PERTH & KINROSS COUNCIL

Securing the future… • *Improving services* • *Enhancing quality of life* • *Making the best use of public resources*

Council Building
2 High Street
Perth
PH1 5PH

21/11/2023

A hybrid meeting of the **Climate Change and Sustainability Committee** will be held in **the Council Chamber** on **Monday, 27 November 2023** at **09:30**.

If you have any queries please contact Committee Services on (01738) 475000 or email Committee@pkc.gov.uk.

THOMAS GLEN
Chief Executive

Those attending the meeting are requested to ensure that all notifications are silent on their device and other devices are in silent mode.

Please note that the meeting will be broadcast online and recorded. The recording will be publicly available on the Council's website following the meeting.

Members:
Councillor Richard Watters (Convener)
Councillor Liz Barrett (Vice-Convener)
Councillor Hugh Anderson
Councillor Dave Cuthbert
Councillor Angus Forbes
Councillor David Illingworth
Councillor Noah Khogali
Councillor Grant Laing
Councillor Tom McEwan
Councillor Grant Stewart
Councillor Jack Welch

Climate Change and Sustainability Committee

Monday, 27 November 2023

AGENDA

MEMBERS ARE REMINDED OF THEIR OBLIGATION TO DECLARE ANY FINANCIAL OR NON-FINANCIAL INTEREST WHICH THEY MAY HAVE IN ANY ITEM ON THIS AGENDA IN ACCORDANCE WITH THE COUNCILLORS' CODE OF CONDUCT.

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CLIMATE CHANGE AND SUSTAINABILITY COMMITTEE

Minute of hybrid meeting of the Climate Change and Sustainability Committee held in the Council Chambers on 23 August 2023 at 9.30am.

Present: Councillors R Watters, L Barrett, H Anderson, D Cuthbert, J Duff (substituting for Councillor N Khogali), A Forbes, D Illingworth, G Laing, T McEwan, G Stewart and J Welch; and Mr R Oram.

In Attendance: B Renton, Executive Director (Communities), M Butterworth, A Clegg, L Cassidy, D Grant, S McCann and H Wilson (all Communities); S Hendry, K Molley, A Taylor, A Brown and M Pasternak (all Corporate and Democratic Services).

Apologies: Councillor N Khogali.

Councillor R Watters, Convener, Presiding.

The Convener led the discussion on Items 1-5, with Vice-Convener L Barrett on Item 7.

1. WELCOME AND APOLOGIES

Councillor R Watters welcomed everyone to the meeting and an apology was noted above.

2. DECLARATIONS OF INTEREST

There were no Declarations of Interest made in terms of the Councillors' Code of Conduct.

3. MINUTE OF MEETING OF CLIMATE CHANGE AND SUSTAINABILITY COMMITTEE OF 31 MAY 2023

The minute of meeting of Climate Change and Sustainability Committee of 31 May 2023 was submitted and approved as correct record.

4. CARSIE GREEN, BLAIRGOWRIE REWILDING OBJECTON – PETITION

In line with the Perth and Kinross Council Petition Procedure a petition titled 'Carsie Green Rewilding Objection' (23/221) was submitted for consideration along with an Officers Briefing Note in response to the Committee (23/222).

The Lead Petitioner declined the invitation to attend and address the Committee. Councillor B Brawn, as a local ward member, addressed the Committee and answered Members' questions.

THERE FOLLOWED A SHORT RECESS AND THE MEETING RECONVENED AT 11.03AM.

Motion (Councillor R Watters and L Barrett)

(i) That we note the Petition
(ii) That we continue with the current "Managing Grassland areas for Climate Change and Biodiversity" approach, which as I said, was unanimously agreed on 31 May 2023 by this Committee; and
(iii) To ask Officers to continue to engage with local stakeholders, including the local elected members to develop a sustainable way forward at Carsie.

Amendment (Councillor A Forbes and H Anderson)

This Committee recognises the importance of achieving our climate change objectives and acknowledges that the "Managed Grass Areas for Climate Change and Biodiversity" policy forms a part of that process.

The report to this Committee on 31 May 2023 (report 23/167 refers) agreed that the proposed plan would be developed in consultation with community groups and residents for approval by this committee at a future meeting.

It is apparent that the selection of Carsie Green as a Managed Grass Area does not have the support of local residents and that, in accordance with the consultation processes agreed on 31 May 2023 and our proposed community engagement strategy, the area should revert back to the previous cutting regime while the public consultation on Carsie Green or a suitable alternative area for inclusion within the Managed Grass Area plan is conducted.

In terms of Standing Order 21.1 a roll call vote was taken.

7 Members voted for the Motion as follows:
Councillors L Barrett, D Cuthbert, G Laing, T McEwan, G Stewart, R Watters and J Welch.

4 Members voted for the Amendment as follows:
Councillors H Anderson, J Duff, A Forbes and D Illingworth.

Resolved:
In accordance with the Motion.

5. PRESENTATION – LOCAL HEAT & ENERGY EFFICIENCY STRATEGIES (LHEES)

D Grant, Climate Change and Sustainable Development Team Leader provided a slide-based presentation on the Perth and Kinross Local Heat and Energy Efficiency Strategy (LHEES) and Delivery Plan (2024-29) Progress Update.

D Grant answered members' questions thereon.

6. PRESENTATION – SMART LOCAL ENERGY SYSTEMS

It was agreed to defer this item to the next meeting of the Committee.

7. NATURE RESTORATION FUND 2022-23

There was submitted a report by the Head of Planning and Development (23/220) (1) providing an update on the Nature Restoration Fund allocation received by Perth and Kinross Council for 2022/23 and 2023/24; and (2) setting out the proposed revised process to use the funds in the current financial year.

Resolved:

(i) The proposed revised process to allocate Nature Restoration Fund funding, be approved.

(ii) The delegation of authority to approve community led projects to the Executive Director (Communities), be approved.

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Perth And Kinross Council

Climate Change And Sustainability Committee

27 November 2023

STATUTORY BIODIVERSITY DUTY: REPORT ON DELIVERY - JANUARY 2021 TO DECEMBER 2023

Report by Strategic Lead – Economy, Development and Planning
(Report No. 23/328)

1. PURPOSE

1.1 Under the Nature Conservation (Scotland) Act 2004, all public bodies in Scotland have a duty to further the conservation of biodiversity when carrying out their functions. The Wildlife and Natural Environment (Scotland) Act 2011 further requires all public bodies to report every three years on how they comply with this duty. This is the third report, covering the period from 1 January 2021 to 31 December 2023 demonstrating how Perth and Kinross Council has performed regarding the biodiversity duty for this three-year period.

1.2 The report includes actions undertaken by PKC to:

- protect and enhance biodiversity
- mainstream nature-based solutions, climate change and biodiversity throughout the organisation
- engage with the public and develop the workforce
- monitor actions undertaken and conduct/commission research, and
- draw attention to main achievements for biodiversity over the last three years and look ahead to potential challenges.

2. RECOMMENDATIONS

2.1 It is recommended that Committee:

- notes the significant positive work undertaken over the period 2021-2023
- approves the Biodiversity Duty Report (Appendix A) to be uploaded to the PKC website and sent to the Scottish Government prior to the 31 December 2023 deadline.

3. STRUCTURE OF REPORT

3.1 This report is structured over the following sections:

- Section 4: Background/Main Issues
- Section 5: Summary
- Section 6: Conclusion
- Appendix A: Biodiversity Duty Report

4. BACKGROUND / MAIN ISSUES

4.1 The Council has a statutory duty to protect and enhance biodiversity when carrying out their functions. All public bodies must report to Scottish Government every three years on how they comply with this duty. This report covers the period 1 January 2021 to 31 December 2023, demonstrating how Perth and Kinross Council has performed regarding the biodiversity duty.

5. SUMMARY

5.1 The purpose of this report is to summarise some of the Council's successes in delivering the statutory biodiversity duty and to submit the report to the Scottish Government in line with guidance provided by NatureScot. Compared to the last report in 2020, the guidance for the production of this report requests more details on successes, challenges encountered and more explanation of ongoing or proposed monitoring of activities undertaken for biodiversity. More details on research and monitoring in relation to nature-based solutions, climate change and biodiversity are also requested.

5.2 There has been significant positive actions taken both by the Council directly, and by communities with support from the Council. These have led to positive progress in addressing the Biodiversity emergency across Perth and Kinross. Key highlights identified in the report include:

1. receiving over £700k of Scottish Government Nature Restoration Fund from 2021 that has enabled more than 30 projects to be successfully delivered by the Council and community groups, with a further 18 on-going in 2023/24. This has supported and empowered local communities to carry out their own projects to enhance nature and increase nature connectedness.
2. developing a new approach to grassland management across greenspaces.
3. developing and adopting the Planning for Nature Supplementary Guidance to set clear expectations and requirements for planning applications regarding information on biodiversity.
4. mainstreaming of biodiversity throughout the organisation – for example, the new Protecting Swifts in Conservation Buildings working group set up in 2023, where the Council is working in partnership with the Perth & Kinross Heritage Trust in considering swifts in the heritage funded conservation projects.
5. building a successful partnership with the Scottish Invasive Species Initiative and local landowners to deliver a catchment scale approach to Invasive non-native species (INNS) control project on the River Almond.
6. creating the new Climate Action website and social media channels to raise awareness of actions to tackle the twin emergencies of climate change and nature loss.
7. developing our Biodiversity Towns and Villages programme, with Blairgowrie & Rattray named as Scotland's first Biodiversity Town.
8. supporting partnership to tackle landscape scale challenges with the Perthshire Nature Connections Partnership and Conservation Officer post.

9. increasing our biodiversity workforce, through the budget process, with the establishment of the Climate Change Officer into Community Greenspace and creation of a new Climate Change Land Restoration Officer to further landscape scale restoration and upskilling our existing workforce.
10. growing the membership of PKC staff Biodiversity Ambassadors.

5.3 NatureScot provides guidance on the contents of the Biodiversity Duty Report and requests the inclusion of main challenges for the next three years. The challenges identified by various public bodies are collated and analysed by NatureScot and Scottish Government to identify commonalities. This can then be used to prioritise funding or create stronger policy and guidance for public bodies. The attached report set out the main challenges for improving biodiversity over the next three years and includes:

1. the Council has increased its biodiversity resources over the last three years, reflecting the increased need to incorporate greater levels of biodiversity enhancement into planning decisions and operational enhancements. However, more work needs to be undertaken to:
    a. implement NPF4 requirements and follow-ups in future Local Development Plan and creation of nature networks across Perth and Kinross;
    b. provide long term management plans and tree planting plans for Council's owned and maintained land;
    c. undertake long-term biodiversity monitoring of projects.
2. a more sustainable approach to the NRF funding and consistency of themes to produce more effective results
3. Tayside does not have a local biodiversity records centre which is a challenge for the Council as biodiversity data is held in several different locations rather than one centralised database. A records centre would also aid development management and land use decisions as well as creation of nature networks. A new Scottish Government funded project called Better Biodiversity Data is analysing records centres across Scotland, as well as looking at solutions to ensure better storage and interpretation of biological records. PKC is a partner of the project.
4. While the Council has its Local Biodiversity Action Plan (LBAP), further consideration needs to be given to the development of long-term Council's specific biodiversity and greenspace strategies and policies. These collectively would support co-ordination of delivery, prioritisation, and securing necessary resources for biodiversity enhancements on Council's owned land to deliver multiple benefits.
5. Effective invasive non-native species (INNS) control requires a catchment-wide long-term plan. There is not currently one for the River Tay catchment, which is a challenge for effective management. PKC created the new post of Climate Climate Change Land Restoration Officer in 2023. An element of this role will be to explore the potential of PKC being a part of a larger catchment management group.

6. CONCLUSION

6.1 Perth and Kinross Council has achieved positive outcomes for biodiversity over the last three years with enhanced mainstreaming and prioritisation of climate change and reducing biodiversity loss. The Council is appreciative of the Scottish Government's and NatureScot's allocation of funds from the Nature Restoration Fund to allow the Council to carry out practical activities to restore nature. It has also given the Council the opportunity to support and empower local communities to carry out their own projects to enhance nature and increase nature connectedness. Local community and staff volunteers contributed a significant amount to enhancing biodiversity across Perth and Kinross.

Author

Name	Designation	Contact Details
Joanna Dick	Tree and Biodiversity Officer	(01738) 475000 ComCommitteeReports@pkc.gov.uk

Approved

Name	Designation	Date
Barbara Renton	Executive Director (Communities)	20 November 2023

APPENDICES

- Appendix A - Statutory Biodiversity Duty: Report on Delivery, January 2021 to December 2023

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ANNEX

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	**Yes / None**
Community Plan / Single Outcome Agreement	**Yes**
Corporate Plan	**Yes**
Resource Implications	
Financial	**No**
Workforce	**No**
Asset Management (land, property, IST)	**No**
Assessments	
Equality Impact Assessment	**No**
Strategic Environmental Assessment	**No**
Sustainability (community, economic, environmental)	**No**
Legal and Governance	**Yes**
Risk	**No**
Consultation	
Internal	**Yes**
External	**No**
Communication	
Communications Plan	**No**

1. Strategic Implications

Community Plan/Single Outcome Agreement

1.1 This report supports all of the priorities within the Community Plan 2022-27.

(i) Reducing Poverty (including child poverty, fuel poverty and food poverty)
(ii) Mental and physical wellbeing
(iii) Digital participation
(iv) Skills, learning and development
(v) Employability

1.2 The report summarises the positive on-going work related to biodiversity, which has proven mental and physical wellbeing benefits.

Corporate Plan

1.3 This report supports the objectives within the draft new Corporate Plan:-

(i) Children and young people grow up safe, respected, well-educated, and confident in their ability to realise their full potential;
(ii) People and businesses are increasingly able to prosper in a local economy which support low carbon ambitions and offers opportunities for all;
(iii) People can achieve their best physical and mental health and have access to quality care and support when they need it;
(iv) Communities are resilient and physically, digital and socially connected;
(v) Perth and Kinross is a safe and vibrant place, mitigating the impact of climate and environmental change for this and future generations.

2. Resource Implications

Financial

2.1 None.

Workforce

2.2 None.

Asset Management (land, property, IT)

2.3 None.

3. Assessments

3.1 The Impact and Value Assessment Tool has been completed for this paper, with the following findings:

3.2 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties. The Equality Impact Assessment undertaken in relation to this report can be viewed clicking here.

(i) Assessed as **not relevant** for the purposes of EqIA

Strategic Environmental Assessment

3.3 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals.

3.4 However, no action is required as the Act does not apply to the matters presented in this report. This is because the Committee are requested to note the contents of the report only and the Committee are not being requested to approve, adopt or agree to an action or to set the framework for future decisions.

Sustainability

3.5 Under the provisions of the Local Government in Scotland Act 2003 the Council has to discharge its duties in a way which contributes to the achievement of sustainable development. Under the Climate Change (Scotland) Act 2009 the Council also has a duty relating to climate change and, in exercising its functions must act:

- in the way best calculated to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programmes; and
- in a way that it considers most sustainable.

3.6 The paper highlights positive work, but has no direct impact.

Legal and Governance

3.7 Approval of Appendix A is required for the Council to fulfil its duties under the Nature Conservation (Scotland) Act 2004.

Risk

3.8 Not applicable.

4. Consultation

Internal

4.1 A request for feedback and contributions went out to all Service Managers in the Council. Key services working on biodiversity have contributed to the report.

External

4.2 None.

5. Communication

5.1 Not applicable.

2. BACKGROUND PAPERS

2.1 NatureScot Biodiversity Duty Guidelines.

Appendix A

Statutory Biodiversity Duty: Perth & Kinross Council Report on Delivery January 2021 to December 2023

Photo: volunteers spraying invasive non-native plants on the River Almond

Date: 12th October 2023

Contact: Joanna Dick, Biodiversity and Tree Officer, Biodiversity@pkc.gov.uk

Contents

List of Abbreviations

BTO	British Trust for Ornithology
CCROA	Climate Risk and Opportunity Assessment
GIS	Geographical Information System
HRA	Habitat Regulations Appraisals
IVA	Impact and Value Assessment
INNS	Invasive Non-Native Species
JHI	James Hutton Institute
LBAP	Local Biodiversity Action Plan
LDP	Local Development Plan
NPF4	National Planning Framework 4
NRF	Nature Restoration Fund
OSQA	Open Space Quality Audit
PKCCC	Perth and Kinross Climate Change Commission
PKC	Perth and Kinross Council
PKCT	Perth and Kinross Countryside Trust
PNCP	Perthshire Nature Connections Partnership
SEPA	Scottish Environment Protection Agency
SISI	Scottish Invasive Species Initiative
SRUC	Scotland's Rural College
SSSI	Site of Special Scientific Interest
SuDS	Sustainable urban drainage systems
SuDSNET	Sustainable Urban Drainage Systems Network
TayARG	Tayside Amphibian & Reptile Group
TBP	Tayside Biodiversity Partnership
TPO	Tree Preservation Order

1. Introduction

Under the Nature Conservation (Scotland) Act 2004, all public bodies in Scotland have a duty to further the conservation of biodiversity when carrying out their functions. The Wildlife and Natural Environment (Scotland) Act 2011 further requires all public bodies to report every three years on how they comply with this duty. This is the third report, covering the period from 1st January 2021 to 31st December 2023 demonstrating how Perth and Kinross Council has performed regarding the biodiversity duty for this three-year period.

Perth and Kinross Council (PKC) has achieved much for biodiversity over the last three years with enhanced mainstreaming and prioritisation of climate change and reducing biodiversity loss. Many challenges remain and there are multiple opportunities to further the conservation of biodiversity in our daily activities. Recognising the urgency of biodiversity loss and the interlinkages with climate change, in November 2022 the Council declared a Climate and Biodiversity Emergency.

Perth and Kinross Council is a local authority with responsibility for an area of 5,300km^2 housing a population of 150,800 people (Perth and Kinross Council, 2022). The Council is made up of 40 elected Councillors representing 12 wards. The Council operates through a system of committees and sub-committees with officers reporting to committees on relevant matters.

