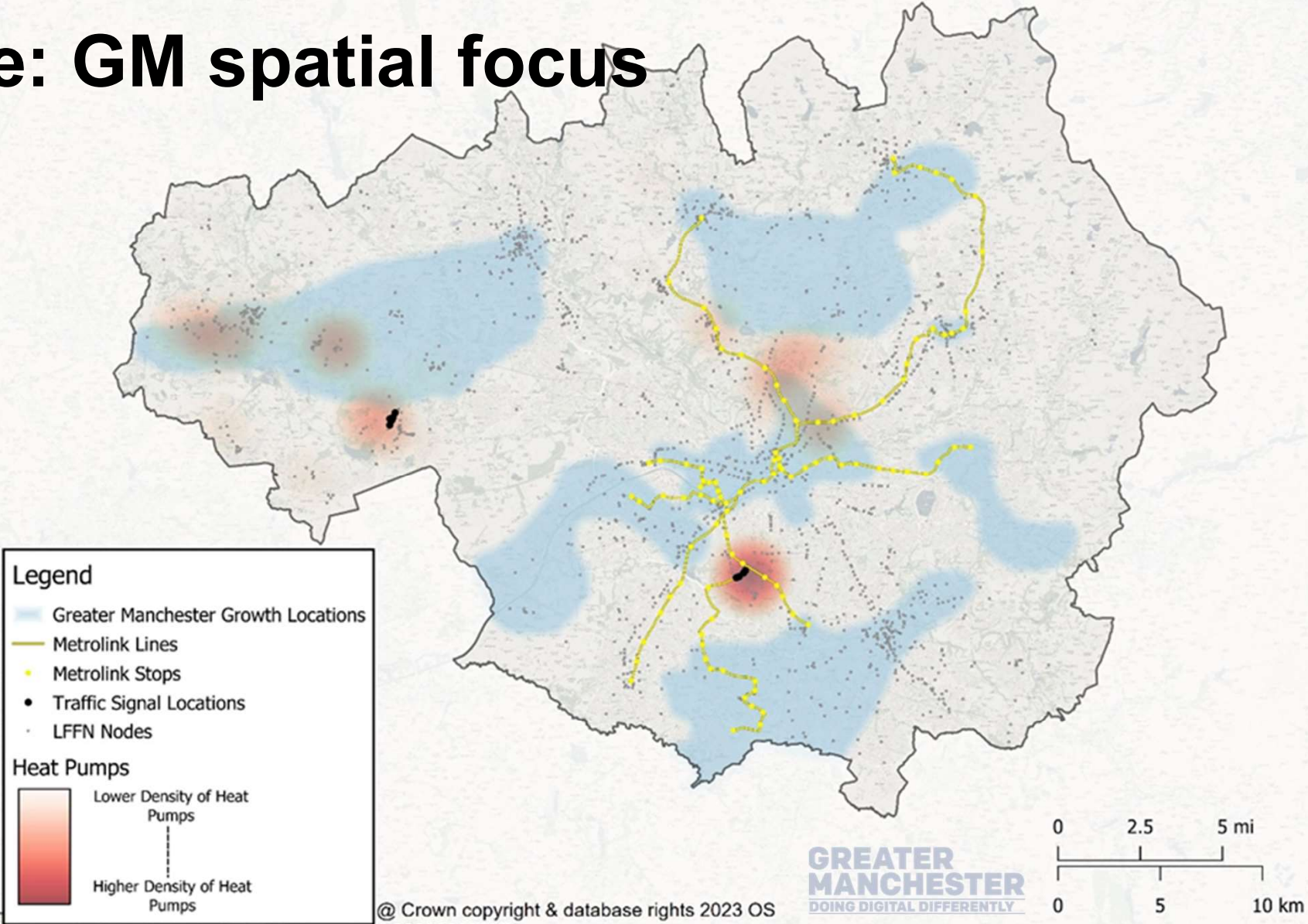
*(Creating connected, inclusive, sustainable places)*

- Develop a scalable set of Use Cases and Benefits





# Where: GM spatial focus



**Legend**

- Greater Manchester Growth Locations
- Metrolink Lines
- Metrolink Stops
- Traffic Signal Locations
- LFFN Nodes

