

## Edinburgh Development Forum 10 December 2024

### Updates:

#### 1: Ongoing:

##### City Plan 2030:

Formally adopted 7 November.

Work now on update of Edinburgh Design Guidance and on Evidence Report building stage of City Plan 2040. Comprehensive, in-depth engagement 'with all relevant parties' will follow the Evidence Report stage.

Princes Street and Waverley Valley Consultation closes 21 Feb 2025.

Consultations going live soon: Edinburgh Design Guidance / Householder Guidance / Building and Conservation Area Guidance


#### 2: Edinburgh Local Heat and Energy Efficiency Strategy (Hilary Blackman)

See: [Local Heat and Energy Efficiency Strategy \(LHEES\) – The City of Edinburgh Council](#)

Look for the interactive map feature for your area.

### What is an LHEES?

- A long-term (20-25 years) plan for decarbonising heat in buildings and improving energy efficiency across Edinburgh that:
  - Sets out how each segment of Edinburgh's building stock needs to change.
  - Identifies "strategic zones" for heat decarbonisation within Edinburgh and sets out "pathways" for reducing the emissions of buildings in each zone.
  - Prioritises areas for delivery.
- Published December 2023, followed by public consultation.

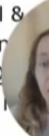


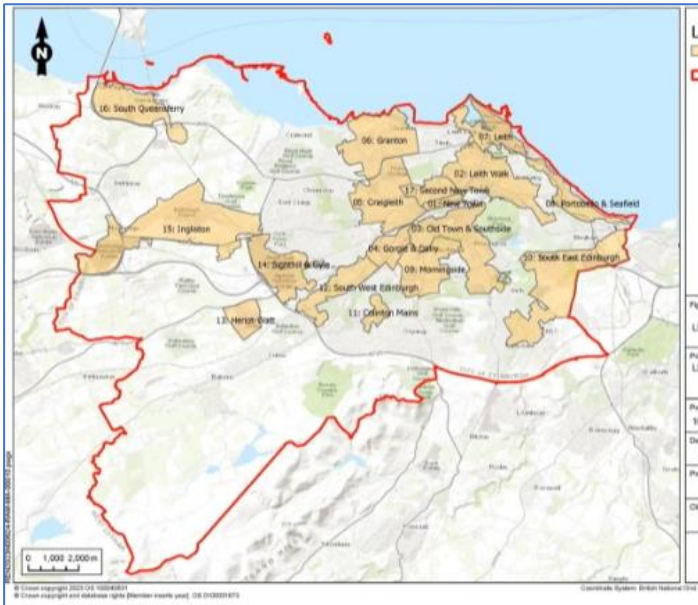
Every Scottish Local Authority (32) required to produce a strategy. (How will Scot Gov then 'coordinate'?)

### Heat Network Zones

- 17 Zones that are identified as having the greatest potential for heat networks.
- Selected on the basis of demand analysis, with refinements to reflect practical considerations such as railway lines.

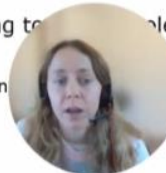
• New Town	• Leith	• Heriot-Watt
• Leith Walk	• Portobello & Seafield	• Sighthill & ...
• Old Town & Southside	• Morningside	• Ingliston
• Gorgie & Dalry	• South East Edinburgh	• South Q...
• Craigmyle	• Colinton Mains	• Second ...
• Granton	• South West Edinburgh	





## Delivery Model – examples

- The Scottish Futures Trust published their report: "[Heat Networks Delivery Models](#)" in February 2024.
- The supplier will be asked to consider the following models:
  - In-house delivery;
  - Joint venture – with a sliding scale of Council stake e.g. 5-50%;
  - Models involving a form of energy partnership with a private sector partner, potentially involving other public sector bodies in the area;
  - Service concession.
- The options appraisal will consider the scope for the following to be included in the optimal delivery model:
  - Energy for Edinburgh, the Council's arm's length energy services company, as a vehicle for a joint venture
  - The community, e.g. via community ownership shares



Proposals on Delivery Model go to the Policy & Sustainability Committee in March 2025. (Brodies LLP assisting – A key element will be the framework of a Customer Service Charter (service delivery, costs, recourse) to safeguard consumers 'locked in' (permanently) to a single source heat provider.)