A new Corporate Plan 2022 – 27 was approved by the Council in December 2022, and sets the vision for "a Perth and Kinross where everyone can live life well, free from poverty and inequality". It sets out priorities and corporate outcomes which are aligned with the Council's values and designed to address or mitigate the impact of the many challenges the Council and the communities across Perth and Kinross are facing now and in the coming years. Biodiversity is aligned with one of the seven corporate priorities '*Tackling climate change and supporting sustainable places*'.

Day to day governance concerning biodiversity from May 2022 onwards has been directly through the Climate Change and Sustainability Committee. The committee considers matters relating to climate change, countryside management, parks and open spaces, trees and woodlands, environmental health, flood prevention, reservoirs, environmental assessment, sustainable development and environmental policy, environmental protection and enhancement, and waste management.

Prior to this, biodiversity sat with the Environment, Infrastructure and Economic Development Committee, which has retained responsibility for many linked topics including: the built environment (structures, roads, bridges, transportation networks, parks, recreation spaces and distribution networks for water and energy, fleet assets), the protection of public health, urban and rural regeneration, and economic well-being.

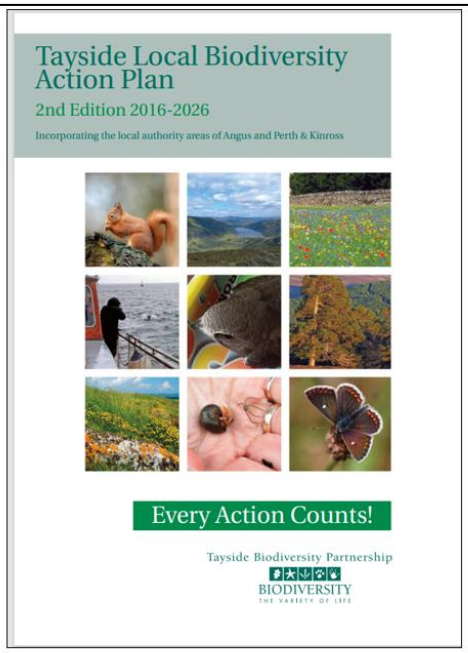
We are grateful to the Scottish Government and NatureScot for the allocation of funds from the Nature Restoration Fund to allow PKC to carry out practical activities to restore nature. It has also given PKC the opportunity to support and empower local communities to carry out their own projects to enhance nature and increase nature connectedness. Staff Biodiversity Officers and volunteers across the Council area have contributed a vast amount to many projects. Many challenges remain and there are multiple opportunities to further the conservation of biodiversity in our daily activities.

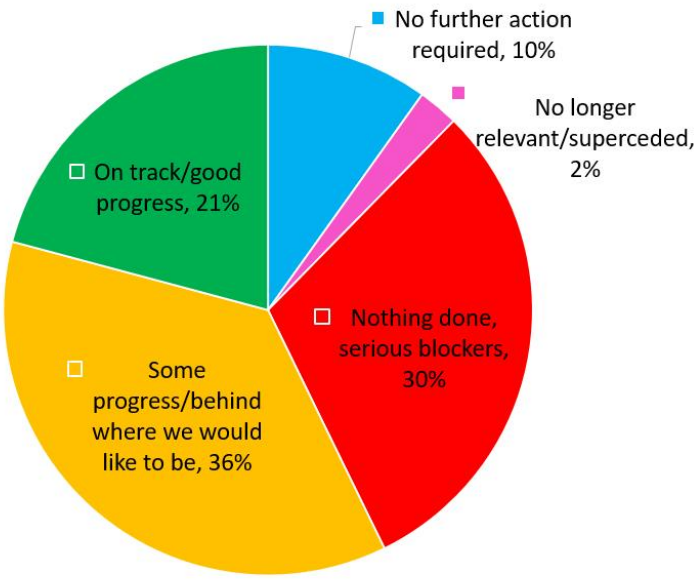
2. Actions to Protect and Enhance Biodiversity

Perth and Kinross Council is a partner of the Tayside Biodiversity Partnership (TBP) which allows cross border collaborative working between Perth and Kinross and Angus Councils in promoting biodiversity through the Tayside Biodiversity Co-ordinator. We are committed to delivering the actions of the Tayside Local Biodiversity Action Plan (LBAP) 2016-26 and supporting and working with the TBP to safeguard our habitats and species.

Since 2021, the TBP Co-ordinator has been employed by PKC full-time and is central to advising on biodiversity priorities and projects in the Perth and Kinross area. The Biodiversity Co-ordinator is now embedded wholly within PKC, working closely with the Perth and Kinross Countryside Trust allowing greater focus on integrating actions within the local authority and working closely with local communities.

In 2022, PKC undertook a review of all 284 PKC actions in the Tayside Local Biodiversity Action Plan (LBAP) allocating a traffic light system of red, amber and green to indicate progress and identify gaps. The results are being used to prioritise project work and to guide allocation of the Nature Restoration Fund (NRF).





Protecting Biodiversity in Development Management

Planning applications are screened by the Tree and Biodiversity Officer for potential impacts on biodiversity. The sustainable land use tool on Geographical Information System (GIS) highlights ecological and biodiversity constraints and is used by Officers to inform proposals that require an Environment Impact Assessment and/or Habitat Regulations Appraisal to ensure the Council complies with environmental legislation and statutory requirements. This systematic approach contributes to the Council's biodiversity duty.

Year	Total number of planning applications	Number of planning applications assessed for biodiversity constraints	Number of planning applications where biodiversity advice and recommendations were provided	Number of planning applications approved with biodiversity conditions
2021	1505	352	332	151
2022	1396	379	342	127
2023 (to 4 October)	995	371	261	61

Planning For Nature Guidance

PKC developed the Planning for Nature Supplementary Guidance, which was adopted in April 2022. This brings together the expectations and requirements for planning applications regarding information on biodiversity. The importance of accurate ecological surveys undertaken in accordance with best practice and carried out by suitably qualified and experienced persons is stressed as well as the need for impact assessments and clear evidence of the mitigation hierarchy. Implementation of the Guidance has been supported by workshops for Development Management Officers and was highlighted at the 2023 Housebuilders Forum to raise developers' awareness.

Enhancing Biodiversity in Development Management

Appendix 4 of the Planning for Nature Supplementary Guidance sets out a checklist for all applications and specific developments as well as minimum enhancement requirements. The standard biodiversity enhancement measures set out in the Planning for Nature SG are strengthened by NPF4. All major housing developments must include the measures below.

Minimum Requirement	Reasoning
Hedgehog Highways to be created in fencing via a 13x13cm gap.	Contributes to Tayside LBAP objective to enhancing connectivity.
Wildlife Kerbs installed adjacent to all road gullies within 500m of a SUDS pond	Contributes to Tayside LBAP project to mainstream use. Tayside are leading the way with this approach.
Swift nest boxes/bricks in settlements with swifts within 2km, at least one integrated swift nest brick into 25% of homes over 2 stories.	Contributes to Tayside LBAP projects Sparrows on the Edge and the Tayside Swift Conservation Project.
Barn owl nest boxes in rural areas	Contributes to Tayside LBAP action to provide nesting boxes.
House/tree sparrow nest boxes in rural areas	Contributes to Tayside LBAP Sparrows on the Edge Project.
Bat roosting boxes/bricks/tubes in 25% of 2 storey houses	Contributes to Tayside LBAP Urban Bats Project.

Delivering NPF4 Requirements for Enhancement

NPF4 introduced a need for Planning Authorities to require positive effects from development including significant enhancement in major and EIA developments. As no tools or resources were provided nationally alongside this requirement, developers in Perth and Kinross have been encouraged to set out their enhancement following advice in the Planning for Nature SG.
Required tools and resources include:

- a metric for biodiversity net gain
- training and resources to assess such a metric
- nature network guidance and mapping tools
- methodology, guidance or established mechanism to plug into for off-site compensation and enhancement.

PKC is currently developing an interim guidance note to supplement the Planning for Nature guidance to further support implementation but recognise that full implementation of NPF4 will not be possible until the tools are developed. The potential for offsite enhancement has been considered and in partnership with the Perth and Kinross Countryside Trust (PKCT) work has been commissioned to explore how this could work using the Riverwoods project as a pilot study.

Local Nature Conservation Sites

The project to identify Local Nature Conservations Sites is well underway with over 200 local biodiversity sites and 90 geodiversity sites initially identified. This involved a significant amount of preparatory work. Survey work was started in 2021 by a graduate ecologist, BSBI recorders and student volunteers. Surveying restarted in 2023 with a new graduate ecologist and a new BSBI recorder. Surveys for both geodiversity sites and biodiversity sites are expected to be completed by summer 2024 with adoption mid-2025. Candidate sites are included on internal mapping and although not yet designated, existing information on these sites is used to inform planning applications in accordance with National Planning Framework 4 (NPF4) policy 3, as well as informing responses to forestry consultations.

Tay Forest National Park Bid

In response to the Scottish Government intention to create at least one new national park, PKC agreed to prepare a bid submission for a new national park in northern Perthshire, called the Tay Forest National Park. The opportunity to submit a bid to create a new national park is a rare opportunity to seek international recognition for Highland Perthshire's outstanding natural beauty and rich cultural and landscape diversity. Engagement with communities and stakeholders started in Autumn 2023 to shape the bid proposals further with in-person and online events. A key aim is to ensure that the bid submission and the vision for a national park it sets out reflects the views of the many different people that live and work in the area. The bid is due to be reported in finalised form to the full Council prior to submission to Scottish Government at the end of February 2024. Scottish Ministers are expected to announce the decision in mid 2024.

Case Study: Protecting Swifts in Conservation Buildings

In 2023, a new Protecting Swifts in Conservation Buildings working group was created within PKC, highlighted in the below article from the Tayside Swifts 2023 Newsletter. The TBP Tayside Swifts Project are a part of the working group who raise awareness of swifts and provide information on how to improve habitats for swifts. Community Swift Conservation Projects have taken place in five Perthshire villages. The Saving our Swifts Project was awarded a Highly Commended certificate in the 2022 Nature of Scotland Awards run by the RSPB and NatureScot.

Perth & Kinross Council Champions Swifts

© D. Muir

A new 'Protecting Swifts in Conservation Buildings' Working Group was created within Perth and Kinross Council in May 2023 to ensure swift nest conservation is considered when Listed Building Consents and planning applications for old buildings are submitted to PKC. Council officers are now working with the Perth & Kinross Heritage Trust as they distribute the Perth City Heritage Fund to improve the condition of listed buildings as often these contain nest sites for swifts. Working with the Tayside Biodiversity Partnership and Tayside Swifts, this important species will be considered early in the process and the provision of nesting boxes or bricks considered where appropriate.

Joanna Dick, PKC

Biodiversity Enhancement in New PKC Projects

Colleagues in PKC's Planning and Property departments work together to ensure biodiversity is protected and enhanced through upgrading and new build Council projects. New buildings require biodiversity enhancement measures in line with the Planning for Nature Supplementary Guidance. Careful consideration regarding creating more ecologically friendly planting beside the usual utility type spaces that schools require has resulted in wildflower areas at the new Riverside Primary School. Perth High School and the Riverside Primary School will provide bat boxes on the buildings and trees and nest boxes for house martin, swallow, swifts, and sparrows. Both school grounds will benefit from compensatory native tree planting and native hedgerows.

Perth Museum

The under-construction Blairgowrie Recreation Centre will provide sparrow and swift boxes, poles with bat boxes and native tree and hedgerow planting within the extensive landscaping. The newly transformed Perth Museum has swift boxes above the parapet in the city centre. These measures contribute towards many PKC actions in the Tayside Local Biodiversity Action Plan. Through the process of good design and Planning advice and conditions, biodiversity enhancement measures will be the norm for PKC new build and extension projects.

Protecting Trees, Forestry and Woodland in Development Management

The Council aims to safeguard trees and woodlands through the development management process. Since February 2019, two posts with an enhanced tree protection remit have met weekly to review planning applications and work with developers, landowners, and local stakeholders to ensure woodland cover is not reduced within the Council area. The Tree Enforcement Officer assesses requests for Tree Preservation Orders and tree works in Conservation Areas ensuring trees of amenity and biodiversity value are protected.

PKC are robust in requesting tree surveys and tree protection plans to inform the planning process and projects undertaken by the Council as set out in the Planning for Nature SG. This includes survey best practice, applying the mitigation hierarchy, how to apply the trees and woodland policy of LDP2 and what is expected from tree and woodland surveys. The Tree Enforcement Officer provides training to Council colleagues and in 2023 the Woodland Trust delivered staff training to raise awareness of the importance of veteran trees, ancient woodland, and the new requirements of NPF4.

Protecting and Enhancing Trees, Forestry and Woodland in Land Use Change

A new dedicated woodland enquiries email address was created in 2019 to aid direct communication with partners such as Scottish Forestry and private forestry companies. Advice is provided in line with the Council's Forest and Woodland Strategy to promote sustainable forest management and planting the right type of woodland in the right place to enhance landscape and biodiversity as well as enhancing carbon capture and storage. The Forest and Woodland Strategy is to be reviewed in 2023/24.

Consultation Type	Number of consultations from 2021 to 2023
Felling permissions	85
Long term forestry and land management plans	48
Woodland creation proposals	67

An annual review is held with Scottish Forestry to ensure PKC adds value to the process. In response, we altered the process to improve communication with the Perth and Kinross Outdoor Access Forum. PKC are working with the Perth and Kinross Countryside Trust to ensure the Council mapping system includes species rich grassland to inform our responses to woodland creation proposals.

In 2023 PKC responded to the Scottish Forestry grant scheme consultation highlighting the need to support smaller landowners, to fund natural regeneration, increase the proportion of native species and to emphasise the need for sustainable deer management and reduced deer fencing.

Case Study: Protecting Riparian Trees of Value from Beaver Damage

A new project was created in 2022 to identify trees of value at risk from beaver damage on council-owned land. GIS mapping data was combined with existing beaver territory data from NatureScot to identify priority valuable trees that should be protected from beaver damage.

Trees of value were identified as ancient woodland, trees protected by a Tree Preservation Order (TPO), trees within a Conservation Area, and trees of cultural, aesthetic and biodiversity value. PKC Community Greenspace staff have been working with volunteers to protect trees with fencing in several locations.

From 2020, PKC Community Greenspace operations ceased cutting or strimming around trees in parks and greenspaces to avoid damage to trees. The PKC Forest Plan covers 36 woodland sites in Council ownership and management and is being updated. An Ash-Dieback Plan is in draft, and a new management plan has been created with a further three in draft following public consultation.

The Nature Restoration Fund was used to enhance the condition of three Sites of Special Scientific Interest (SSSI's) and other woodlands within PKC ownership by removing negative pressures such as invasive non-native species and creating open ground. The Woodland Trust provided on-site advice which has been invaluable.

Westbank Nursery

PKC is fortunate to still own and operate a plant nursery with expert staff growing 26 species from local seeds and cuttings. These will be planted in local parks and greenspaces ensuring local provenance and genetics. This approach has the added benefits of reduced risk of bringing in pests, diseases and invasive non-native species, along with the carbon savings associated with having trees delivered from nurseries elsewhere.

The Nursery offers many opportunities to deliver training and develop rural skills and community benefits, but investment is required to realise the full potential of the site.

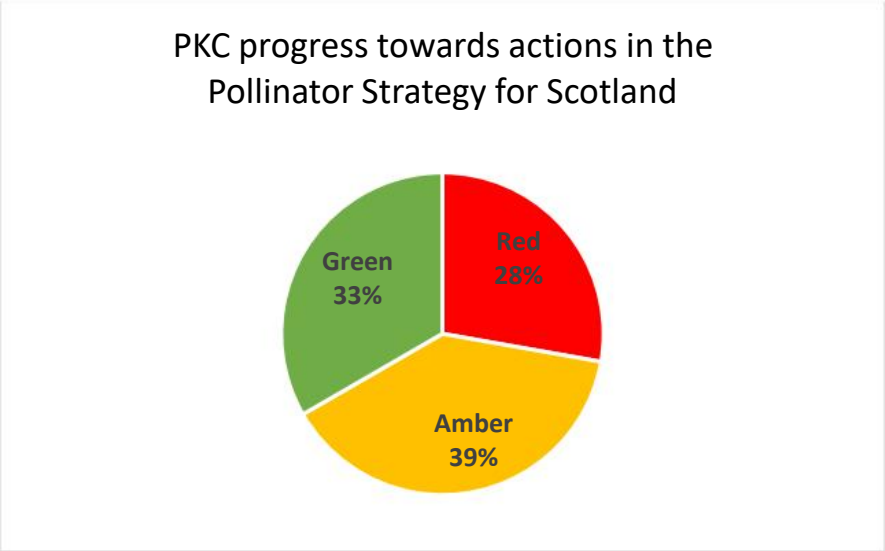
Tree Planting in Parks and Greenspaces

PKC was awarded the Queens Green Canopy City Champion status for Perth City's Jubilee Avenue, a row of 27 semi-mature hornbeam trees in the South Inch in Perth. The Avenue is marked by special posts at either end commemorating the Jubilee. The status was granted to towns with create an environmental legacy and promote the importance of urban trees and woodland to health, air, quality, and climate. Additional trees were planted using the PKC Climate Action Fund.

Year	Number of trees planted using PKC Climate Action fund and as part of Queen's Green Canopy	Ongoing maintenance planned
2021/22	1031	Trees watered and ad hoc maintenance as required. Replaced as required.
2022/23	670	
2023/24	482	

Action for Pollinators

In 2022, PKC conducted a review of the 18 actions under 5 objectives of the Pollinator Strategy for Scotland 2017-2027 and the results are provided below. This led to enhanced focus on grassland management, the B-Lines project and creating more connected habitats for pollinators.