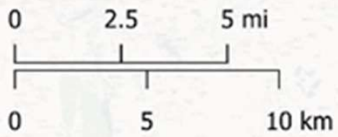
**Heat Pumps**

Lower Density of Heat Pumps

Higher Density of Heat Pumps

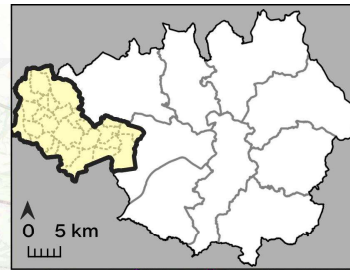
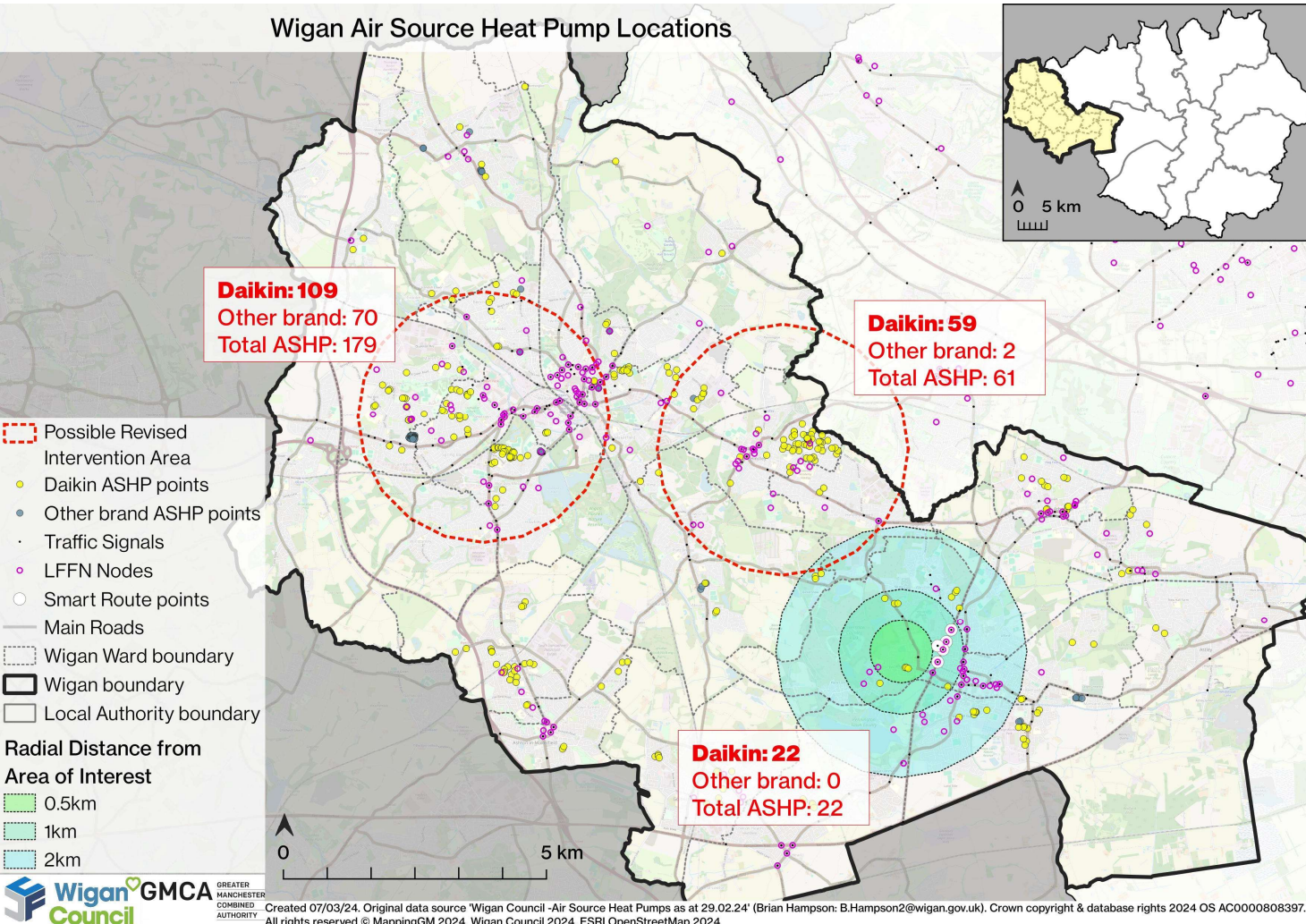
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










# Wigan Air Source Heat Pump Locations

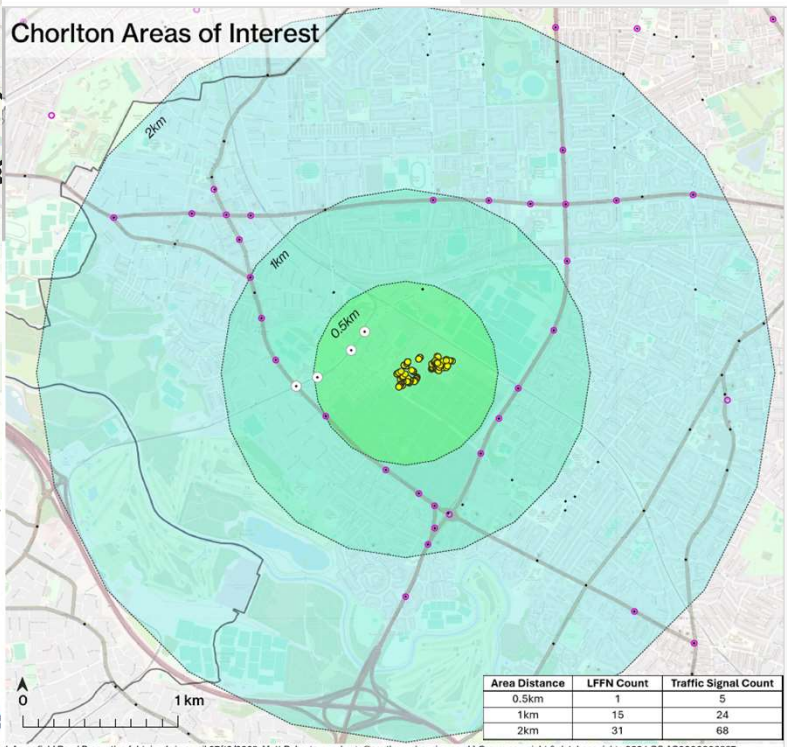


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 Possible revised intervention areas