## Heat network development

### Technical

- Feasibility review of the prospective Heat Network Zones.
- Audit and analysis of low/zero carbon heat sources in and around Edinburgh.
- Identification of an optimal spinal pipe serving a city-wide network, or linking multiple networks.

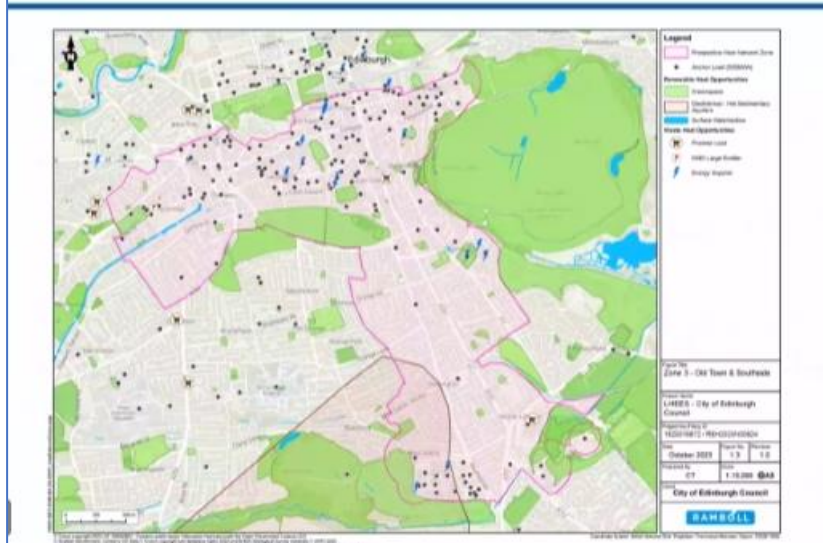
### Additional

- Statutorily designate Heat Network Zones as pending guidance.



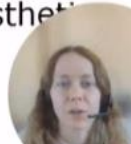
Feasibility illustrations:

## Old Town & Southside



### Why the Old Town?

- The largest zone: **12,736 loads (149 anchor loads)** and **706,174 MWh** of annual heat demand
- Strong **interest** from key stakeholders – multiple public and private organisations.
- The alternative – **air source heat pumps** – will be challenging for practical and aesthetic reasons.
- **Symbolically** important.



### Why Leith/Leith Walk/Seafield?

- Significant demand: **20,171 loads (85 anchor loads)** and **264,600 MWh** of annual heat demand.
- Opportunity to work closely with **NZELB partner organisations** – multiple public and private organisations in the area.
- Leith Walk – **highest population density in Edinburgh** – presence of tenements, conservation areas and mixed tenure buildings.
- Considerable **heat opportunity from Seafiel** wastewater treatment and the sea.



In practice:

# Heat Highways – future proofing Scotland’s heat, for good.

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## Retrofitting Heat Interface Units (HIU)

SAV



Check this:

[Excess heat is world’s largest untapped source of energy | Danfoss](#)

And: Data Centers and Energy: Reaching sustainability

[BE491240305282en-010101.pdf](#)

Data Centres will need 6x more electricity than can be generated(!)

That said, the heat generated by data storage can provide an array of energy services for re-use.

**Excess heat is the world's largest untapped source of energy**

In the EU alone, excess heat amounts to 2,860 TWh/y, almost corresponding to the EU's total energy demand for heat and hot water in residential and service sector buildings<sup>5</sup>. Much of this excess heat could instead be captured and reused.