Protecting and Enhancing Grasslands

In response to the action in the Climate Action Plan and several requests from communities to manage more greenspaces for biodiversity, in 2021, Community Greenspace undertook grassland management trials encompassing two different approaches. The first involved "Managed for Wildlife" sites where grass was mowed once annually, and the cuttings removed. The second approach focused on designating "No Mow" areas, where the grass remained untouched.

Year	Number of Managed for Wildlife sites	Area of Managed for Wildlife (acres)	Number of No Mow sites	Area of No Mow (acres)	Public consultation ran
2021	0	0	0	0	No
2022	7	9.03	36	53.68	Yes
2023	7	9.03	36	53.68	No

Biodiversity monitoring was carried out in 2022 by volunteers and PKC Biodiversity Ambassadors. Results indicated that uncut areas contained more wildflowers, more wildflowers in flower, and a

higher number of different species compared to amenity cut grass. Bees, butterflies and other insects were more abundant in uncut grass areas than cut, see the Results and Discussion Paper for more detailed results. An online public consultation in 2022 returned positive results with 73.8% of 386 respondents were in favour of the proposals.

Following these findings, the Climate Change and Sustainability Committee approved proposals to develop a long-term plan, increase the number of sites and ensure close collaboration between Council officers, community groups, and residents to shape future plans. NRF was used to purchase two pedestrian flails with interchangeable flail head and scythe attachment. Machines will be made available to path groups for maintaining the core path network with the flail head and the scythe attachment for emerging meadow management groups.

Changes to grassland management have focused on parks and greenspaces and road verges will be considered in future. In 2023, a positive meeting was attended by PKC, Plantlife and the Tayside Amphibians and Reptile Group to discuss a collaborative approach to verge management for wildlife.

Successes include collecting biodiversity data, engaging with local communities, and receiving encouraging feedback from NatureScot and fellow Councils. Challenges include public perception, ensuring areas have grass mown edges and paths and on-site signage.

Strathmore B-Lines Project

The Strathmore B-Lines Project is the first B-Lines initiative in the Tayside region aiming to restore 20 hectares of wildflower-rich grasslands and other nectar-rich habitats across 20 sites to combat the decline of pollinating insects from Dunkeld to Montrose. Run by Buglife Scotland in partnership with

TBP, PKC and Angus Council, PKC have agreed to manage 3 sites. In addition, a Farm Cluster near Alyth is achieving large-scale hedging and tree planting. The TBP are assisting the community to map a wildlife corridor from Blairgowrie up to the B-Line that runs north of the town.

Case Study: Auchterarder Park Flush of Flowers

In 2023 Community Greenspace led a £290k redesign and build of a community park play facility in Auchterarder Park. Tree planting, wildflower seeding, and wildflower turfing were incorporated into the design resulting in in a flush of wildflowers this summer increasing species diversity of the site. A Birds and Bees wildflower turf contained 41 native flowers specially selected to be pollinator friendly and a Species Rich Lawn Turf blended 12 slow growing grasses and 23 native flowers. The creation of wildflower areas within this publicly accessible space enables improves the visual diversity of the park, raises awareness of the range of wildflowers and pollinators that depend on them and the many benefits to people, place, and nature.

Changes to grassland management on Council owned land, the B-Lines and community projects are providing habitat for pollinators. In partnership with NatureScot, a pollinator maze was created in the busy greenspace Kirkgate Park on the banks of Local Leven National Nature Reserve in 2021. The Perth Heather Garden is maintained by a group of dedicated volunteers and contains 550 varieties that are valuable for pollinators.

Green Graveyards

The Tayside Biodiversity Partnership assisted PKC Officers to create a guide to managing graveyards in PKC to become Green Graveyards, a key project in the Tayside LBAP. Twenty Snowdrops for Pollinators projects have taken place in graveyards in 2022 and will be expanded in 2023 and 2024. Homes for Wildlife projects have also included graveyards with 20 communities.

Enhancing Water and Wetlands for Biodiversity

Tayside Biodiversity Partnership Ponds for Puddocks

Using Nature Restoration Funding in 2021-22, the SuDS Ponds Project improved six ponds with the help of local volunteers, including local schools and a commercial volunteer day. A second phase in 2022-23 saw the PKC Biodiversity Ambassadors take part in the launch event at the North Inch Pond where there was a photocall with the Courier and an interview with BBC Radio Scotland Out of Doors.

Phase 3 of the project from October 2023 will be the final phase to complete this suite of SuDS ponds across Perth and Kinross. This will specifically safeguard amphibians and enhance the sites for invertebrates, especially dragonflies. The project, collectively called Ponds for Puddocks has been nominated in the Nature of Scotland 2023 Community Innovation Award.

Amphibian Ladders

In conjunction with TayARG (the Tayside Amphibian & Reptile Group) gullypot surveys were undertaken as part of the SuDS Ponds Project to detect problem areas. In 2002, 60 amphibian ladders were made by volunteers and installed in gullypots to prevent amphibians falling in and becoming trapped. This was replicated in 2023 with ladders being made and installed in Guildtown. More volunteer ladder making workshops are planned for autumn 2023 in Coupar Angus and Stanley. Other Local Authorities have been in touch requesting further information on our approach.

Invasive Non-Native Species (INNS) Treatment

PKC are members of the Perth and Kinross INNS Working Group led by NatureScot with Scottish Forestry, SEPA and TBP. Through the Development Management process and Planning for Nature SG, we require INNS management plans are submitted detailing eradication plans where INNS are present on site. As part of the largest PKC construction project, the Cross Tay Link Road, the contractor BAM facilitated removal of INNS along the Perth Lade in September 2023.

Case Study: New River Almond Project

Using NRF funding, PKC worked in partnership with the Scottish Invasive Species Initiative (SISI) to create a control programme to remove giant hogweed, Japanese knotweed, white butterbur, and American skunk cabbage from the river Almond. Catchment scale control of a river system requires significant resources and a strategic, multi-stakeholder approach. By working directly with SISI, PKC have been able to follow their model of INNS control, engaging and working with key stakeholders including landowners, contractors, and local volunteers. By doing so, control efforts have been maximised.

A total of 35 people signed up to volunteer and after training attended 15 volunteer sessions on the Almond in May and June 2023, including a session for INNS week. Volunteers carried out spraying where giant hogweed infestations were severe and contractors treated harder to reach areas.

Overall volunteers contributed 110 hours of control time in 15 working days, with an additional 70 hours of control time contributed by PKC and SISI staff. This gave a grand total of over 25 working days with an additional 6 days of contractor work. This effort has allowed PKC to bring approximately 22km of river under management in 2023, reaching from the upstream source to the current end point for control just past Bertha Park bridge. In 2024 PKC intend to bring another 3km of the river under management to expand control all the way to the Tay confluence.

Tayside Biodiversity Partnership Projects with Young People

Children's Pocket Garden Competition

With mentoring from the Tayside Biodiversity Partnership in 2021, Perth College Nursery and Glenlyon Primary School submitted bids to win the Children's Pocket Garden national competition. Glenlyon Primary's design was selected for the Keep Scotland Beautiful One Planet Picnic Pocket Garden showcase in June and won a Certificate of Achievement. The children designed a garden that supports people and wildlife by providing "a picnic for all" with a pond, bug hotels and fruit and vegetable planting One Planet Pocket Picnic Garden Project | Glenlyon Primary School (glowscotland.org.uk)

Perth College UHI Nursery completed the 'Virtual Nature School' cohort 3 in 2023, a 6-week training programme exploring the lifecycles of a butterfly, bird watching and nest building. The children wrote a song called 'The River Tay' and created a pocket garden using recycled materials on the theme of rivers. The design was selected to be displayed online on the Keep Scotland Beautiful website.

Going the Whole Hog

NRF monies enabled 20 schools in Perth and Kinross to receive hogilo hedgehog homes and footprint survey equipment in 2021/22. Glen Lyon pupils were treated to their first sighting on a trail camera set up in the school grounds. This caused much excitement as it is rare to see hedgehogs that far up the glen.

Tayside BeeWild

Primary schools, care homes and sheltered housing complexes have worked with the TBP to introduce pollinator-friendly plantings, including fruit trees and herbs into the grounds for the benefit of people and nature. The Tree Council has been introducing its Force for Nature and School Orchards projects across Perth and Kinross and there will be future links with the Perth and Kinross Countryside Trust's "A Tree for Each Child" project.

Photo (left): the new sensory garden at Parkdale Care Home, Auchterarder; above – the BeeWild garden at Isla Court Sheltered Housing, Bridgend (both NRF funded) © C A G Lloyd

Empowering Communities to Protect and Enhance Biodiversity

Since August 2021, PKC has been awarded capital funding as the area's share of the Scottish Government's Nature Restoration Fund. Although the award could all be spent on Council land or buildings, in line with the Perth and Kinross Offer, the Council has used a proportion of the funding to

provide support to community-led biodiversity projects. In subsequent years, the same process has followed with the grant being available for community-led biodiversity projects, as well as Council ones.

Year	Financial support received from Nature Scot (£)	Number of community projects funded by PKC NRF	Number of school projects funded by PKC NRF	Number of SUDS/wetland projects funded by PKC NRF	Number of projects on PKC land funded by PKC NRF
2021	166,000	10	5	2	15
2022	189,000	7	2	5	13
2023	353,000	14	1	7	2

The 2022-23 Report can be downloaded from NRF_22-23_Web_Report.pdf (pkc.gov.uk). Going forward, from 2023/24, 50% of the funding must be directed towards projects that contribute towards the development of nature networks across Perth and Kinross.

Biodiversity Villages, Towns and Neighbourhoods Initiative

Tayside Biodiversity Partnerships Biodiversity Villages is an exciting project led primarily by local communities with a focus on practical projects and citizen science surveys. An extensive Biodiversity Villages Toolkit has been prepared to help communities decide which projects to choose. The Council support the project and funding has been earmarked by the UK Shared Prosperity Fund for a Project Officer to help roll out up to 25 projects across Perth and Kinross.

Blairgowrie & Rattray is Scotland's first Biodiversity Town and BBC Countryfile featured this in summer 2022. The Council has assisted by attending the Blair Open Space Group to explain the planning process and how biodiversity is incorporated into decision making. The concept will be shared with other Local Authorities as Dumfries and Galloway, Fife, Highlands and Aberdeenshire are interested in replicating the project. A Consortium will be set up in 2024 with a good practice conference planned to take place in Perth.

Biodiversity Blair bioblitz (left) and checking tree guards in the orchard © BRD

3. Mainstreaming Biodiversity

PKC signed the Edinburgh Declaration in November 2021 and in November 2022 declared a Climate and Biodiversity Emergency demonstrating the Council's ongoing commitment to tacking tackling the twin crises of climate change and biodiversity loss together and mainstreaming biodiversity throughout the organisation's functions.

Staff Roles

The Council has several staff with specific biodiversity responsibilities:

- Tree and Biodiversity Officer to advise on and oversee the enforcement of the biodiversity duty within PKC's operations. This includes promoting the enhancement of developments for biodiversity and ensuring developments reduce the impact on biodiversity through the planning process and advising all Council departments on their legal requirements. The Tree and Biodiversity Officer advises on how to protect and enhance wildlife across Council services including Architects, Property, Housing and Education.
- Tayside Biodiversity Officer to focus on delivering TBP actions within Perth and Kinross
- Tree Enforcement Officer (Development management)
- Climate Change Land Restoration Officer
- Greenspace Policy Officer (trees and woodlands)
- Community Greenspace Climate Change Officer.

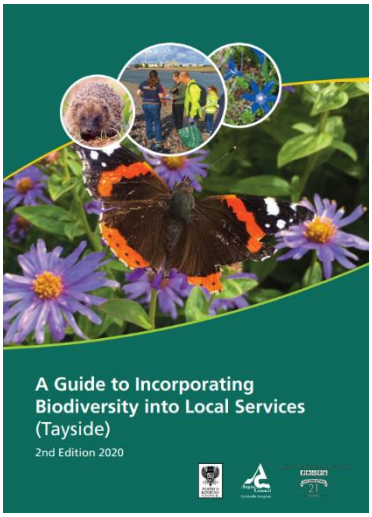
New Staff

Funding linked with the Council's Climate Action Plan created a new full-time post in Community Greenspace to mainstream climate change and biodiversity, achieve actions in the Climate Action Plan and assist in allocating the NRF to projects on PKC owned land. Another full-time Climate Change Land Restoration Officer post was created within the Climate Change and Sustainable Development team, to deliver landscape scale restoration considering woodland creation, nature connectivity and peatland restoration.

Case Study: PKC Biodiversity Ambassadors

The Biodiversity Ambassadors group consists of 80 members from all sections of the council who are interested in nature and meet regularly, including in their lunch hour, to take part in webinars and in person events including opportunities to get outside. This includes tree planting, training sessions on species identification, presentations from external organisations. A key role of Ambassadors is to help mainstream biodiversity and nature-based solutions throughout the organisation by raising awareness through reporting back information to their teams and departments. Everyone is welcome to join, and no experience or knowledge of nature is required. Creating this group has been one of the most successful measures to mainstream biodiversity within PKC.

In February 2023, PKC launched a new Sustainable Development and Climate Change Hub for staff with a Biodiversity section. This helps to outline to staff what biodiversity is, the biodiversity crisis, the statutory duty and key milestones PKC have taken in conserving biodiversity. It also provides information on the actions staff can take to help tackle the biodiversity crisis and provides links to helpful resources. To assist PKC staff and provide inspiration for potential future contributions, a 2nd Edition of the "Incorporating Biodiversity into Local Services" handbook was published by the Tayside Biodiversity Partnership in 2020 and has been publicised to all staff.



During 2023, PKC staff worked in partnership with three other Scottish Councils to create a nation-wide biodiversity e-learning module for Local Authority staff to raise awareness of the statutory biodiversity duty and the importance of biodiversity in decision making.

Inclusion in Structures Project Toolkit

Increased mainstreaming and awareness of the Council's biodiversity duty has led to more queries on ecological survey requirements, protection of bat roosts in bridges and how biodiversity can be enhanced through Council projects. The Structures Team now consider impacts to biodiversity as part of their Structures Project Toolkit and in some areas are providing bird and bat boxes in woodland near where bridge repairs have been undertaken. In addition, otter ledges are being fitted to new bridges to deliver biodiversity enhancement. A large-scale river project in Blairgowrie & Rattray led to creation of two Habitat Regulations Appraisals (HRA) written by PKC and approved by NatureScot in 2020 and 2023. This process was used to create guidance and an HRA checklist for Council staff.

Plans, Policies and Strategies

New Impact and Value Assessment Tool for Sustainable Development

A new Impact and Value Assessment (IVA) tool was launched in 2023 to ensure Council projects, strategies or proposals including all committee reports are screened against a range of statutory and non-statutory criteria, including climate change and biodiversity. The IVA highlights likely positive and/or negative biodiversity, climate change and environmental impacts early in the proposal development stage, allowing time for feedback and/or mitigation to be built into the proposal.

The sustainable land use tool on GIS highlights ecological and biodiversity constraints and is used by Council Officers to inform proposals that require an Environment Impact Assessment and/or Habitat Regulations Appraisal to ensure the Council complies with European environmental legislation and statutory requirements.

Work is ongoing to map the connections between the Council's Quality of Life indicators and the UN Sustainable Development Goals. Goals 14 and 15 have implications for biodiversity and we are in the process of developing further indicators around these goals to monitor the Council's performance towards biodiversity at Perth and Kinross level. By engaging with communities over land use,

communities have greater opportunities to raise awareness, influence the future of their areas, and help create a sustainable environment for future generations.

Open Space Strategy

An Open Space Quality Audit (OSQA) was undertaken to inform the preparation of PKC's first Open Space Strategy which will be drafted in 2024 and identify actions to improve ecological functions and connectivity across sites. The OSQA includes +500 sites within or adjacent to settlement boundaries, including all Designated Open Spaces in PKC's Local Development Plan. The audit has been developed by a cross-team working group, including colleagues from the Local Development Plans, Community Greenspace, and Climate Change and Sustainable Development teams.

Biodiversity is one of the five main categories for the audit and includes assessment of habitats, naturalness, species, and connectivity. Results were mapped, highlighting open spaces with high scores for biodiversity. The scores are supplemented with qualitative data gathered through the Big Place Conversation engagement with local communities in 2023 which provided further insight into which sites are important to communities due to biodiversity and recreational value.

PKC Planning for Nature

PKC developed Planning for Nature primarily as supplementary guidance to inform the planning process but is also used as guidance for all staff to inform design and management of Council projects. It offers advice on the need for ecological surveys undertaken in accordance with best practice and carried out by suitably qualified and experienced persons as well as the need for impact assessments and clear evidence of the mitigation hierarchy. The recommended biodiversity enhancement measures are being integrated into PKC projects as detailed in Section 2. This ensures that the requirement from external and private developers is like requirements for PKC projects and plans. The guide has been advertised through internal channels, email signatures and a training session for all Council staff is planned for 2024.

Internal Guidance Notes

Internal guidance notes for staff have been created on topics including incorporating biodiversity into allotments, creation of green graveyards and native woodland and heathland restoration best practice.

Procurement Changes

PKC Community Greenspace have adopted a sustainable procurement policy by asking for information on what will be done to minimise the environmental impact of proposed activities and services. This is a part of the technical questions that are weighted and contribute to a bidder's tender score.

4. Nature-Based Solutions, Climate Change and Biodiversity

The need to address the cause and effects of climate change and the drive to help meet national targets is a common thread across the topics within the Council's land use planning policy framework. The Climate Change Board, established in 2018, leads on climate change within the Council placing a commitment to tackling the twin crises of climate change and biodiversity loss together.

The Perth and Kinross Climate Commission

The Perth and Kinross Climate Change Commission (PKCCC) was formed May 2022, bringing together people and organisations from the public, private and civic sectors who work collaboratively to help drive, guide, support and monitor climate action. The PKCCC was set up as an independent body responsible for cross-sector collaboration and action on climate change. The Commission plays a vital role in promoting a climate resilient future which is also fair and ensures that there is climate justice.