-  Possible Revised Intervention Area
  -  Daikin ASHP points
  -  Other brand ASHP points
  -  Traffic Signals
  -  LFFN Nodes
  -  Smart Route points
  -  Main Roads
  -  Wigan Ward boundary
  -  Wigan boundary
  -  Local Authority boundary
- Radial Distance from Area of Interest**
-  0.5km
  -  1km
  -  2km

## Chorlton Areas of Interest



Area Distance	LFFN Count	Traffic Signal Count
0.5km	1	5
1km	15	24
2km	31	68

**Southway GMCA** GREATER MANCHESTER COMBINED AUTHORITY  
Created 22/02/24. Original data source 'Final address list flats 23.xlsx', Arrowfield Road Properties (obtained via email 07/12/2023, Matt Roberts: m.roberts@southwayhousing.co.uk) Crown copyright & database rights 2024 OS AC0000808397.

# Locality Analysis

# GMCA 5GIR SDN Project High-Level Connectivity



**Smart Energy/House**

FWA

**Smart Transport**

**ENWL Sub Station RTU**

**VMO2 Private 5G Network**

RRU – Remote Radio Unit  
BBU – Base Band Unit

**GM1**

VMO2/CISCO Dark/Lit  
Fibre connection

- TCU
- Exchange
- LFFN Building

**GM1 Backhaul/ VMO2 Core**

**Gateway**

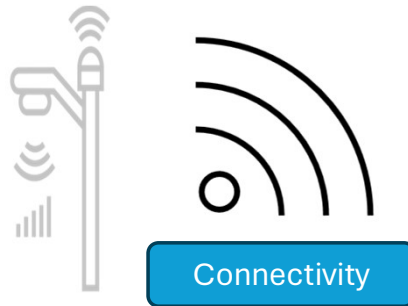
**VMO2 NOC**

**Data Management**

**Data Beneficiaries**

# Smart Transport

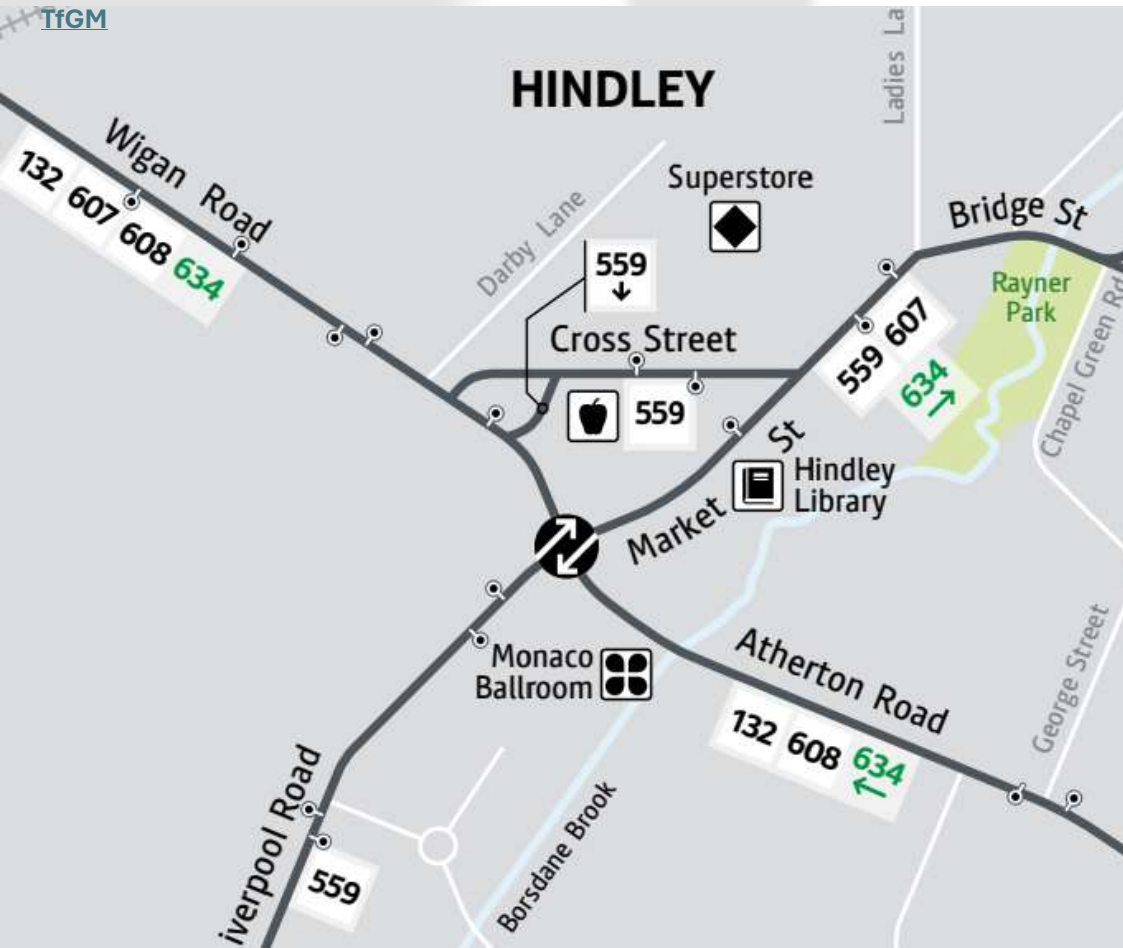
- **Reduce Traffic**
  - Reduce net motor vehicle growth, better public transport
- **Reduce Road Danger**
  - Vision Zero Adoption
- **Carbon Targets**
  - Carbon Neutral 2038
- **Sustainable Travel**
  - Mode Shift to sustainable travel