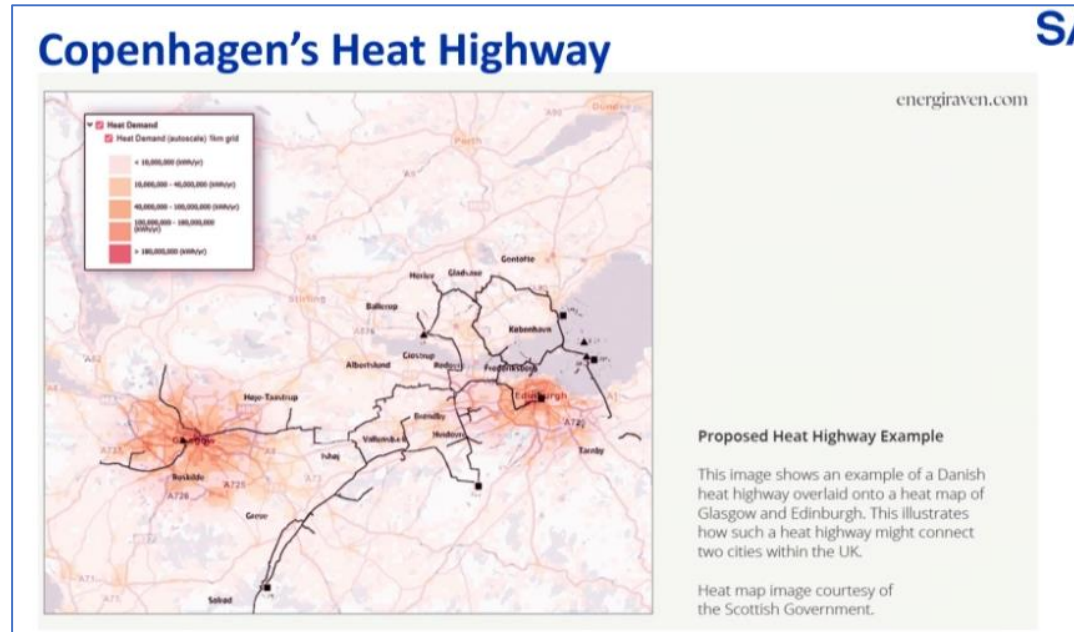
**The solutions already exist**

Heat recovery technologies exist that can use excess heat from industries, wastewater facilities, data centers, supermarkets, metro stations and commercial buildings. Excess heat can be reused to supply a factory with heat and warm water or exported to neighboring homes and industries through a district energy system. This paper presents concrete policy measures to accelerate the use of excess heat across sectors, benefitting citizens and businesses with lower energy costs and accelerating the green transition.

**Reusing excess heat is energy efficiency in its purest form**

A global push for higher efficiency can help avoid almost 30 million barrels of oil per day (that corresponds to triple Russia's average production in 2021) and 650 bcm of natural gas per year – around four times what the EU imported from Russia in 2021<sup>6</sup>.

Concept



Concept:

Superimposed on the Central Belt.

Concept:



Concept: Twin energy havens for Edinburgh



## The East Lothian Question

Can we achieve our net zero, socio-economic objectives without being energy efficient with industrial waste heat and otherwise curtailed wind electricity?

In the era of global boiling...  
...we're still freezing in our homes.

Power plants, factories, wastewater plants and data centres are just a few industrial generating facilities that produce heat.

We need a global energy system that is clean, reliable and secure, creating industrial projects that should not be seen as a barrier to our quality of life. It's time to start looking at the heat that is being produced in our industrial processes. It's time to start looking at the heat that is being produced in our industrial processes. It's time to start looking at the heat that is being produced in our industrial processes.

How long can we afford to keep turning heat to energy?

[www.energyraven.co.uk/heat](http://www.energyraven.co.uk/heat)

EnerjiRaven

Raven-i

The East Lothian Question  
Critical to the UK's Heating Future

EnerjiRaven

Surplus wind energy  
Too valuable to waste

Curtailment in where renewable energy production is deliberately reduced for zero or low power generation. This is a global issue. In the UK, it's estimated that 1.5 TWh of wind power is curtailed each year.

Using these surplus electricity capabilities, we could be producing, storing and transporting cheap heat to our homes, businesses and communities.