It is an independent body responsible for:

- Scrutinising the initial roadmap developed by the Council.
- Identifying ideas and good practice that should be promoted.
- Shaping the expansion of and further development of the roadmap through co-production, guidance and feedback.
- Promoting appropriate community engagement on climate change.
- Overseeing delivery of the roadmap and its impact through regular monitoring.
- Championing climate change and delivery of priority actions across Perth and Kinross.
- Using its influence across the public sector, private sector and in our schools and communities to drive the necessary urgent action.
- Consider the connections between the climate crisis and other ongoing pressures – including the biodiversity crises, increasing cost of living, fuel poverty, inequalities, and health.

Council's Climate Change Working Groups

Internally, there are climate 8 working groups with two focused on land use and resilience which aims to combine actions for biodiversity and climate change through nature-based solutions. The COSLA Considering Nature in Decision Making Elected Member briefing on Nature-based Solutions was circulated to members to raise awareness and understanding of the principles and benefits of using nature-based solutions.

Commissioned Research

Perth and Kinross Council commissioned Arup to develop a Climate Risk and Opportunity Assessment (CCROA) for the PKC area. Climate risk assessments identify the likelihood of future climate hazards and their potential impacts for cities and their communities along with the wider impacts on nature and biodiversity. This information is fundamental for informing the prioritisation of climate action, investment in adaptation and supporting community resilience groups. The results of the CCROA will be used to inform and update the Council's existing Climate Action Plan in relation to adaptation and resilience.

The James Hutton Institute were commissioned in 2021 to assist in the understanding of the impact and potential contribution of rural land uses to net zero through a Carbon Sequestration Project. The objectives of the study were to:

i) Summarise carbon equivalent emissions from the Perth and Kinross Council area.
ii) Provide evidence of the carbon stocks in the Perth and Kinross Council area.
iii) Identify the potential for the sequestration of greenhouse gases, and how certain uses of land may impact upon the increase or decrease in carbon stocks; and

iv) Propose approaches for consideration in how communities can contribute to the tackling of climate change (e.g., through social innovation, promotion of local action), and uses of natural capital to inform the achievement of the aims of climate neutrality.

The report highlights the significant potential to reduce emissions and sequestrate carbon across Perth and Kinross through sustainable land management, particularly in respect of woodland expansion, peatland restoration, the use of nature-based solutions, and a transition to agro-ecological farming practices and systems. The results of the study will be used to inform the Spatial Strategy for Local Development Plan 3, and the review of the Council's Forest and Woodland Strategy.

Working At a Regional Scale to Restore Nature

Conducting a review of all PKC actions in the Tayside Local Biodiversity Action Plan highlighted several actions towards which PKC had made little or no progress towards due to insufficient resources. It was clear that many of the actions in the LBAP and Climate Action Plan complement each other and are best tackled on a large, landscape scale. Furthermore, the recent decision to ask all Local Authorities to create Nature Networks Nature Networks explained | NatureScot further strengthens the need to work to collect data and build partnerships to work on a landscape scale within the Perth and Kinross Council area with bodies such as NatureScot, SEPA, the Tay District Salmon Fishery Board, Forth Rivers Trust and local landowners and communities.

PKC's new Climate Change Land Restoration Officer will contribute towards the 19 LBAP PKC Actions including reviewing "cross-boundary" opportunities to join up paths and habitats between local authorities, habitat corridors, invasive non-native plant control and ash dieback. Afforestation and peatland restoration will also be a focus. A challenge to achieving this is that much of the land is out with the control of the Council, but the person will work with landowners and local communities to encourage action. OBJ

New Perthshire Nature Connections Partnership

In 2021, the Perthshire Nature Connections Partnership (PNCP) was created as a long-term, nature-based vision for Perth and Kinross that aims to create a connection between the Cairngorms and Loch Lomond and the Trossachs National Parks. As an integrated landscape-scale ecological restoration project, PNCP provides connections to create and re-establish a sustainable and resilient landscape in Perthshire that provides environmental, health and wellbeing, and socio-economic benefits to local communities, landowners and land managers. The Conservation Officer is part-funded by PKC and hosted by the Perth and Kinross Countryside Trust.

Case Study: Investment Readiness Pioneers - Almond Headwaters

In May 2023, the Perthshire Nature Connections Partnership received £124K from the Esmée Fairbairn Foundation for the Upper Tay Catchment Communities - Almond Headwaters project. It is one of two in Scotland to receive a 'Riverwoods - Investment Readiness Pioneers' award.

Riverwoods - Investment Readiness Pioneers awards grants to develop corporate and private funding for nature and climate recovery, and to increase community benefits from nature restoration projects.

This project seeks to create an investable project that implements multiple interventions aimed at restoring the quality of the upper Almond's riparian habitat.

Award Winning Kinross Raingardens Trail

Funded by PKC Nature Restoration Fund, the Kinross Raingardens Project won the prestigious Construction Industry Research and Information Associations Susdrain 'UK Community SUDS' Award in 2022. The Raingardens Trail is a successful collaboration with Scotia Seeds, the Kinross-shire Civic Trust, PKC, and the Tayside Biodiversity Partnership. The Park and Ride part of the project is a demonstration site that can be used to inform further raingardens in future developments. In effect the trail is a series of smaller-scale projects, starting at the park and Ride and going along to the industrial estate. Portmoak Primary School, Loch Leven's Larder, Kirkgate Park, and the Loch Leven Boathouse are all part of the wider initiative. Where biodiversity is concerned, the trail provides a series of permanent pollinator steppingstones and supports habitat restoration. Other sites within Kinross are being considered, including amphibian scrapes and a raingarden hedge.



Perth Holds SuDSNET Conference

Perth hosted the SuDSNET (the Sustainable Urban Drainage Systems Network) conference in April 2023. The Scottish Universities Green Infrastructure Research Group first met in 2015 and has recently been holding joint meetings with the Abertay University-based SuDSNET was set up in 2004 with an international remit to bring together researchers, practitioners, and developers. The Valuing the Benefits of Blue-Green Infrastructure conference was preceded by site visits exploring the award-winning Kinross-shire Raingardens Project.

Natural Flood Management and Catchment Management

The Council is a partner with NatureScot, SEPA, the Forth Rivers Trust and others to explore setting up a Landscape Enterprise Network in the Loch Leven catchment. Following a scoping report which built on a Natural Flood Management study for the Kinross South flood scheme, further funding has been secured to develop investible projects over the coming year. Practical work in the catchment for natural solutions to control erosion and reduce nutrient input into the Loch Leven National Nature Reserve has been funded by the Council.

Trialling Nature Based Solutions

Through the Nature Restoration Fund, the PKC Greenspace team has undertaken projects to restore native habitats and enhance our local ecosystems. One of the projects involved tree planting at Jeanfield in Perth where using nature-based solutions will help mitigate the ever-increasing flooding

issues. These trees will help to increase water absorption, catch rainfall, and slow down surface water run-off. Elsewhere, a nature-based solution for bank erosion was attempted by using a Flex MSE vegetated wall solution at Buckie Braes. This was dislodged during substantial flooding and other natural solutions for bank erosion are being considered.

Main climate change related challenges for biodiversity over the next three years in a PKC Context

The above-mentioned Perth and Kinross Climate Change Risk and Opportunity Assessment looked at the already experienced changes and projected climatic variability at timesteps between 2030 and 2100. There were several occurring and short-term changes identified, which are linked with the following key potential impacts:

- Lack of connected habitats to allow species to move north or higher up the hill to follow their preferred 'climate space'. Some species may decline, such as those that thrive on mountain tops such as mountain hare that may not be able to move within Scotland. For many species the loss of suitable habitat may restrict their spread. For example, the Arctic charr lives only in cold lochs that are now being affected by rising water temperatures.

- Continued habitat loss and fragmented habitats on isolated islands located within intensive agricultural and urban areas.

- More extreme weather events such as Storm Arwen causing habitat changes and woodland cover losses. Changes in seasonal rainfall and more extreme weather events will affect rivers, wetlands, hill slopes, and coasts. Rivers may flash flood more frequently in winter, which can wash out spawning beds for salmon and cause erosion and slope instability.

- Snow cover declines cause an increased mismatch in seasonal camouflage for mountain hares, leaving them more vulnerable to predators.

- Warmer temperatures allowing pests and diseases, including invasive non-native species, to establish or spread further. These are difficult to predict, but new plant diseases are already threatening native trees. Ecosystems that are under stress from climate change and other factors, such as pollution, may be more vulnerable to pests and diseases. Ash dieback is causing significant tree loss in PKC area currently.

- Seasonal changes to precipitation already occurring – decreased summer precipitation with increased draught risk will compound the impact on habitats and species.

In addition to the above-mentioned impacts, more widely, carbon reduction often takes a centre stage of climate action, with the climate impacts on and resilience of biodiversity receiving less focus. Additionally, there are some potential conflicts between carbon reduction maximation and biodiversity benefits that will need to be considered (e.g., Sitka Spruce has very high sequestration rates, but low biodiversity value). With the joint declaration of the climate and biodiversity emergencies in November 2022, PKC has stated its desire to address these crises jointly.

5. Public Engagement and Workforce Development

Public Engagement

By engaging with communities over land use, such as the Local Development Plan and greenspace management, communities have greater opportunities to raise awareness, influence the future of their areas and help create a sustainable environment for future generations.

The Big Place Conversation

The Big Place Conversation was the main engagement activity for the next Local Development Plan (LDP3). This utilised the Place Standard Tool and engaged with over 1500 people and organisations. This includes a question specifically on access to nature and participants, including school pupils, older people and community groups provided their views on how their place could be better for nature and areas that should be protected. The information will help in the design of nature networks and identifying areas for protection in LDP3.

New PKC Climate Action Website

PKC launched a new website dedicated to taking climate action in 2022 following requests for a central source of trusted and knowledgeable climate action advice for residents, businesses, and visitors. The website highlights the PKC Climate Strategy and Action Plan, guidance on how to take action at home and at work, grants that relate to climate initiatives for households, businesses and community groups, and climate related events. Included on the website is a Community Projects & Groups map which captures examples of climate action across Perth and Kinross. It also provides information on community climate action projects and groups, including a variety of Carbon Stories highlighting good practice. The Facebook page is used to regularly update on biodiversity projects, surveys, local events, and news https://www.pkclimateaction.co.uk/

Nature of Cities Festival International Conference

The Perth City Leadership Forum shared a vision to make Perth the most sustainable small city in Europe and for each year of this decade it will focus on one theme. In 2022 the focus was nature and biodiversity. PKC was a part of a workshop at the online 3-day event highlighting good practice in new

housing developments requiring biodiversity enhancement measures as standard including swift bricks, hedgehog highways and wildlife kerbs.

Perth Winter Festival

PKC Climate Action engaged with people enjoying the Christmas light switch-on in 2022 with a colourful stall. Over 60 people made a pledge for the environment to do their part to help tackle the climate emergency and improve biodiversity. A range of sustainable tombola items were won, including spring bulbs, pollinator friendly plants, bee homes and bird boxes.

Climate Action Earth Day Market 2023

On 22nd April 2023, community groups, businesses and environmental organisations came together to host an Earth Day Market. The market featured products from local suppliers and stalls showcasing the valuable work being undertaking across Perth and Kinross to help the environment. The Perth and Kinross Countryside Trust delivered a workshop for young people to learn about tree planting.

Youth Climate Conference

In November 2022, PKC hosted their first Youth Climate Conference as a pre-summit to COP27, the 27th annual climate change conference of the United Nations. Through inspiring talks, interactive workshops, and action planning, around 100 secondary school pupils gained a greater understanding of the climate and nature crises, and how to take action for climate and nature.

Among the speakers and workshops were SCOTLAND: The Big Picture Nextgen which focused on discussing threats to nature, the actions pupils could take to help rewild, and making a pledge for the wild. The conference provided opportunities for pupils to learn, collaborate, innovate and take action locally on climate change and biodiversity. With the success of the first conference, this will now be hosted annually with a range of different speakers and workshop facilitators involved.

A group of colleagues from Biodiversity and Trees in PKC welcomed a group of students from Scotland's Rural College (SRUC) who were studying Multipurpose Woodland Management. We toured Kinnoull Hill SSSI in Perth covering the new management plans, proposed actions for biodiversity and visitor management. The Tayside Biodiversity Partnership works with primary schools, care homes and sheltered housing complexes, see section 3.

Supporting Volunteers

Community Greenspace supports a range of community groups who operate in parks, cemeteries and on footpath networks through Perth and Kinross. Community Greenspace support over 30 path groups across Perth and Kinross who undertake path maintenance by clearing footpaths, thinning trees, removing litter and planting wildflower meadows. PKC Rangers support volunteers to remove INNS in some areas. Community Greenspace offers support to over 20 community gardens, allotments, and orchards. The Ranger Service has devoted 182 annual hours in 2022 and 462 so far in 2023 with biodiversity and environmental groups.

The Rangers run woodland activity sessions for people with early stages of dementia tackling social isolation and providing health and wellbeing benefits to participants, carers, and family members. Kinnoull Hill in Perth provides a place for walks, views from the top and The Shed to shelter in on rainy days and enjoy a social lunch at the end of the session. Participants enjoy meeting new people, enjoying nature as well as completing the John Muir Award.

Case Study: Friends of Cemeteries Groups

Since 2021, 15 Friends of Cemeteries Groups have been established with local volunteers dedicated to improving their local graveyard. Some groups started primarily to maintain grass cutting and neatening path edges but now many are providing habitats for nature with additional No Mow and Managed for Wildlife grassland management areas, four double rows planted with wildflowers and bulb planting in 2023. Friends of Jeanfield and Wellshill carried out wildflower surveys as part of the PKC biodiversity monitoring, and Kinnoull Old Burial Ground Group arranged a lichen expert to visit.

Through the Tayside Biodiversity Partnership with the Amphibian & Reptile Conservation Trust and TayARG (Tayside Amphibian & Reptile Group) an Amphibians in Graveyards Citizen Science Survey is underway. Advice to the Green Shoots Aberdalgie Outreach Project has seen them become a Friends of Cemeteries group and a fledgling Green Graveyard project.

Improving Access to Nature for All

The Greenspace Team maintains and repairs public facilities within greenspaces and the wider core path network to ensure they remain safe and attractive. Greenspace have signposted most of the 2048km core path network in Perth and Kinross and support numerous path groups to help maintain core paths, rights of ways and other countryside paths. Greenspace officers work closely with landowners, access takers and the Local Access Forum to ensure the right of responsible access is unobstructed and undeterred.

The Policy Team are actively working on improving a long-distance route between Crieff and Comrie. Draft management plans for Council owned countryside sites have been created in consultation with local stakeholders since 2020 for Den of Alyth, Rumbling Bridge and Black Spout Wood. Support is given also to the Perth and Kinross Countryside Trust on various path improvement projects.

Workforce Development

Biodiversity Ambassadors

Since our last report in December 2020, PKC Biodiversity Ambassador membership has grown from 60 to 80. The group work to help mainstream biodiversity and nature-based solutions through PKC for the benefit of people and nature. A lively Teams chat, regular training sessions and a programme of events are created and it's a chance for colleagues from different areas of the Council to work together for the benefit of biodiversity. Everyone is welcome to join, and it is a great chance for PKC staff to gain new skills, meet new people, have fun, and help nature recover. To continue spreading the word and to recruit new members, an information stall is held at Corporate Induction events for new PKC staff. Online videos and articles in internal Council correspondence such as the Health and Wellbeing newsletter has also increased awareness of the group.

Biodiversity and Trees Training Sessions and PKC Biodiversity Ambassador Events

Year	No of events total	No of Externally Led events	Total no. of Staff attending events	Topic examples
2021	5	4	90	Grassland management series: Don't Mow, Let it Grow by the Causeway Coast & Glens Borough Council, On the Verge Stirling, Edinburgh Living Landscapes and Dr Phil Sterling from Butterfly Conservation
2022	13	4	229	Tree Reports and Issues for Planners Protecting trees from Beaver damage Rejuvenating Business Parks Butterfly and Wildflower ID session Training on SUDS and amphibians
2023	10	8	140	Outcomes of COP15 negotiations Woodland Trust Session for Planners Riverwoods webinar Intro to Pollinators and FIT Count by Buglife Bat Ecology Training SSEN Biodiversity Net Gain webinar Local Nature Conservation Sites introduction and site visit

Practical Activities

PKC staff are encouraged to take part in a range of practical activities to learn more about nature, make a positive impact and to raise awareness of the wellbeing benefits of being active outdoors in nature. Articles in the PKC Health and Wellbeing Newsletter helps to promote opportunities. Several events in 2023 were accessible to all and additionally advertised to the diSABILITY Staff Network.

- PKC Biodiversity Ambassadors set up practical volunteering opportunities to record wildflowers and invertebrates for the PKC grassland management biodiversity monitoring using a newly created app.
- PKC Biodiversity Ambassadors guided walks and litter picking in local parks and greenspaces.
- A site visit to the river Almond to learn more about the PKC partnership project controlling invasive non-native species.
- Site visits to Denmarkfield to learn about rewilding and grassland management.
- Walk and talk along the Perth Lade to discuss potential development, impact to biodiversity and local communities.
- Pond clearing to benefit amphibians at the North Inch in Perth in partnership with Tay ARG (Amphibians and Reptiles Group).

Get Sett Sco

PKC Biodiversity Ambassadors joined Morag from Scottish Badgers for training to find signs of badgers. Volunteers signed up to help with the 3-year project entitled 'Get Sett Scotland' to re-run the Scottish Badger Distribution Survey undertaken by the charity back in 2006-2009. The aim of this new citizen science project is to estimate change in the density and distribution of badger main setts across a range of habitats in Scotland. Training was given on how to spot field signs of badgers including their hair (which is distinguishable by how hard it is to break), latrines, badger paths and setts. Any evidence of human disturbance will also be noted. All volunteers were given a 1km square to survey in winter/spring 2023 to feedback results to Scottish Badgers

The Impacts of Rubbish on Wildlife

Inspired by the many community groups and individuals volunteering to pick up litter in Perth and Kinross and to coincide with the National Spring Clean, PKC's Climate Change Team organised a series of litter picks for staff in April 2023.