# Hindley – Bus Priority and Congestion

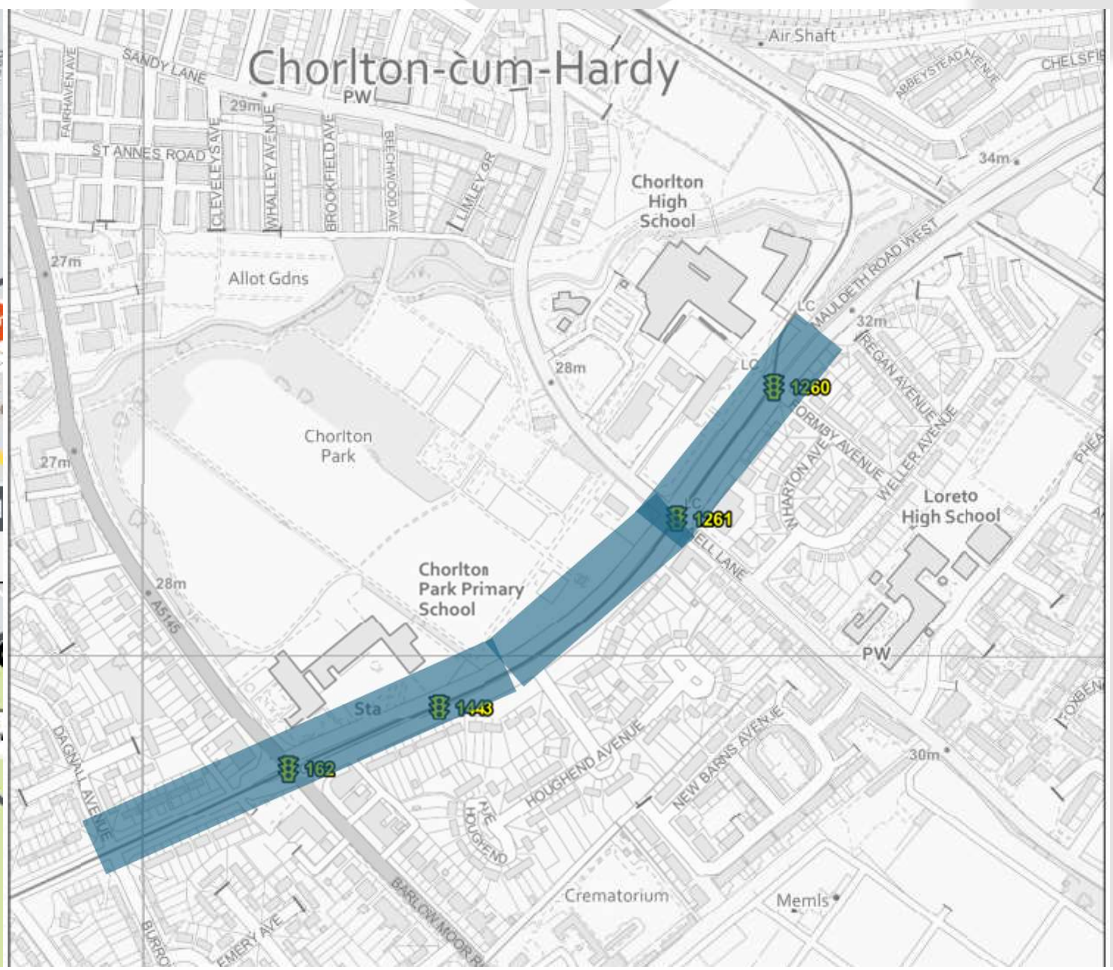
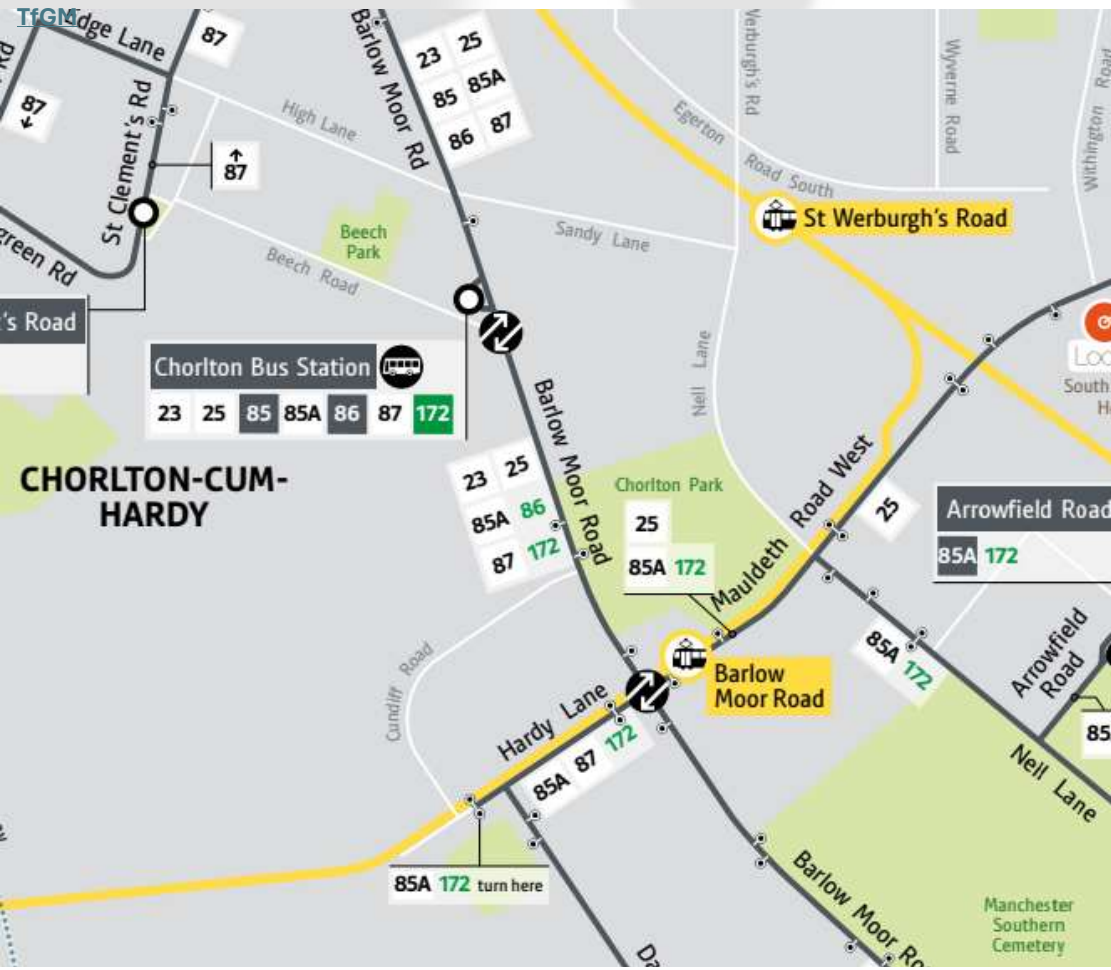
Public Transport Network Maps in Greater Manchester | Bee Network | Powered by TfGM