Why should we let this high energy asset go to waste?

EnerjiRaven

Practicalities:

Very considerable street upheaval comes with 'spine and network installation'

Reassurance needed on 'heat loss in transmission' numbers.

Massive financial outlay. What role does Scot Gov / Scottish National Investment Bank play?

Does network installation complement / impeded / distort 'Our Future Streets' programme?

3:



A reimagining of public space use, footfall, cycleway and road vehicle access across the city:

### What is 'Our Future Streets'?

#### Edinburgh's City Mobility Plan

- Net zero 2030, reduce car kms 30% by 2030, health, equity, economy
- City Centre Transformation – placemaking, pedestrian priority
- City Plan 2030, sustainable population/tourism growth

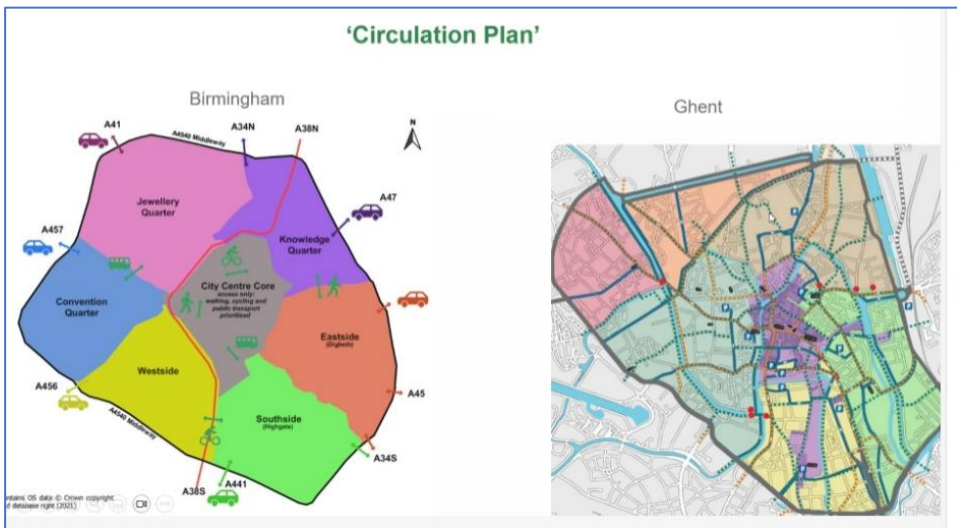
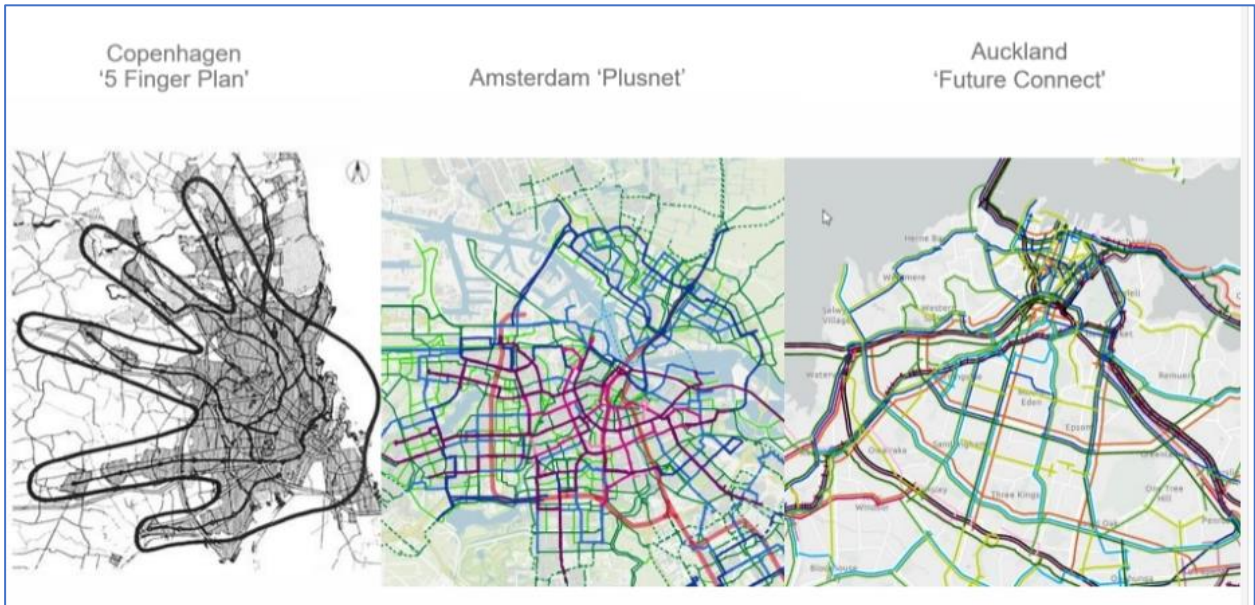
#### Our Future Streets