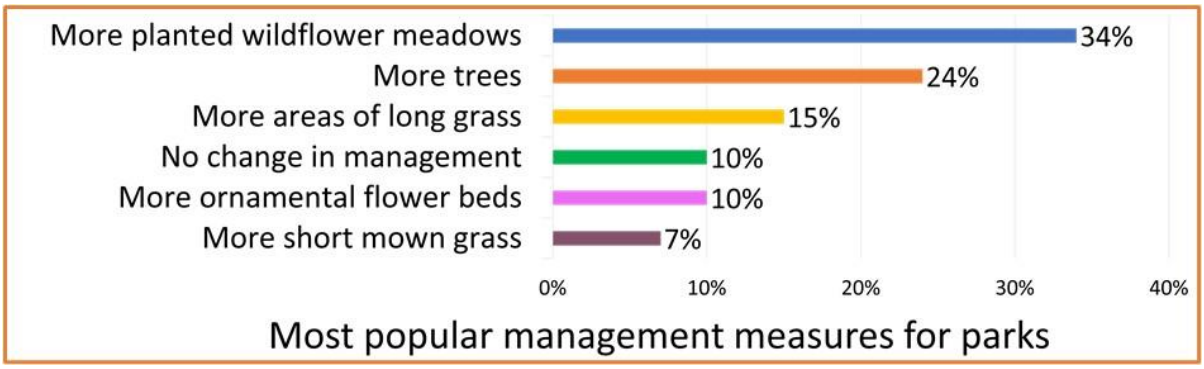
Litter picking was undertaken on land and on the River Tay via canoes. 65 bags of litter were collected in just four hours. The event highlighted the financial costs of clearing up litter to PKC (over £2 million annually) and the negative impacts to health, wellbeing, and wildlife.

6. Research and Monitoring

Supporting Students

During 2022 and early 2023, the TBP assisted an MSc student studying Environmental Entrepreneurship at the University of Strathclyde with a community SuDS survey.

During 2021 PKC assisted an MSc student studying Countryside Management at SRUC to investigate attitudes towards increasing areas of long grass and wildflower meadows in parks and greenspaces within Perth and Kinross. Results indicated awareness of biodiversity was high, as 94% had heard the term before the questionnaire. Respondents were highly supportive of managing parks to improve biodiversity and 91% were more in favour of wildflower meadows than long grass areas (73%).



Respondents were asked about benefits and concerns regarding wildflower meadows and long grass areas. The majority agreed that both measures would increase biodiversity and be more interesting to look at. Additional benefits identified included educational opportunities, reduction in chemical use, time and money spent cutting amenity grass, and enhanced health and wellbeing benefits. Respondents indicated concerns related to dog fouling loss of space for sport and activities, increased risk of ticks and a lack of long-term management of areas.

Although respondents were supportive of more wildflower meadows and long grass areas, it was conditional on establishment of 'Park Rules' (see box).

"Education is essential to involve public, to build pride in the wild look, ensuring respect maintained so litter and dog fouling don't become the norm." - *Respondent*

PARK RULES

1. More information on benefits
2. Community involvement
3. More trees and monitoring of biodiversity
4. Dog fouling enforcement
5. More litter bins
6. A long term plan and commitment to maintenance

The findings of this study suggested there is an opportunity to improve parks for nature, improve parks for people and enhance the connection between the two to realise a "win-win". However, support is conditional on long term management plans, community consultation and engagement prior to making any changes.

Research

In 2023, PKC commissioned Arup to develop a Climate Risk and Opportunity Assessment to identify the likelihood of future climate hazards and their potential impacts for PKC communities. in 2021, the Council commissioned a Carbon Sequestration Project with the James Hutton Institute (JHI).

Monitoring PKC Actions for Biodiversity

Across many Council functions, monitoring activities are hampered by the lack of resources and the inability to use funding such as the NRF for ongoing monitoring. Activities undertaken within the three SSSIs in PKC ownership and larger greenspace sites will be monitored to ensure the desired outcomes

are being met. Greenspace Ranger staff and volunteers will observe other management programmes and report back.

In 2023, residents reported a lack of wildlife kerbs in a new development in Blairgowrie located close to a SUDS pond used by amphibians and reptiles. An enforcement action was raised with the developers and the wildlife kerbs provided in the required areas within weeks.

Monitoring Grassland Management

Biodiversity monitoring was carried out from April to September 2022 by volunteers and PKC Biodiversity Ambassadors. Areas of uncut grass were compared to nearby short mown amenity grass and the number of wildflowers, pollinators and birds were noted and photos submitted. The aim was to investigate the biodiversity value of sites where mowing will be altered and collect information on the wildflowers that are naturally present in the seed bank but have been suppressed by regular amenity mowing. This created a baseline to provide comparison once future management regimes have been implemented.

A total of 133 surveys were received from 44 surveyors. 135 were completed via the newly created app to collect data online and the rest were emailed forms. Results indicated that uncut areas contained more wildflowers, more wildflowers in flower, and a higher number of different species compared to amenity cut grass. A total of 64 wildflower species were recorded that would not have flowered had these areas continued to be close mown. Bees, butterflies and other insects were more abundant in uncut grass areas than cut, see table below. The Results and Discussion Paper contains more detailed information. Results are being used to inform future plans for grassland management in parks and greenspaces in PKC.

Biodiversity Measure	Uncut Areas	Cut Areas as Normal
Wildflowers present	95%	78%
Wildflowers in flower present	88%	32%
Number of different looking wildflower species (average)	6.2	2.3
Butterflies present	30%	6%
Number of different looking butterfly species	7	5
Bees present	46%	11%
Other insects present	65%	15%

Mini Bio-Blitz

Perth and Kinross Biodiversity Village, Town & Neighbourhood communities ran an online mini bioblitz in their patch in July and August 2023 looking for 10 species: hedgehog, slow worm, house sparrow, song thrush, brown hare, red admiral butterfly, common carder bumblebee, harebell, ox-eye daisy and ragged robin. All sightings were recorded on iNaturalist and will help inform future management decisions.

Contributing to the National Biodiversity Network Gateway

Tayside does not have a Local Records Centre which is a significant limitation, however PKC is a part of the Better Biodiversity Project Group as part of the National Biodiversity Network Trust's Better Biodiversity Data Project. PKC Biodiversity Ambassadors and all staff are encouraged to report all sightings to the NBN Atlas online.

As part of the National Biodiversity Network, the staff setting up the Scottish Building Better Data project (funded by the Scottish Government) have met Perth & Kinross Council, the TBP, Angus Dundee City Councils to discuss the creation of Biological Recording Data Hubs. This is long overdue in Tayside and will greatly help the region's planners and developers.

Case Study: New Young Wildlife Recorders' Group

Recognising that there is an urgent need to welcome and train new wildlife recorders owing to the aging demographic of species and habitats specialists, the TBP has started to set up a new Young Wildlife Recorders' Group. Liaising with the British Trust for Ornithology (BTO) and Butterfly Conservation, a funding application prepared jointly with the Perth & Kinross Countryside Trust has been submitted to run the first pilot. From a very well-attended online meeting in January 2023, many other local and national organisations and groups have confirmed they are keen to help with a much larger-scale project when the time is right.

This pilot phase of the project will be very much a mentoring one with 10 young recorders applying to join Butterfly Conservation and BTO mentors to learn recording and monitoring skills for butterflies, moths and birds.

The larger project in the future will expand this idea to all ages (12-30) where 1:1 mentoring is a key part of the project, but also more general citizen science projects rolled out to larger groups, including schools and youth organisations. Online webinars, special events led by specific organisations and a Young Wildlife Recorders' Conference will be held.
In tandem with the Young Wildlife Recorders' Group, the 'Every Action Counts Citizen Science' Initiative will expand the work of the Tayside Recorders' Forum by setting up a similar project to the Forth Nature Counts project. This will expand the programme of wildlife survey, identification skills workshops and events linked to the Biodiversity Villages, Towns & Neighbourhoods Initiative.

The PKC Biodiversity Ambassadors group encourages all staff to take part in citizen science projects and those that contribute towards the National Biodiversity Network Gateway such as BeeWalk, Saving Scotland's Red Squirrels, Big Butterfly Count, Big Garden Bird Watch, Tayside Swifts and ZoomIn2 time lapse photographic project. An online editable map to record biodiversity within Perth and Kinross parks and open spaces has been developed by the Council and will be expanded in 2023.

7. Biodiversity Highlights and Challenges

2021-2023 Highlights

As described in the preceding sections, there has been an abundance of positive action taken both by the Council directly and by our communities with support from the Council that has led to positive progress in addressing the Biodiversity Crises across Perth and Kinross. From this, the top 10 highlights have been identified.

1. Receiving over £700k of Scottish Government Nature Restoration Funding from 2021 that has enabled more than 30 projects to be successfully delivered by PKC and community groups, with a further 18 on-going in 2023/24.
2. Developing a new approach to grassland management across Greenspace in Perth and Kinross. The 2022 biodiversity monitoring of the new sites by PKC Biodiversity Ambassadors and volunteers showed positive biodiversity enhancements and the success of a newly created citizen science project.
3. Developing and adopting the Planning for Nature Supplementary Guidance to set clear expectations and requirements for planning applications regarding information on biodiversity. By clarifying expectations, it is expected to both enhance applicant experience by reducing the need to back and forth requesting further information as well as promoting best practice. Implementation of the Guidance has been supported by workshops for Development Management Officers and was highlighted at the 2023 Housebuilders Forum to raise awareness with developers.
4. Mainstreaming of biodiversity throughout the organisation – an example of this is the new Protecting Swifts in Conservation Buildings working group set up in 2023, where PKC is working in partnership with the Perth & Kinross Heritage Trust in considering Swifts in the heritage funded conservation projects.
5. Building a successful partnership with the Scottish Invasive Species Initiative and local landowners to deliver a catchment scale approach to INNS control project on the River Almond. The developed community involvement, with 35 community volunteers taking part.
6. Creating the new Climate Action website and social media channels to raise awareness of actions to tackle the twin crises of climate change and nature loss, with Nature being the key theme of the campaign in Spring & Summer 2023.
7. Developing our Biodiversity Towns and Villages programme, with Blairgowrie & Rattray named Scotland's first Biodiversity Town.
8. Supporting partnership to tackle landscape scale challenges with the Perthshire Nature Connections Partnership and Conservation Officer post.
9. Increasing our biodiversity workforce with the establishment of the Climate Change Officer into Community Greenspace and creation of a new Climate Change Land Restoration Officer to further landscape scale restoration and further upskilling our existing workforce.
10. Growing the membership of PKC Biodiversity Ambassadors. This has enabled the sharing of ideas, good practice and creating new collaborations and partnerships has resulted in on the ground actions and changes to Council policies and procedures.

Potential challenges for 2024 to 2026

Several potential challenges to biodiversity delivery have been identified for the upcoming three-year window between 2024 to 2026. A summary of the main challenges include:

1. While the Council has increased its biodiversity resources over the last three years, the increased need to incorporate greater levels of biodiversity enhancement into planning decisions and operational enhancements, still leaves limited staff resource to:
    a. implement NPF4 requirements and creation of nature networks across Perth and Kinross;
    b. provide long term management plans and tree planting plans for PKC owned and maintained land;
    c. undertake long-term biodiversity monitoring of projects.
2. The annual nature of NRF funding and theme confirmation, results in limited implementation windows and impacts on the availability of contractors to carry out the works.
3. Tayside does not have a local biodiversity records centre which is a challenge to the Council as biodiversity data is held in several different locations rather than one centralised database. A records centre would also aid development management and land use decisions as well as creation of nature networks.
4. While the Council has its LBAP, there is an identified gap around the development of long-term Council specific biodiversity and greenspace strategies and policies to improve co-ordinate delivery, prioritise, and secure necessary resources for biodiversity enhancements on Council owned land to deliver multiple benefits.
5. Effective Invasive non-native species (INNS) control requires a catchment-wide long-term plan. There is not currently one for the River Tay catchment, which is a challenge for effective management.

8. Conclusion

The Council recognises it must play a key role in helping to deliver a more sustainable and biodiversity rich area, as an employer with responsibility for staff and buildings, as a provider of local services, and as a community leader working in partnership with a range of stakeholders. Furthering the protection and enhancement of biodiversity is a continual work in progress with links across many Council areas, and this report highlights the diverse range of activities undertaken by various teams as part of their regular work programmes.

There are many exciting opportunities and projects to explore such as the Tayside Biodiversity Partnership's Biodiversity Villages project, designating a suite of Local Nature Conservation Sites, reviewing management of our greenspaces and developing long term strategies for biodiversity, greenspaces and invasive non-native species control.

The Council recognises there is still a lot to achieve within a minimal resource environment and we plan to map the resources required working collaboratively with our communities and other partners to deliver biodiversity protection and enhancement in the most efficient manner for the next reporting period in three years.

The Council has made significant progress to raise awareness of biodiversity and collaborate with the local community, neighbouring local authorities, and stakeholders to ensure that biodiversity is at the forefront of our work and will be enjoyed for generations to come. We are grateful to the financial support received from Scottish Government and to the vast contributions made by local communities and volunteers across Perth and Kinross.

Please follow these links for further information on Enhancing Biodiversity in Perth and Kinross and Biodiversity Projects in Perth and Kinross.

PERTH AND KINROSS COUNCIL

Climate Change And Sustainability Committee

27 November 2023

PUBLIC BODIES CLIMATE CHANGE DUTIES REPORTING 2023 – CARBON EMISSIONS

Report by Executive Director (Communities)
(Report No. 23/329)

1. PURPOSE

1.1 This report provides an overview of the Council's annual Public Bodies Climate Change Duties Reporting (PPCCDR) submission. It includes an update on the Council's carbon footprint and emissions trends for the reporting year 2022/23 along with wider actions the Council is taking to address the Climate Emergency. Based on this evidence, the report to the Scottish Government has been developed for consideration.

2. RECOMMENDATIONS

2.1 It is recommended that the Committee:

i. comments on the contents of the report, along with the updated report to the Scottish Government (Appendix A)
ii. notes the progress in developing benchmarking information and the need to use it to provide an evidence-based platform to inform decisions and monitor performance
iii requests officers to circulate a briefing note on high carbon within PKC's purchased goods and services once the outputs from consultants are finalised and include an action in the Climate Change Action Plan to develop a plan for addressing these areas.

3. STRUCTURE OF REPORT

3.1 This report is structured over the following sections:

- Section 4: Background/Main Issues
- Section 5: Conclusion
- Appendix A: Public Bodies Climate Change Duties Report

4. BACKGROUND / MAIN ISSUES

4.1 Perth & Kinross Council, as a listed public body in Schedule 1 of the Climate Change (Duties of Public Bodies; Reporting Requirements) (Scotland) Order 2015 as amended by the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020, is required to report annually via the Sustainable Scotland Network Report to the Scottish Government. This is required in order for Perth & Kinross Council to comply with its climate change duties as established under Section 44 of the Climate Change (Scotland) Act 2009 and as stated in Schedule 2 of the 2015 Order.

4.2 In addition to the above, the 2020 Amendment Order set out additional reporting requirements from 2021/22 in response to the global climate emergency and Scotland's net zero targets, as well as the interim targets as set out in the legislation. The compliance reports must now address additional sections that include, but are not limited to, the Council's target date for achieving zero direct emissions, how the Council will align its spending plans and use of resources to deliver its emissions reduction targets, and how the Council will publish its progress to achieving its emissions reductions targets.

4.3 As part of the approval of last year's report (Report No. 22/282 refers) in November 2022, the Committee requested officers to develop a robust Scope 3 reporting methodology for the Council by November 2023. However, it is important to note that baselines for Scope 3 calculations vary with more categories being added. As such, it may not always be possible to recalculate baselines retrospectively. This could have an effect on trends and overall calculations. Under the Greenhouse Gas Protocol guidelines, there are 15 identified Scope 3 emissions reporting categories. Of those, the following seven were deemed relevant to PKC operations:

Table 1 Scope 3 emissions categories assessed as relevant to Perth & Kinross Council

Scope 3 emissions category	Comment
1. Purchased goods and services	New - detailed in Paragraph 4.9-4.11, but not included in the PBCCDR
2. Capital goods	New - detailed in Paragraph 4.9-4.11, but not included in the PBCCDR
3. Fuel and energy related activities	Included - No change to methodology from previous years
4.Waste generated in operations	Included - No change to methodology from previous years
6. Business travel	Included - No change to methodology from previous years
7. Employee commuting & homeworking	Employee commuting – new addition this year Homeworking emissions – Changed methodology in the PBCCDR and improved data Results of the staff travel and homeworking survey were used to inform these categories
15. Investments	Not included in the reporting year – Primarily associated with pension investments, which requires joint progression with other Tayside Local Authorities.

4.4 Since the Council's first report in the pilot year 2014/15, the Council's carbon footprint has followed a decreasing trend until 2018/19, which has then been followed by both increases and decreases between 2019 and this reporting year. This is illustrated in Table 2. The baseline year has been set as 2015/16 as per the reporting guidance, as in 2014/15 only Scope 1 & 2 emissions were calculated. For greater clarity, the Scope 1 data has been sub-divided down to energy and transport. Scope 3 data has also been sub-divided into emissions reported to date, and employee commuting emissions that are a new addition to the Council's footprint this year. The trend over time is shown visually in Figure 1 and by sector for 2022/23 in Figure 2.