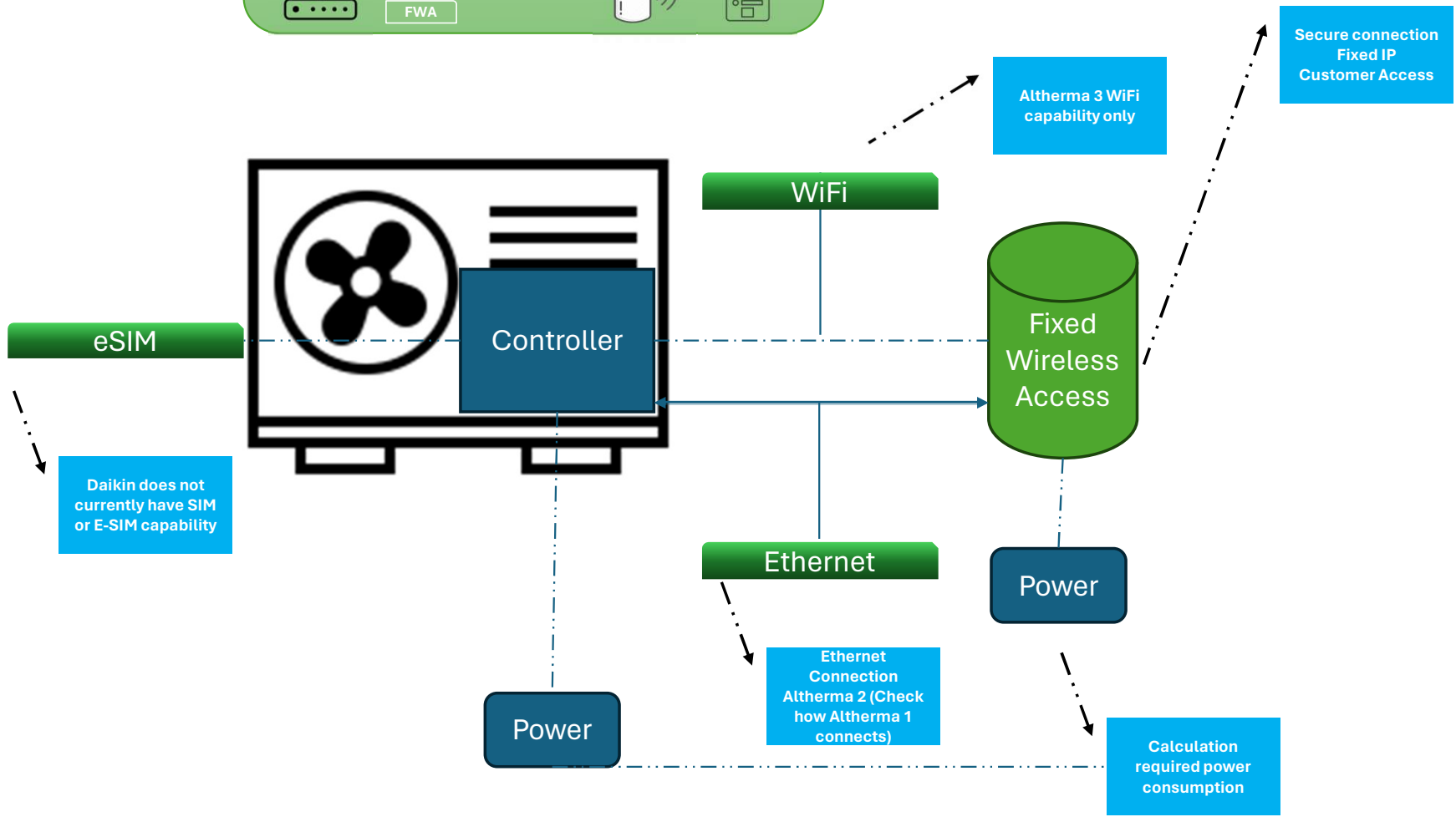
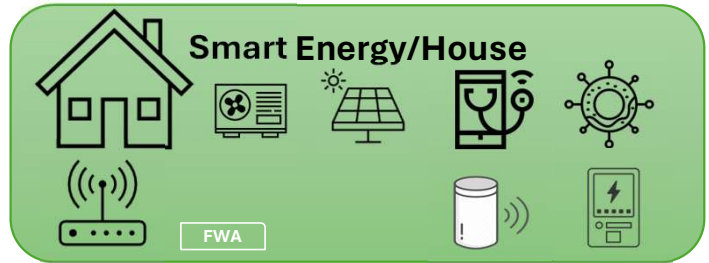