- Framework for long-term integrated planning
- Method for allocating street-space - prioritising 'place' and sustainable modes
- Remove through traffic from city centre, rationalise networks

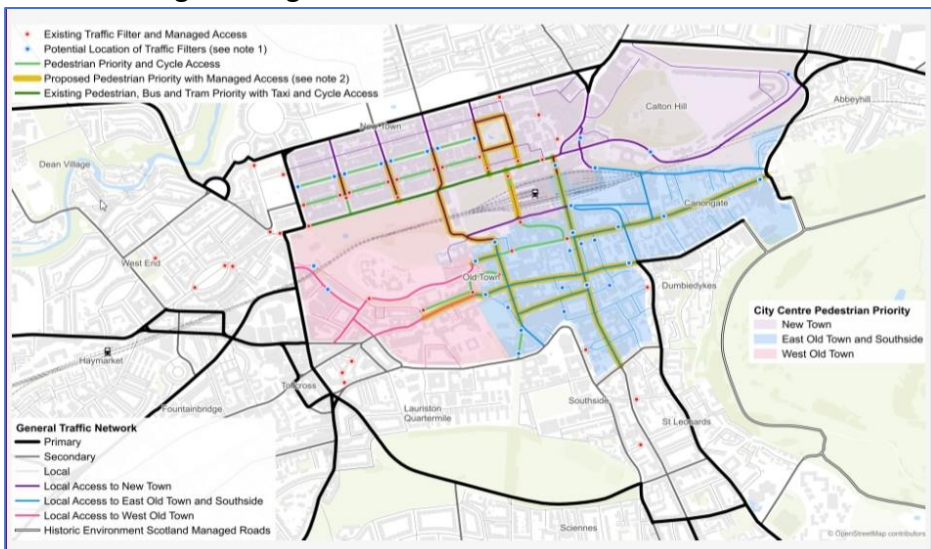
George Street transformation (at considerable expense)



Lessons and ideas from elsewhere:



In an Edinburgh setting:





Conflict resolution:

### Method for resolving conflict

- Establish desired network for each mode
- Establish level of service /width required by mode
- Identify conflicts against street widths
- Consider changes to networks against principles – eg
  - Improving footways and 'place' quality in town centres
  - Minimising bus delays
  - Achieving safe continuous cycle network
- Amend future networks:
  - General traffic - away from city centre and selected town centres
  - Cycling - off some main roads with greatest bus/walking/place conflicts