Table 2 : Perth & Kinross Council's Carbon Footprint (tCO2e)

Reporting Year	**Scope 1 *Total***	Scope 1 *Energy*	Scope 1 *Transport*	Scope 2	Scope 3 Total	Scope 3 *sources reported to date*	Scope 3 *Employee Commuting*	**Total Footprint**
2015/16 (baseline)	9,033	9,033	Not reported	14,676	14,995	14,995	n/a	38,705
2016/17	8,339	8,339	Not reported	12,661	18,859	18,859	n/a	39,859
2017/18	8,593	8,593	Not reported	9,967	19,153	19,153	n/a	37,713
2018/19	10,180	7,573	2,607	5,314	20,488	20,488	n/a	35,982
2019/20	10,722	8,038	2,684	6,823	19,560	19,560	n/a	37,105
2020/21	10,163	7,830	2,333	5,106	19,337	19,337	n/a	34,605
2021/22	10,670	8,081	2,589	5,217	20,122	20,122	n/a	36,008
2022/23	9,719	7,028	2,691	4,730	25,348	19,979	5,369	39,798

4.5 The scopes mentioned in the table above refer to:

i. Scope 1 emissions are direct emissions from sources owned or controlled by the Council - e.g. emissions from fleet or oil-fired boilers.
ii. Scope 2 emissions are from the generation of purchased electricity.
iii. Scope 3 emissions are all other indirect emissions which relate to the Council's activities, including waste, homeworking, staff travel to/from work or emissions associated with electricity which is lost in the Transmission and Distribution system used for delivering purchased electricity.

Figure 1 Perth & Kinross Council's Carbon Footprint (tCO2e)

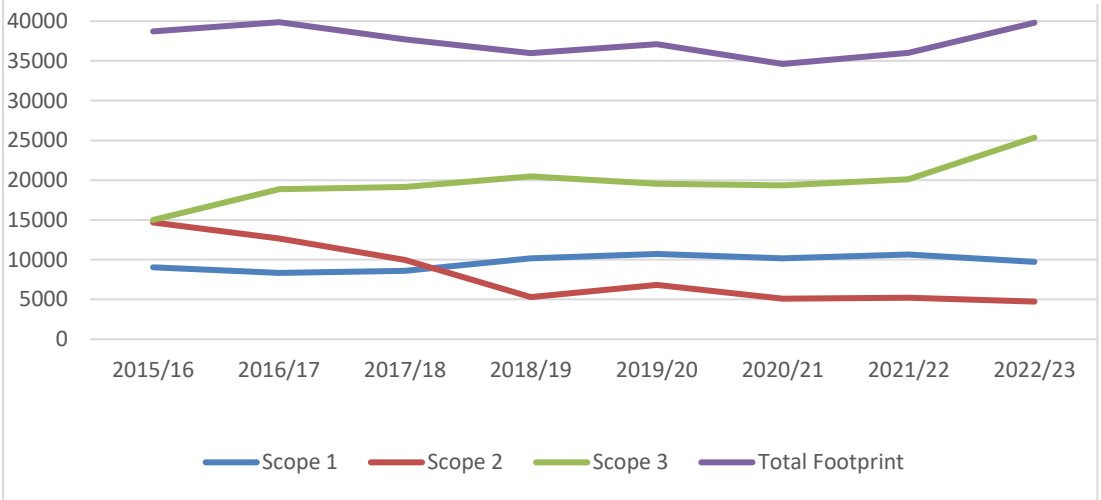
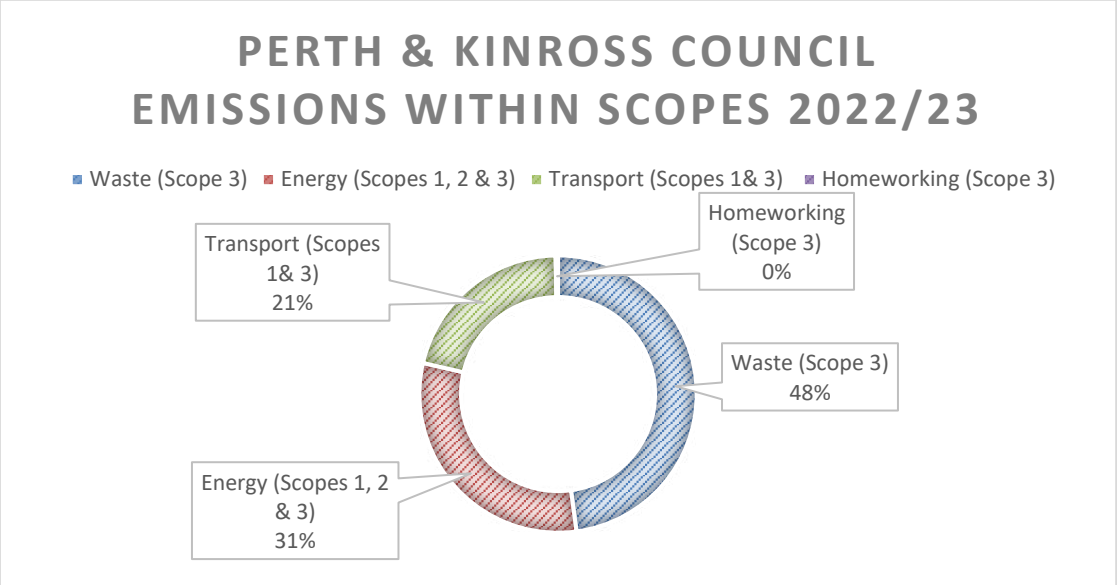


Figure 2 Perth & Kinross Council's Carbon Footprint divided by Sector



4.6 In 2022/23, Scope 1 emissions decreased, predominantly due to a decrease in emissions arising from consumption of wood chips (biomass energy). Fleet transport emissions increased by 4% in 2022/23 compared to 2021/22. Positively, there is a decreasing trend in Scope 2 (electricity) emissions when comparing 2022/23 emissions to 2021/22, with emissions resulting from electricity continuing their downwards trajectory.

4.7 A staff travel and homeworking survey was undertaken (between 12 July 2023 – 25 September 2023) to provide an estimate of carbon emissions for Council employees when travelling to and from work over the period of a year – with 1721 respondents (approximately 30% overall staff). Respondents were asked to list their mode of transport when travelling to and from work, the distance they travel and details in relation to their mode of transport e.g. engine type and size. The responses were then analysed and scaled up to reflect the full workforce. As a result, it is estimated that Perth & Kinross Council staff emit 5,369 tonnes CO_2e annually on their commutes to and from work. On average, 60% of trips to and from work weekly are made by car, while less than 10% are made by walking or cycling, and less than 5% by bus. Additionally, less than 30% of the trips made by car are ever made by carpooling. It is also worth mentioning that approximately 70% of trips made by car are made within a radius of up to 5 miles from the respondent's work location. These results would have to be validated by further surveys to reduce errors and identify trends.

4.8 There was a small year-on-year decrease to the previously reported Scope 3 emissions categories – every sub-category had a very small year-on-year decrease. The inclusion of the staff travel results provided more detailed data in relation to emissions arising from homeworking. Together, with a change in methodology for the PBCCDR has resulted in a decrease in relation to 2021/22 (from 20,122 to 19,979 tCO_2e). However, inclusion of the staff travel emissions resulted in an increase in overall Scope 3 emissions.

4.9 In addition to the above, and as requested by the Committee in terms of improving the Scope 3 methodology, a consultant has analysed the Council's procurement and finance spend data. This is to gain a better understanding of Scope 3 emissions arising from purchased goods and services and capital expenditure.

4.10 The consultant carried out an in-depth measurement of the data provided for the past three financial years (20/21, 21/22 and 22/23). The data was analysed to provide an assessment of the Council's emissions broken down by suppliers, products, categories, and Council's services. The consultant is currently carrying out a detailed check of the top products that will facilitate the delivery of savings, as part of the Carbon Reduction Plan. The aim of this analysis is to achieve cash and carbon savings through a more efficient use of resources along with a long-term plan to engage with suppliers in becoming more resource efficient and reducing the cost to the Council.

4.11 The results of this analysis have not been included in this reporting year as the analysis has not been finalised. A briefing note for elected members will be circulated in due course to outline findings and actions.

4.12 The 'investments' category would not be included in the above analysis. However, it is the intention to start collating information on this category, particularly pension investments.

4.13 Overall, although there is a decreasing trend in emissions when compared to the emissions sources reported in 2021/22, this would need to be significantly accelerated to reach the objectives set out in the Climate Change Strategy and Action Plan (Report No. 21/245 refers). Furthermore, although emissions associated with energy use decreased, emissions associated with transport and waste have remained relatively flat and show little to no progress.

5. CONCLUSION

5.1 Perth & Kinross Council's carbon footprint in 2022/23 has decreased year on year when considering the emission sources that have been reported to date. However, in 2022/23 the inclusion of the staff travel emissions has resulted in an increase in reported Scope 3 emissions. As a result, the overall carbon footprint for 2022/23 seems to have increased in comparison to the previous reporting year.

5.2 In achieving Perth & Kinross Council's climate objectives, the emissions reductions trend to date would need to be significantly accelerated to achieve the actions related to the Council operations and functions as set out in the Climate Change Strategy and Action Plan. However, this is highly dependent on availability of resources.

Authors

Name	Designation	Contact Details
Eirini Kourtesi	Climate Change and Sustainable Development Officer	01738 475000 ComCommitteeReports@pkc.gov.uk
Divindy Grant	Climate Change and Sustainable Development Team Leader	

Approved

Name	Designation	Date
Barbara Renton	Executive Director (Communities)	20 November 2023

APPENDICES

Appendix 1 - Public Bodies Climate Change Duties Report 2022/23 Submission

If you or someone you know would like a copy of this document in another language or format, (on occasion, only a summary of the document will be provided in translation), this can be arranged by contacting the Customer Service Centre on 01738 475000.

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ANNEX

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	Yes / None
Community Plan / Single Outcome Agreement	**Y**
Corporate Plan	**Y**
Resource Implications	
Financial	**N**
Workforce	**N**
Asset Management (land, property, IST)	**N**
Assessments	
Climate Change Assessment	**Y**
Strategic Environmental Assessment	**N**
Sustainable Procurement & Supply Assessment	**N**
Equality & Fairness Assessment	**N**
Child Rights & Wellbeing Assessment	**N**
Consultation	
Internal	**Y**
External	**N**
Communication	
Communications Plan	**N**

1. Strategic Implications

Community Plan/Single Outcome Agreement

1.1 The activities detailed in the report supports the delivery of Perth and Kinross Community Plan/Single Outcome Agreement in terms of the following priorities:

(i) Reducing poverty
(ii) Physical and Mental Wellbeing
(iii) Digital Participation
(iv) Learning and Development
(v) Employability

1.2 This report relates to (i) Reducing poverty.

Corporate Plan

1.3 The activities detailed in the report supports the achievement of the Council's Corporate Plan Priorities:

(i) Tackling poverty
(ii) Tackling climate change and supporting sustainable places
(iii) Developing a resilient, stronger and greener local economy
(iv) Enabling our children and young people to achieve their full potential
(v) Protecting and caring for our most vulnerable people
(vi) Supporting and promoting physical and mental wellbeing
(vii) Working in partnership with communities

1.4 This report relates to (i) Tackling poverty, (ii) Tackling climate change and supporting sustainable places and (iii) Developing a resilient, stronger and greener local economy

2. Resource Implications

Financial

2.1 There are no financial implications arising from the recommendations in the report.

Workforce

2.2 There are no workforce implications arising from the recommendations in the report.

Asset Management (land, property, IT)

2.3 Ther are no asset management implications arising from the recommendations in the report.

3. Assessments

Climate change Assessment

3.1 Under the Climate Change (Scotland) Act 2009, Perth & Kinross Council has a statutory duty to report on its carbon emissions. This report has no further climate change implications other than those already associated with the existing Climate Change Strategy and Action Plan.

Equality & Fairness Assessment

3.2 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties.

3.3 The information contained within this report has been considered under the Corporate Equalities Impact Assessment Process (EqIA) and has been assessed as **not relevant** for the purposes of EqIA.

Strategic Environmental Assessment

3.4 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals.

3.5 The proposals have been considered under the Act and no action is required as the Act does not apply to the matters presented in this report. This is because the Committee are requested to note the contents of the report only and the Committee are not being requested to approve, adopt or agree to an action or to set the framework for future decisions.

Sustainable Procurement & Supply Assessment

3.6 Under the Procurement Reform (Scotland) Act 2014, the Council has a duty to consider sustainable procurement as part of its procurement process. The Council is required to consider how in conducting the procurement process it can – (i) improve the economic, social, and environmental wellbeing of the authority's area, (ii) facilitate the involvement of small and medium enterprises, third sector bodies and supported businesses in the process, and (iii) promote innovation.

3.7 The report does not have any impacts on sustainable procurement and supply.

Child Rights & Wellbeing Assessment

3.8 The United Nations Convention on the Rights of the Child (UNCRC) was ratified by the UK Government in 1991. It sets out the civil, political, economic, social and cultural rights that all children, everywhere, are entitled to and is regarded as the global "gold standard" for children's rights. Screening for Child Rights and Wellbeing Impacts, alongside the Getting it Right for Every Child (GIRFEC) wellbeing indicators ensures that Council policies protect and promote the rights and wellbeing of children and young people.

3.9 This proposal was considered under the Council's Impact and Value Assessment. No impacts on Child Rights and Wellbeing were identified.

Legal and Governance

3.10 The Head of Legal and Governance Services has been consulted.

4. Consultation

Internal

4.1 There has been no other internal consultation.

2. BACKGROUND PAPERS

2.1 No background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (other than any containing confidential or exempt information) were relied on to a material extent in preparing the above report.

Perth And Kinross Council

Climate Change & Sustainability Committee

27 November 2023

LOCAL HEAT & ENERGY EFFICIENCY STRATEGY 2024-2045

Report by Strategic Lead – Economy, Development & Planning
(Report No. 23/330)

1. PURPOSE

1.1 To seek approval of the first Local Heat & Energy Efficiency Strategy (LHEES) 2024-2045 and Delivery Plan (2024-2029) for Perth and Kinross to meet the requirements of legislation and Scottish Government guidance (Appendix 1 and Appendix 2).

2. RECOMMENDATIONS

2.1 It is recommended that the Committee:

(i) approves the content of the first Local Heat & Energy Efficiency Strategy (LHEES) for the period 2024-2045 (Appendix 1).
(ii) approves the content of the LHEES 2024-2029 Delivery Plan (Appendix 2)
(iii) approves the submission of the LHEES 2024-2045 and Delivery Plan to the Scottish Government and publication when finalised
(iv) authorises the Executive Director (Communities) to make minor changes to provide easy access for further engagement and reviews, prior to publication.

3. STRUCTURE OF REPORT

3.1 This report is structured over the following sections:

- Section 4: Background
- Section 5: Context
- Section 6: Preparation and Engagement
- Section 7: Local Heat & Energy Efficiency Strategy (LHEES) 2024-2045
- Section 8: Monitoring and Review
- Section 9: Conclusion
- Appendices

4. BACKGROUND

4.1 Perth and Kinross Council has a statutory duty to prepare a Local Heat and Energy Efficiency Strategy (LHEES) and update it on a 5-year basis as part of the Local Heat and Energy Efficiency Strategies (Scotland) Order 2022 which came into force on 21 May 2022. As established in the Order, LHEES should have a two-part structure of a Strategy and Delivery Plan.

4.2 Perth and Kinross Council must publish its first local heat and energy efficiency strategy as well as its first local heat and energy efficiency delivery plan on, or before, 31 December 2023.

4.3 A local heat and energy efficiency strategy is a long-term strategic framework for the improvement of the energy efficiency of buildings in the local authority's area, as well as the reduction of greenhouse gas emissions resulting from the heating of such buildings. A delivery plan is the document setting out how the Council proposes to support implementation of its local heat and energy efficiency strategy.

5. CONTEXT

5.1 The LHEES 2024-2045 is firmly aligned to the priorities and vision of the Corporate Plan 2022/23 – 2027/28 for a Perth and Kinross where everyone can live life well, free from poverty and inequality. The LHEES 2024-2045 reflects the views of our communities, elected members, stakeholders, and partner organisations. These views have helped influence the development of the LHEES priorities and outcomes which are most important for Perth and Kinross. They will enable Perth and Kinross Council and partners to deliver more energy efficient homes and buildings, affordable warmth and heat decarbonised sources.

5.2 Mechanisms were also put in place as part of the LHEES consultation plan to ensure the LHEES is also fully aligned with local strategies, policies and plans including the:

- Perth and Kinross Climate Change Strategy and Action Plan
- Perth and Kinross Local Outcomes Improvement Plan 2022-2032
- Perth and Kinross Local Development Plan 2019
- Perth and Kinross Local Housing Strategy 2022-2027
- Perth and Kinross Child Poverty Delivery Plan 2022-2026
- Tay Cities Regional Economic Strategy

5.3 A review of relevant national strategic documents and policies has also informed the development of the LHEES.

6. PREPARATION AND ENGAGEMENT

6.1 In line with best practices in strategy development, engagement with our communities and stakeholders has been the driver to design Perth and Kinross LHEES and will be crucial for its successful delivery. We have designed, agreed and delivered an effective engagement plan with Arup, our external adviser.

6.2 A project team led the development and engagement process with two project co-leads ensuring co-ordination and day-to-day management. A cross-Council LHEES Working group ensured that information and experience was shared across the Council with key individuals focusing on specific areas of work.

6.3 A stakeholder mapping was carried out to identify stakeholders. Based on the likely level of interest and influence on the project, stakeholders have been categorised into four groups (some examples of organisations falling into each group are provided):

- Tier 1 (e.g. Council's energy team, Council's housing capital programme team, Distribution Network Operators, Housing Associations, NHS, Home Energy Scotland) – Ongoing engagement throughout the project at defined workshops e.g. identifying priorities and for delivery. Specific engagement plans developed as required.
- Tier 2 (e.g business groups, Community energy groups, private landlords) – Participate in workshops and engage with the project at key milestones (if required) - Potentially one-to-one contact during data collection stage and one-to-one interviews to be held with these stakeholders to gain further insight and understanding of priorities and delivery contributions.
- Tier 3 and 4 (e.g. Community Councils, SEPA, neighbouring local authorities) – Potentially participate in workshops and engage with the project at key milestones (ad hoc basis). Receive a direct invite to public consultation.