# Chorlton – Active Travel & Drone

Public Transport Network Maps in Greater Manchester | Bee Network | Powered by



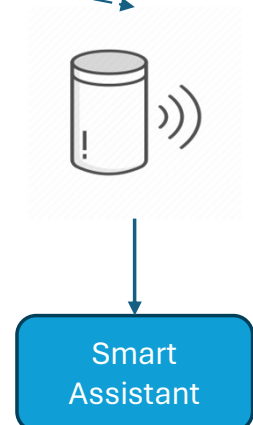
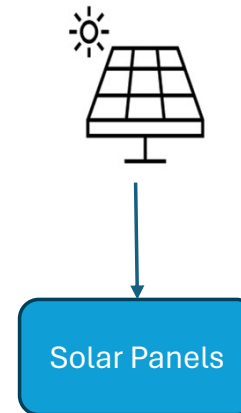
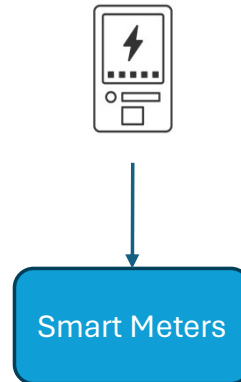
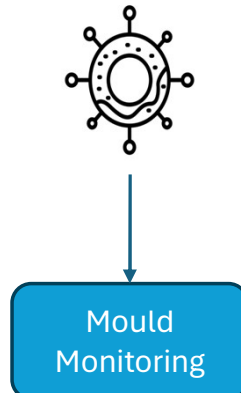
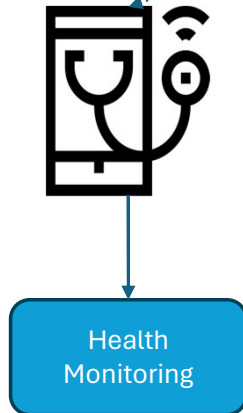
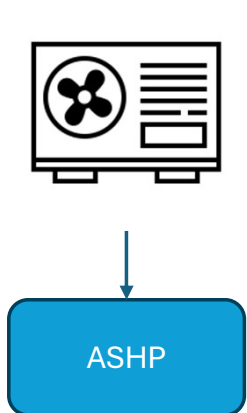