City Mobility Plan – The City of Edinburgh Council

### Future place

Map Layers

- Walk
- Bus
- Tram
- General Traffic
- Place
- Park and ride sites

Individual Networks

Place

- Primary
- Secondary

### Future walk/wheel

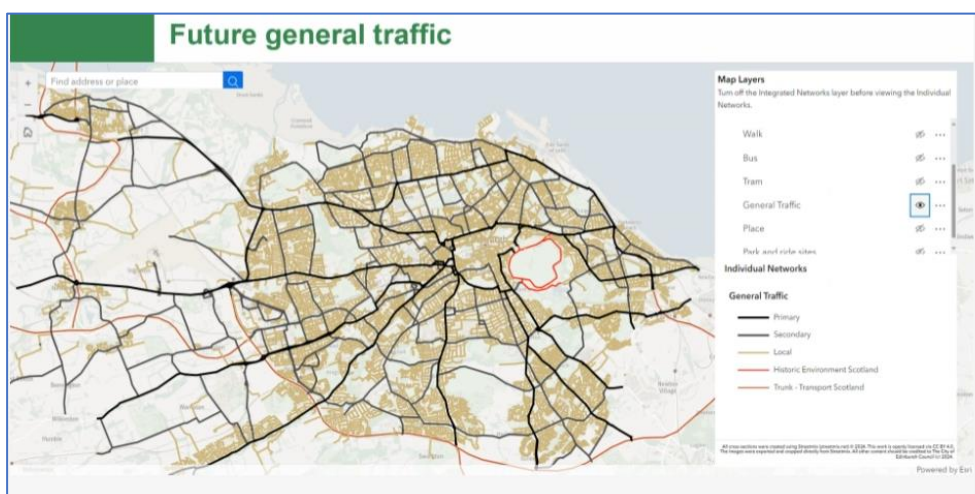
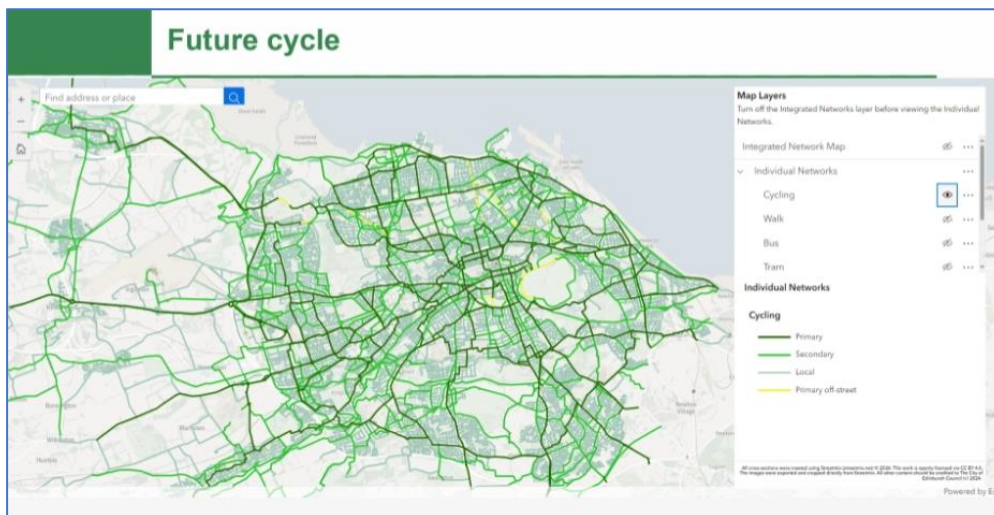
Map Layers

- Walk
- Bus
- Tram
- General Traffic
- Place
- Park and ride sites

Individual Networks

Walk

- Primary
- Secondary
- Local Connectors
- Local



## Next steps/ themes

City Mobility Plan – Capital Investment Plan

Communications & engagement

- Transparency
- Co-design

Accessibility, equity, integrated approaches

Data-driven decision making

“We’ve made significant progress in the last few years, but more of the same is not an option. Now is the time for bolder, more transformational action and Edinburgh has an ambitious agenda for change.

As well as setting a target to be a net zero city by 2030, we've also committed to eradicate poverty and become the data capital of Europe. [The Council also declared a Nature Emergency in 2023 in response to the global nature and biodiversity crisis. You can read more about what else we're doing to manage our greenspaces.](#)

Following extensive consultation, the [final Plan was approved at the Transport and Environment Committee on 19 February 2021.](#)

The Plan was reviewed and updated following further consultation in 2023. The [updated Plan was approved at the Transport and Environment Committee on 1 February 2024.](#)"

End