6.4 Tier 1 stakeholders were invited to form a LHEES Steering Group with Council's representatives and a first meeting of LHEES Steering Group took place on 30 March 2023. The LHEES Steering Group role, remit and membership is set out in Annex B of Appendix 1.

6.5 The engagement plan was structured around a series of Steering Group workshops and one-to-one interviews. Workshops' invitations and interviews were extended to other stakeholders' groups when relevant to the topic.

- Workshop 1 (March 2023): Objective settings - Knowledge building and awareness raising for key stakeholders; establishment of ongoing engagement opportunities and activities to support LHEES.
- Workshop 2 (May 2023): Baseline feedback and strategic options and priorities - Scenarios to be developed for optimisation modelling and to support finalising focus for the LHEES Strategy.
- Workshop 3 (June 2023): Heat Network Zones – identification of Heat Network Zones and discussion.

- Workshop 4 (July 2023): Online modelling feedback - Prioritised decarbonisation pathway that will be used to inform the LHEES Strategy and Delivery Plan.
- Workshop 5 (October 2023): Draft Strategy and delivery plan - Present the draft Strategy and Delivery Plan for discussion and feedback.

6.6 In addition to the formal LHEES engagement, the Strategy development is based on wider stakeholder and community engagement by PKC and our partners. These include:

- PKC's Local Housing Strategy inputs and consultation (2022);
- Big Place Conversations held across Perth & Kinross in Spring/Summer 2023;
- Net Zero Living – Pathfinder Places public engagement in Aberfeldy, Tulloch and Blairgowrie (Spring 2023).

6.7 A public consultation was also carried out in October 2023 and feedback has informed the development of the LHEES.

7. PERTH AND KINROSS LOCAL HEAT & ENERGY EFFICIENCY STRATEGY 2024-2045

7.1 The first Local Heat and Energy Efficiency Strategy (LHEES) covers the period 2024-2045 and sets out the vision for heat transition and energy efficiency in Perth and Kinross, and the outcomes required to achieve this. The period 2024-2045 for the Strategy has been set locally with the start year reflecting the statutory date for publication by 31 December 2023 and the end date reflecting the overall Scottish target date of 2045 for achieving net zero emissions. The Delivery Plan period of 2024-2029 will cover the first 5 years of the Strategy and is line with the requirements to carry out a review every 5 years.

7.2 Based on work with delivery partners, stakeholders and residents, the Local Heat and Energy Efficiency Strategy vision for Perth and Kinross is that:

"By 2045, our homes and buildings will be more energy efficient and with more decarbonised heat sources, providing more affordable warmth and no longer contributing to climate change".

7.3 The LHEES vision also places heat transition and energy efficiency at the centre of major ambitions for Perth and Kinross. To achieve this vision and realise the wider ambitions set out in the Corporate Plan and Local Outcomes Improvement Plan, the following two LHEES key priorities for action have been defined as:

- decarbonising heat within a transitioning energy system, focusing on heat networks and heat pumps.

- improving buildings' energy efficiency aiming for affordable warmth and regulatory compliance.

7.4 The LHEES outcomes identified to deliver LHEES priorities have been designed through the LHEES development process and co-produced with partners and stakeholders from public, private and independent sectors. LHEES outcomes would include significant reduction in carbon emissions, affordable and sustainable heating along with health and well-being benefits.

7.5 An evidence-based appraisal was undertaken as part of the LHEES development process. This systematically assessed and prioritised the actions required to deliver LHEES Outcomes in terms of impact, equalities and maximising resources.

7.6 The LHEES Delivery Plan 2024-2029 includes actions for delivering the following LHEES priorities. It is important to underline that these are not ranked in order of priorities and a 'fabric first' approach should always be used. The 'fabric first' approach is focusing on reducing a building's heat loss first.

Priority 1: Decarbonising heat within a transitioning energy system focusing on heat networks and heat pumps.

P1.a	Delivering decarbonised heat within a transitioning energy system – Heat Network Zones: The identified Heat Network zones include: • Perth City Centre (Very likely to be more suitable) • Perth Inveralmond Industrial Estate (Very likely to be more suitable) • Perth College/UHI (Likely to be suitable) • Perth Academy (Likely to be suitable) • Auchterarder (Likely to be suitable) • Kinross (Likely to be suitable) • Blairgowrie (Likely to be suitable)
P1.b	Delivering decarbonised heat within a transitioning energy system - Heat Pumps focusing on: • Off-gas social housing energy efficiency Category 1 highly suitable for a heat pump installation (Category 1 are properties which are well insulated property with a wet system) • Off-gas private homes suitable for heat pump retrofit • Social housing that requires energy efficiency improvements to enable suitability for heat pumps

Priority 2: Improving buildings' energy efficiency aiming for affordable warmth and regulatory compliance.

P2.a	Improving buildings' energy efficiency to meet regulatory standards, focusing on • areas with concentrations of social housing having poorer energy efficiency (below EPC B) and low costs of intervention. • areas where substantial energy and CO2 emissions savings can be achieved for privately owned homes (below EPC C) if cost effectiveness could be achieved when combined with the areas above. • areas with high potential for heat demand savings in non-domestic buildings with lower cost retrofit interventions.

	Regulatory targets for energy efficiency are: • By 2026 All Social Housing EPC D and EPC B by 2032 • By 2028 Private Rented Sector EPC C • By 2033, all homes have the equivalent of EPC C.
P2.b	Improving buildings' energy efficiency aiming for affordable warmth, focusing on • areas where poor energy efficiency is the highest and acts as a driver of fuel poverty, particularly if low cost retrofit options are possible. • areas where social housing is likely to experience a greater reduction in fuel poverty due to low cost retrofit measures.

7.7 The delivery of the LHEES key priorities will also be supported by the following mechanisms:

- taking a Whole Energy Systems Approach: Through the development of the Local Area Energy Planning (LAEP) and a collection of complementary initiatives, the Council is taking a whole systems energy approach to the development and implementation of the LHEES from generation through to demand. This would include data and scenarios building tools and platforms, the Council's estate decarbonisation programme and business case development toolkit to develop an investment programme enabling Smart Local Energy Systems.

- Developing green skills and the capacity of the supply chain: There is a need to assess skills provision and support providers as well as the local supply chain to meet the demand arising from heat transition and energy efficiency works, operations and maintenance.

- Working in partnership with communities to build community wealth and wellbeing: Communities could take advantage of heat transition and energy efficiency opportunities as well as build community wealth and wellbeing by developing local solutions which are locally shared and owned.

- Mobilising partners and public and private investments for projects: There is a need, with other local public partners, to evaluate a possible Strategic Energy Partnership to unlock delivery of, though potentially not limited to, heat networks and to improve delivery capability into large and complex energy-related projects.

7.8 The LHEES sets out the key targets in relation to housing stock, fuel poverty and heat, and decarbonisation. The Perth and Kinross LHEES targets have been aligned with the Scottish targets and will be used to measure progress in the Delivery Plan (2024-2029) and subsequent plans. However, it is recognised that these targets will be very challenging if no significant public and private investments are made available or come forward. Behaviours would also need to change to make the best use of technologies. This would be particularly the case for private households, and small and medium businesses. This is also reflected in the Delivery Plan as funding sources, where needed, will have to be identified.

7.9 The Delivery Plan also includes governance arrangements including a LHEES co-ordination team, the creation of a risk register and the development of a communication and engagement plan.

8. MONITORING AND REVIEW

8.1 Actions will be implemented through the Local Heat & Energy Efficiency Strategy (LHEES) Steering Group and by operational teams. The LHEES Steering Group will build on the strong partnerships already in place, recognising that achieving LHEES priorities will require a collective effort from all delivery partners, stakeholders, communities, and residents of Perth and Kinross.

8.2 Delivery Plan progress updates will be prepared for the Council's Climate Change Board meetings and for the Committee on an annual basis with a review of the LHEES every five years.

8.3 A LHEES co-ordination team would be established with officers dedicating all or part of their time. Allocated LHEES funding from the Scottish Government (75K/year over 2024/25, 2025/26 and 2026/27) will be used to support and strengthen the LHEES coordination and overall delivery. The co-ordination team will support the LHEES Steering Group.

8.4 A Communication and Engagement Plan will be developed by the Steering Group and has been included as one of the early actions of the Delivery Plan. The Communication and Engagement Plan will set out how the Steering Group will conduct regular consultation and engagement with stakeholders. Engagement with residents, communities, businesses and private landlords would be particularly important to ensure they are at the core of the delivery to reduce barriers and optimise benefits. It will also ensure there is awareness of the key heat transition and energy efficiency priorities for Perth and Kinross until 2029.

8.5 If approved, the format of the draft LHEES Strategy and Delivery Plan attached in Appendix 1 and 2 will be finalised to allow publication and to provide easy access for further engagement and reviews.

9. CONCLUSION

9.1 The report outlines the content of the Local Heat & Energy Efficiency Strategy (LHEES) 2024-2045 (Appendix 1) and LHEES Delivery Plan 2024-2029 (Appendix 2).

Authors

Name	Designation	Contact Details
Shelley McCann	Climate Change – Strategic Planning & Sustainability Officer	(01738) 475000 ComCommitteeReports@pkc.gov.uk
Serge Merone	Climate Change & Smart Investment Manager	

Approved

Name	Designation	Date
Barbara Renton	Executive Director (Communities)	20 September 2023

APPENDICES

- Appendix 1 – Local Heat & Energy Efficiency Strategy (LHEES) 2024-2045
- Appendix 2 – LHEES Delivery Plan 2024-2029

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All Council Services can offer a telephone translation facility.

ANNEX

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	**Yes / None**
Community Plan / Single Outcome Agreement	**Yes**
Corporate Plan	**Yes**
Resource Implications	
Financial	**Yes**
Workforce	**None**
Asset Management (land, property, IST)	**Yes**
Assessments	
Equality Impact Assessment	**Yes**
Strategic Environmental Assessment	**None**
Sustainability (community, economic, environmental)	**Yes**
Legal and Governance	**Yes**
Risk	**Yes**
Consultation	
Internal	**Yes**
External	**Yes**
Communication	
Communications Plan	**Yes**

1. Strategic Implications

Community Plan/Single Outcome Agreement

1.1 The activities detailed in the report supports the delivery of Perth and Kinross Community Plan/Single Outcome Agreement in terms of the following priorities:

(i) Giving every child the best start in life;
(ii) Developing educated, responsible, and informed citizens;
(iii) Promoting a prosperous, inclusive, and sustainable economy;
(iv) Supporting people to lead independent, healthy, and active lives; and
(v) Creating a safe and sustainable place for future generations.

1.2 This report relates to all priorities.

Corporate Plan

1.3 The activities detailed in the report supports the achievement of the Council's Corporate Plan Priorities:

(i) Giving every child the best start in life;
(ii) Developing educated, responsible, and informed citizens;
(iii) Promoting a prosperous, inclusive, and sustainable economy;
(iv) Supporting people to lead independent, healthy, and active lives; and
(v) Creating a safe and sustainable place for future generations.

1.4 This report relates to all priorities.

2. Resource Implications

Financial

2.1 Financial implications arising directly from this report emanate from the local authority domestic and non-domestic decarbonisation programme. Funding from the Scottish Government, other public bodies and private finance will apply in relation to particular actions. Allocated LHEES funding from the Scottish Government (75K/year over 2024/25, 2025/26 and 2026/27) will be used to support and strengthen the LHEES coordination and overall delivery.

Workforce

2.2 There are no workforce implications arising from the recommendations in the report. However, allocated LHEES funding from the Scottish Government may be used to create new posts if required.

Asset Management (land, property, IT)

2.3 The asset implications of this report relate to the local authority domestic and non-domestic decarbonisation programme and the use of land or other assets in Council's ownership.

3. Assessments

Equality Impact Assessment

3.1 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties.

3.2 The information contained within this report has been considered under the Corporate Equalities Impact Assessment Process (EqIA) and has been assessed as **not relevant** for the purposes of EqIA. However, it is anticipated that the LHEES outcomes would benefit positively all age groups and people with a disability.

Strategic Environmental Assessment

3.3 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals.

3.4 The proposals have been considered under the Act. Having consulted the three consultation authorities and having considered the criteria set out in the Act, the Council considers that the LHEES Strategy & Delivery Plan is unlikely to have significant (negative) environmental effects. The Council has therefore determined that SEA is not required.

Sustainability

3.5 Under the provisions of the Local Government in Scotland Act 2003 the Council must discharge its duties in a way which contributes to the achievement of sustainable development. Under the Climate Change (Scotland) Act 2009, the Council also has a duty relating to climate change and, in exercising its functions must act:

- in the way best calculated to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programmes; and
- in a way that it considers most sustainable.

3.6 The information contained within this report has been considered against the Council's Principles for Sustainable Development and the report aims to ensure compliance with the reporting requirements under the Acts.

Legal and Governance

3.7 The Head of Legal and Governance has been consulted and there are no direct legal implications in this report.

Risks

3.8 Risks associated with the delivery of LHEES actions are covered within the LHEES Delivery Plan. A Risk register will be developed and has been included as one of the early actions of the Delivery Plan.

Communication

3.9 The decisions from the report will be communicated to stakeholders and the press through the media team. A Communication Plan will be developed by the Steering Group and has been included as one of the early actions of the Delivery Plan.

4. Consultation

Internal

4.1 There has been internal consultation with Heads of Service and Service Managers through Climate Change Board and LHEES working group.

External

4.2 Consultation with a range of stakeholders, including residents and groups progressed through online and in person external meetings between January 2023 and November 2023.

2. BACKGROUND PAPERS

2.1 No background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (other than any containing confidential or exempt information) were relied on to a material extent in preparing the above report.

Perth and Kinross Local Heat & Energy Efficiency Strategy

2024-2045

DRAFT

Perth & Kinross Council

November 2023

Contents

1. FOREWORD

I am delighted to introduce Perth and Kinross Council's first Local Heat & Energy Efficiency Strategy (LHEES) which sets our ambitions until 2045. This Strategy and accompanying 5-year Delivery Plan (2024-2029) detail our approach to improve Perth and Kinross buildings' energy efficiency and to decarbonise heat in a fair and just way within a changing energy system.

Energy Efficiency and heat decarbonisation are core elements of the energy transition to Net Zero by 2045 tackling climate and biodiversity emergencies. To achieve this means all building owners in Perth and Kinross will need to do their part to cut their emissions. This strategy details how we as a Council area will approach this challenge.

Our ambitions for Perth and Kinross are reflected across two strategic priorities and multiple actions. These focus on identifying, prioritising, and delivering measures to improve buildings' energy efficiency, and where this is not possible to make a commitment to complete further research.

For a successful transition, our LHEES also emphasises the need for a just transition to Net Zero. This includes actions focussing on tackling fuel poverty by aiming to improve energy efficiency to reduce fuel bills; developing a resilient, stronger, and greener economy with green skills and jobs; working in partnership with communities to build community wealth and wellbeing from heat transition and mobilising partners and private and public investment to drive the heat transition to low and zero emissions heating.

We also want to create from the LHEES process the foundations for a more decentralised and self-sufficient energy system for our area. We have seen the consequences of not being self-reliant on energy as a result of global events and the spike in gas prices that has had an impact on everyone's energy bills. There is a commitment from UK, Scottish and local governments to increase our energy security so that this can't happen again.

This Strategy was informed by developing a rigorous evidence-base and through engagement with partners across Perth and Kinross and beyond. Ongoing collaboration, including sharing of knowledge, data, and innovations has been key to the development of Perth and Kinross's LHEES and will be key to its successful delivery.

With over half of Scottish energy demand in 2020 being for heating purposes, everyone in Perth and Kinross will either help support and deliver LHEES through improving their homes and businesses; or experience the benefits of these measures by having more energy efficient homes and workplaces with low or zero emissions heating.

I would like to thank everybody for their participation in developing the Strategy and its future delivery.

Cllr Richard Watters
Convener of Climate Change and Sustainability Committee

2. EXECUTIVE SUMMARY

Perth and Kinross Council has a statutory duty to prepare a Local Heat and Energy Efficiency Strategy and update it on a 5-year basis as part of the Local Heat and Energy Efficiency Strategies (Scotland) Order 2022 which came into force on 21 May 2022. As established in the Order, LHEES should have a two-part structure of a Strategy and Delivery Plan.

A Local Heat and Energy Efficiency Strategy is a long-term strategic framework for the improvement of the energy efficiency of buildings in the local authority's area, and the reduction of greenhouse gas emissions resulting from the heating of such buildings. A delivery plan is a document setting out how a local authority proposes to support implementation of its local heat and energy efficiency strategy.

The first Perth and Kinross Local Heat and Energy Efficiency Strategy (LHEES) (2024-2045) and accompanying 5-year Delivery Plan (2024-2029) is firmly aligned to the priorities and vision of the Council and its partners for a Perth and Kinross where everyone can live life well, free from poverty and inequality.

The LHEES 2024-2045 reflects the views of our communities, elected members, stakeholders, and partner organisations. These views have helped influence the development of the LHEES priorities and outcomes which are most important for Perth and Kinross. They will enable Perth and Kinross Council and partners to deliver more energy efficient homes and buildings, affordable warmth and heat decarbonised sources.

The LHEES vision for Perth and Kinross is that "by 2045, our homes and buildings will be more energy efficient and with more decarbonised heat sources providing more affordable warmth and no longer contributing to climate change". This will lead to the outcomes of significant reduction in carbon emissions, affordable and sustainable heating and health and well-being benefits.

The LHEES targets are aligned with the Scottish Targets and will be used to measure progress in the Delivery Plan (2024-2029) and subsequent plans. However, it is recognised that these targets would be very challenging if no significant public and private investments are made available or come forward as well as if behaviours are not changing. This would be particularly the case for private households and small and medium businesses.