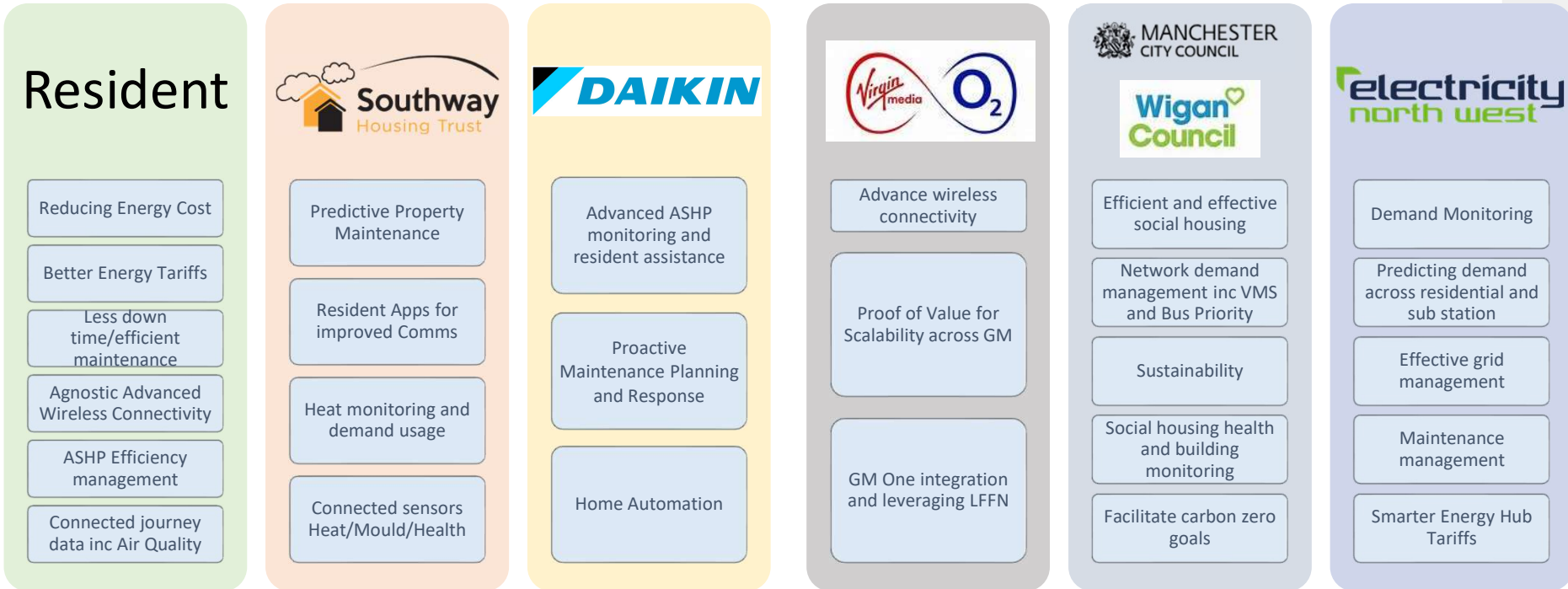
# Smart Energy/House



- **Heat Management**
  - Realtime ASHP control
- **Heat Monitoring**
  - Realtime control and adaptive monitoring
- **Maintenance**
  - ASHP efficiency and hardware monitoring
- **Lower Costs**
  - Lower electricity demand, better tariffs



# Use Case Development and Benefits Realisation



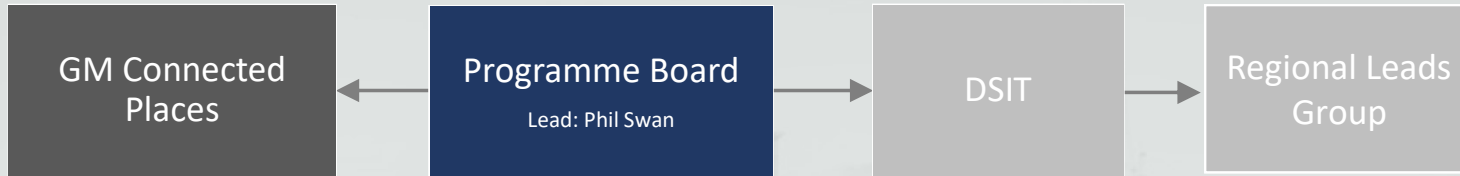


# Partner Collaboration

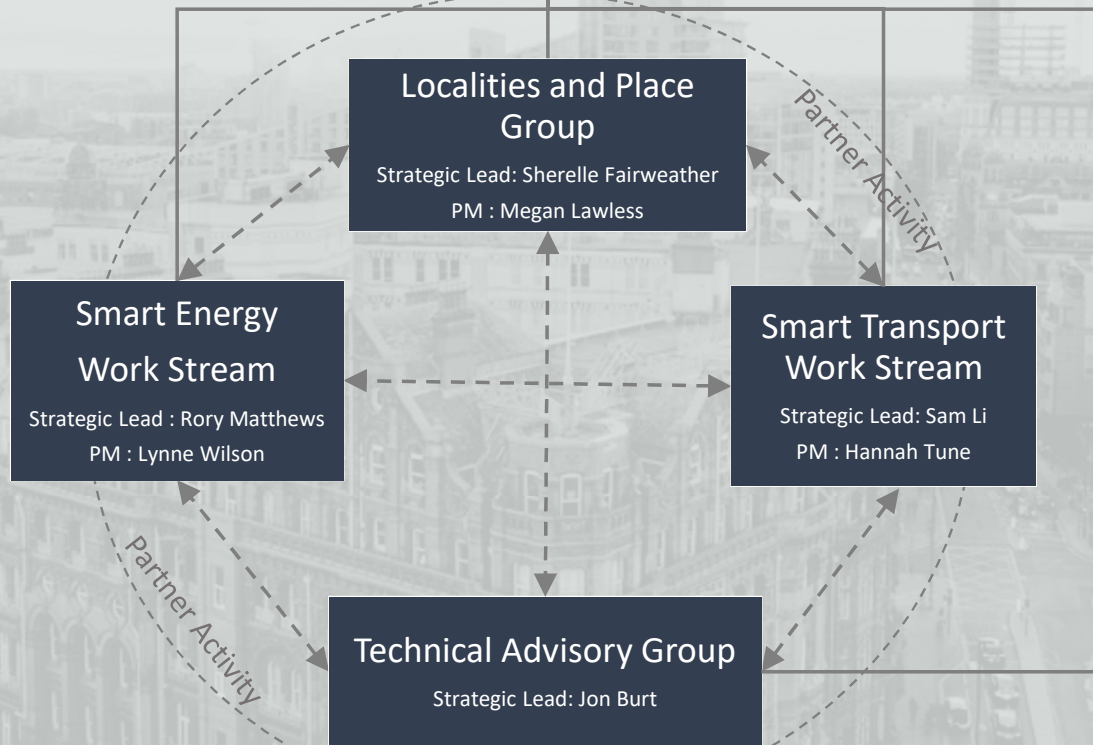


# Project Governance

**GMCA** GREATER MANCHESTER COMBINED AUTHORITY



 Department for Science, Innovation, & Technology



**Key**  
Reporting ———  
Enabling - - - - -

**New roles identified**


- Workstream Strategic Lead
- Workstream Project Manager
- Resident Engagement Officer
- Project Support



- Home
- Conversations
- Notebook
- Documents
- Recycle bin
- Edit

+ New Page details Analytics

Published 2/14/2024 Share Edit



**Greater Manchester**  
Announced as  
**5G Innovation Region**  
Today.

**GM 5GIR**

### 5GIR Smart Decarbonisation Network

Greater Manchester 5G SMART Decarbonisation Network (GM 5G SDN) project focuses on how to tackle the drivers of climate breakdown at a city region level, accelerating decarbonisation, improving quality of life,...

[Continue to the Bid Submission →](#)

**Documents** See all

+ New ... All Documents

- Name
- General
- Governance
- Localities and Place

**Workspaces**

- SMART Transport
- SMART Energy
- Localities & Place
- Technical Advisory...
- Programme Board

**Quick Links**

- Templates
- Risk Register



## SMART Transport

Hayley O'Brien

### SMART Transport Steering Group

The 5GIR SDN SMART Transport Group will create and manage the technology strategy, ensuring throughout the programme that the key drivers and principles are at the heart of any decisions.

[Check the Action Tracker Here...](#)

Action Tracker

We keep track of meetings in our action tracker which can be found here ...

#### Want to know more?

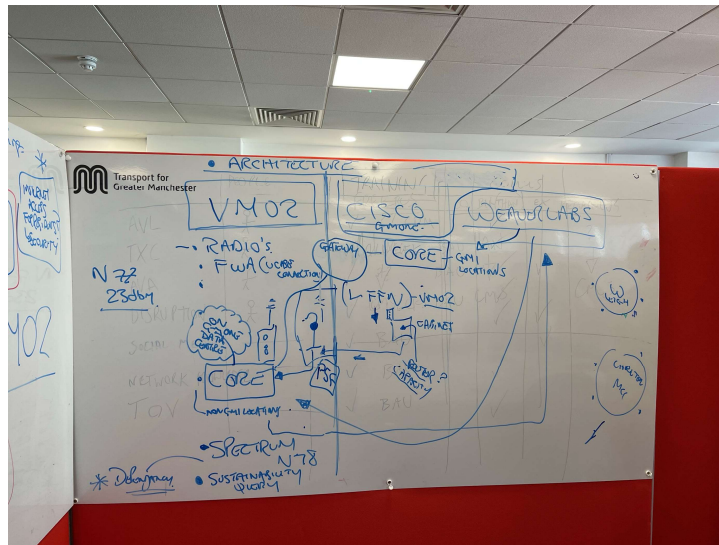
The list of contacts to the left details all those involved in this Workstream.

If you would like to know more about their role and the role of the Smart Transport Group within the wider Programme, please take a look at the Terms of Reference document below.

#### Smart Transport Contact List

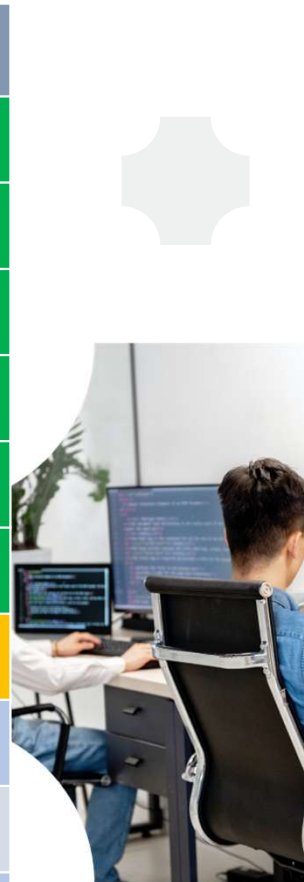
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Name	Organisation	Email
Phil Swan	GMCA	
Chris Founds	CJFA	



# Ambitious Programme

Activity	Due Date	Status
Partner Collaboration Agreements shared	28 Feb 24	Complete
Surveys and Asset Identification	15 Mar 24	Complete
Resident Engagement plan draft	29 Mar 24	Complete
Wireless Solution Architecture Agreed	05 Apr 24	Complete
Confirm Lab Tests for PoC 5G advanced wireless	19 Apr 24	Complete
Small Cell locations agreed and OAG's shared with LA's	26 Apr 24	Complete
Field Trials of advanced wireless agreed to deploy	01 Jul 24	Due
ASHP and Smart Sensors deployment commences	01 Aug 24	
Small Cell Deployment commences	01 Sept 24	
Field testing and commissioning commences	01 Nov 24	





An aerial photograph of Manchester, UK, showing the city center with several prominent skyscrapers. A large, semi-transparent graphic, resembling a stylized 'M' or a series of overlapping shapes, is overlaid on the right side of the image. The text 'Thank you and Questions ?' is centered in the middle of the image.

Thank you and Questions ?

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CONTACTS :

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[Phil.Swan@greatermanchester-ca.gov.uk](mailto:Phil.Swan@greatermanchester-ca.gov.uk)