To support the LHEES vision and outcomes, the Strategy focus on two Strategic Priorities:

- Decarbonising heat within a transitioning energy system focusing on heat networks and heat pumps.
- Improving buildings' energy efficiency aiming for affordable warmth and regulatory compliance.

These are broken down into the following delivery priorities:

- Delivering decarbonised heat within a transitioning energy system through Heat Network Zones which would include Perth City Centre, Perth Inveralmond Industrial Estate, Perth College/UHI, Perth Academy, Auchterarder, Kinross and Blairgowrie.

- Delivering decarbonised heat within a transitioning energy system - Heat Pumps focusing on off-gas social housing energy efficiency Category 1 highly suitable for a heat pump installation (i.e. well insulated property with a wet system), off-gas private homes suitable for heat pump retrofit and social housing that requires energy efficiency improvements to enable suitability for heat pumps.

- Improving buildings' energy efficiency to meet regulatory standards in
    - areas with concentrations of social housing having poorer energy efficiency (below EPC B) and low costs of intervention,
    - areas where substantial energy and CO2 emissions savings can be achieved for privately owned homes (below EPC C) if cost effectiveness could be achieved when combined with the areas above and
    - areas with high potential for heat demand savings in non-domestic buildings with lower cost retrofit interventions.

- Improving buildings' energy efficiency aiming for affordable warmth in areas where poor energy efficiency is the highest and acts as a driver of fuel poverty, particularly if low cost retrofit options are possible and areas where social housing is likely to experience a greater reduction in fuel poverty due to low cost retrofit measures.

The delivery of the LHEES priorities will also be supported by the following mechanisms:

- Taking a Whole Energy Systems Approach: Through the development of the Local Area Energy Planning (LAEP) and a collection of complementary initiatives, the Council is taking a whole systems energy approach to the development and implementation of the LHEES from generation through to demand. This would include data and scenarios building tools and platforms, Council's Estate decarbonisation programme and business case development toolkit to develop an investment programme enabling Smart Local Energy Systems.

- Developing green skills and the capacity of the supply chain.

- Working in partnership with communities to build community wealth and wellbeing.

- Mobilising partners and public and private investments for projects including through a possible Strategic Energy Partnership to unlock delivery of, though potentially not limited to, heat networks.

3. INTRODUCTION

Perth and Kinross Council has declared Climate Change and Biodiversity emergencies. A Climate Change Strategy and Action Plan have been approved and all partners are mobilised to implement agreed actions. Heat decarbonisation and improving energy efficiency are at the centre of our efforts to achieve net zero by 2045.

As established in the Local Heat and Energy Efficiency Strategies (Scotland) Order 2022, Perth and Kinross Council has a duty to prepare a Perth and Kinross Local Heat and Energy Efficiency Strategy (LHEES).

Perth and Kinross LHEES is at the heart of a place based, locally-led and tailored approach to the heat transition. Our ambition is to use it to develop a whole energy planning approach going beyond heat and energy efficiency to include transport decarbonisation, local renewable energy generation, energy storage, demand-side flexibility and networks.

This document presents the first Perth and Kinross Local Heat and Energy Efficiency Strategy (LHEES) (2024-2045) and accompanying 5-year Delivery Plan (2024-2029). Firstly, it presents what a LHEES and provides policy and strategy context and baseline for Perth and Kinross domestic and non-domestic buildings. Then, it details our vision, outcomes and targets and presents our local challenges and opportunities and our engagement and consultation process. Finally, it details our strategic priorities, deliver plan and governance and monitoring arrangements.

4. WHAT IS A LHEES?

A LHEES focuses on transforming and reducing the demand for heat and energy.

LHEES are at the heart of a place based, locally led and tailored approach to the heat transition. These local strategies will underpin an area-based approach to heat and energy efficiency planning and delivery. Scottish Local Authorities have a statutory duty to prepare LHEES and update them on a 5-year basis.

A LHEES should have a two-part structure of a Strategy and Delivery Plan. Perth and Kinross LHEES Strategy will:

- set out how each segment of the building stock needs to change to meet national and local objectives, including achieving zero greenhouse gas emissions in the building sector, and the removal of poor energy efficiency as a driver of fuel poverty.
- identify strategic heat decarbonisation zones, and set out the principal measures for reducing buildings emissions within each zone; and
- prioritise areas for delivery, against national and local priorities.

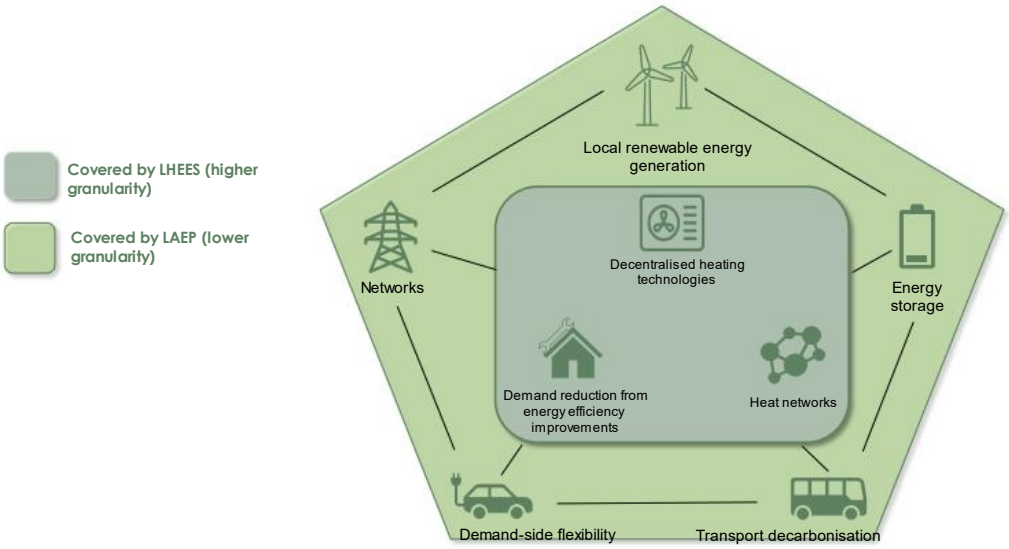
National guidance frames the Strategy around six considerations which have shaped our development of strategic and delivery priorities, as shown in Table 1.

Table 1 National LHEES considerations

	LHEES Considerations
Heat decarbonisation	Off-gas grid buildings
	On-gas grid buildings
	Heat networks
Energy efficiency and other outcomes	Poor building energy efficiency
	Poor building energy efficiency as a driver for fuel poverty
	Mixed-tenure, mixed-use and historic buildings

Recognising the need for compatibility with the wider energy system, Perth and Kinross Council is developing a Local Area Energy Plan (LAEP). The relationship between the LHEES and LAEP is shown in Figure 1. The LAEP will support collaboration with network operators, and other key stakeholders, to inform the development of targets as well as deliverable actions within a net zero energy system that balances out energy generation, transmission, storage and usage, including heat, at a substation area and Council wide scale, through to 2045.

Figure 1 Overview of LHEES and LAEP



Alongside this, the Council is working to prepare a Council Estate Decarbonisation Plan for its own building stock. The Council is also developing a toolkit that will assess LHEES and LAEP delivery actions and areas to develop a pipeline of investable energy projects to inform Smart Local Energy Systems (SLES). These aligned programmes of work will support the delivery of our LHEES and are further explored in the Delivery Plan section.

5. POLICY AND STRATEGY CONTEXT

5.1 National and UK Context

This section summarises the national and UK level strategies and legislations that set out the key drivers behind LHEES.

Climate Change Plan Update (2018-2032)

This update to Scotland's 2018-2032 Climate Change Plan sets out the Scottish Government's pathway to the new and ambitious targets set by the Climate Change Act 2019. The main target is that by 2045, Scotland will be net-zero. Furthermore, by 2032:

- 35% of heat for domestic buildings will be supplied using low carbon technologies, where technically feasible, and all buildings (residential and non-domestic) will be insulated to the maximum appropriate level.
- 70% of heat and cooling for non-domestic buildings will be supplied using low carbon heat technologies.
- Improvements to the building fabric of Scotland's buildings will result in a 15% reduction in residential and 20% in non-residential heat demand.

Key outcomes relevant to the LHEES are shown in the table below:

Action Number/ Reference	Action
Buildings - Outcome 1	The heat supply to our homes and non-domestic buildings is very substantially decarbonised, with high penetration rates of renewable and zero emissions heating
Buildings- Outcome 2	Our homes and buildings are highly energy efficient, with all buildings upgraded where it is appropriate to do so, and new buildings achieving ultra-high levels of fabric efficiency

Buildings - Outcome 3	Our gas network supplies an increasing proportion of green gas (hydrogen and biomethane) and is made ready for a fully decarbonised gas future
Buildings - Outcome 4	The heat transition is fair, leaving no-one behind and stimulates employment opportunities as part of the green recovery.

Heat in Buildings Strategy (2021)

The Heat in Buildings (HiB) Strategy sets out the Scottish Government's vision for the future of heat in buildings, and the actions they are taking in the buildings sector to deliver climate change commitments, maximise economic opportunities, and ensure a just transition, including helping address fuel poverty.

The key targets are as follows:

- Majority of buildings should achieve a good level of energy efficiency by 2030 and all homes should meet an EPC band C standard by 2033.
- All social housing to meet EPC B, or be as energy efficient as practically possible, by the end of 2032; all private rented sector properties to reach a minimum standard of EPC C by 2028 where technically feasible and cost effective.
- A 68% reduction in emissions from heat in buildings by 2030 (relative to 2020 levels).

The HiB Strategy sets out the aspirations for LHEES, in particular to:

- Support local community and wider national infrastructure issues
    - Act as an investment prospectus at national and local level, guiding delivery programmes, and signalling potential areas of investment to market actors.

- Support planning for the energy networks and over time will become an important evidence base for both the electricity Distribution Network Operators (DNOs) and Gas Distribution Network (GDN).

- Local public engagement, awareness raising and involvement in decision making
- Supporting area based regulation

The HiB Strategy sets out the ambition for regulation in Scotland for heat decarbonisation and energy efficiency performance.

Heat Networks (Scotland) Act 2021 and Heat Networks Delivery Plan

The Act aims to accelerate the deployment of heat networks in Scotland through the introduction of a regulatory system aimed at boosting consumer confidence in the sector and providing greater certainty for investors. This Act supports the growth of heat networks through a number of initiatives including ensuring that heat networks are developed in appropriate areas to maximise investor benefits and drive prices down for users and ensuring local communities are aware of developments which can support future users for heat networks. Targets include 2.6 TWh of heat to be supplied by heat networks by 2027 and 6 TWh by 2030.

The Act focuses on regulating the construction and operation of a heat network; making provisions about the powers of persons holding a heat networks licence; making provisions about conferring rights in heat network assets where a licence holder ceases operations; and for connecting purposes. The Heat Networks Delivery Plan sets out how the provision in the Act will be used to accelerate the deployment of heat networks in line with national targets.

Section 47 of the Heat Networks (Scotland) Act places a duty on local authorities to carry out a review to consider whether one or more areas in its area is likely to be particularly suitable for the construction and operation of a heat network. The LHEES Methodology sets out an approach to support local authorities to discharge this duty. This Methodology has been followed when preparing the Council's LHEES. In carrying out a review under Section 47(1), a local authority must have regard to the matters mentioned in Section 48(1). Heat Network Zones (designated by Local Authorities as per regulatory requirement) will be put out to a competitive tender process whereby operators who have

first gained a licence and project-specific consent will bid for a zone permit (likely granting exclusivity to operate over a long-term period though this is yet be clarified). The secondary legislation is currently in development and will clarify the scope of the Act and how operators and public sector bodies will interact with it. A summary of the key provisions in the Act is included below:

Heat Network Act theme	Description
Heat Networks Licence	Prospective heat network operators will have to first obtain this licence with the intention of ensuring that market participants are solvent, competent, fit and proper and can provide their essential service in line with conditions set by a Licensing Authority, with ongoing monitoring and enforcement where necessary. This, in turn, will provide assurances to both consumers and investors in deciding whether to become involved in the sector
Heat Network Consents	The requirement to attain project-specific consent will ensure that projects are vetted to assess how they will contribute to targets on emissions reduction or fuel poverty. Heat network operators will have to obtain this consent if they are to progress with any prospective heat network project in Scotland. The consenting authority would most likely be Scottish Ministers due to the risk of self-regulation if local authorities were to take on this responsibility.

Heat Network Permits	Heat networks are in-effect mini grids, isolated from the wider gas grid. This means that operators do not have the same floating customer base in which to recover their costs from that gas and electricity operators benefit from. Granting operators long-term permits seeks to mitigate against this by providing a natural monopoly following a competitive tender process. The guarantee that operators will have exclusivity within a designated Heat Network Zone will provide certainty of a steady return on investment. Giving operators confidence that they will be able to recover their costs over a long period of time increases the commercial viability of a heat network. This confidence will allow investors to target more ambitious projects. It is not yet clear what the permitting element of the Heat Networks Act will mean for operators and the Council will continue to engage with the Scottish Government on the development of secondary legislation for the Act.
Heat Network Zones	To fully maximise the benefits of a heat network, strategic planning is required to identify zones that have the most potential. This zone-specific approach allows buildings with significant heat demands (anchor loads) to be identified,

	along with possibilities to utilise renewable sources for the supply. The requirement to identify and legally designate heat networks zones by local authorities will provide an informed evidence base which will enable long-term planning around where a heat network is commercially attractive and how they can advance key strategic goals around decarbonisation and fuel poverty. This provision of the Act has now come into force and more information can be accessed here
Building Assessment Reports (BARs)	This puts a duty on the public sector to assess their estate for suitable heat network connection. This will provide clarity on heat demand alongside connection suitability from an architecture perspective. Whilst this only applies to the public sector at present, this may extend to all non-domestic buildings in the future. His provision of the Act has now come into force.
Powers of Licence Holders	This aspect of the Act will equip heat network licence holders with statutory undertaking powers. Operators will have similar wayleave and access rights granted to other utility providers. Such rights can be in relation to compulsory acquisition of land, wayleaves, survey works, and access to carry out work.

	This aims to reduce capital costs connected to construction and the associated delays often suffered. The Scottish Government are currently considering whether to extend this right to the road network, something that conventional utilities have rights over. Network wayleave rights will also be granted to operators. This will enable operators to request from the Scottish Ministers the right to install pipework and other apparatus up to any building. The building owners will be under no obligation to connect, but the ability to connect in the first place will provide operators with a higher degree of confidence in future asset connection.
Heat Networks Assets Schedule and Transfer Regime	This element of the Act requires heat networks to have a scheme in place to transfer operational rights to a third party to ensure sustained supply, if and when needed.

Fuel Poverty (Targets Definition and Strategy) (Scotland) Act 2019.

The Act sets out a new target relating to the eradication of fuel poverty, as well as providing a revised definition of fuel poverty. By 2040: no more than 5% of households in Scotland are in fuel poverty; no more than 1% of households in Scotland are in extreme fuel poverty.

LHEES should be primarily driven by Scotland's statutory targets for greenhouse gas emissions reduction and fuel poverty. The LHEES Strategy and Delivery Plan should

therefore seek to implement actions and delivery that support fuel poverty alleviation. It should be noted though, that the LHEES Consideration only covers fuel poverty driven by poor energy efficiency.

Scottish Energy Strategy & Just Transition Plan (Scottish Government)

Published in January 2023 this sets out how Scotland will meet the challenge of reducing demand within main energy-using sectors such as heat in buildings, transport, industry and agriculture whilst using energy more efficiently, and becoming largely decarbonised by 2030. The Strategy identifies the requirement of significant investment to fund the transition and suggests a financing policy model that will seek to leverage private sector investment to support public investment. The Plan is currently under consultation.

Housing to 2040 (Scottish Government)

Housing to 2040 sets out a vision for housing in Scotland to 2040 and a route map to get there. It aims to deliver an ambition for everyone to have a safe, good quality and affordable home that meets their needs in the place they want to be. This will inevitably include affordable low carbon heating systems.

National Planning Framework (NPF4) (Scottish Government)

Published in February 2023, The National Planning Framework 4 (NPF4) sets the context for development planning in Scotland and provides a framework for the spatial development of Scotland as a whole. It is a statutory document and all planning applications must consider the policy implications of NPF4. NPF4 requires that Local Development Plans take into account the area's LHEES and that the spatial strategy should take into account areas of heat network potential and any designated Heat Network Zones. Policy 19 sets out the development management considerations which will facilitate and enable new developments to incorporate and promote LHEES.

NPF4 will be a key influence on the revised Local Development Plan (LDP) for Perth & Kinross and will stipulate how planning policy can be used at local level towards the achievement of strategic goals. LHEES and the LDP should incentivise developers to switch to communal heating systems or connect to a larger district heating scheme, particularly in designated Heat Network Zones. NPF4 will also place greater emphasis on the environment and sustainability against aspects relating to heritage protection.

New Build Heat Standard (forthcoming)

From 1 April 2024, new buildings in Scotland applying for a building warrant will be required to use zero direct emissions heating systems (ZDEH) to meet their space and hot water heating and cooling demands. This will include systems such as heat pumps and heat networks. The Council will need to incorporate these requirements into the next Local Development Plan to incentivise heat network connection where practical and feasible.

Hydrogen Policy Statement (2020) (Scottish Government)

This sets out the vision for Scotland to become a leading hydrogen nation in the production of reliable, competitive, sustainable hydrogen. Whilst hydrogen is not likely to be widely used as a fuel source for district heating, it is being introduced in a pilot scheme to 300 premises in Fife as part of a H100 trial project to promote renewable energy generated hydrogen for heating and cooking.

Tenements (Scotland) Act 2004

A Tenement Management Scheme, is outlined in Schedule 1 of the Tenements (Scotland) Act 2004, lists the 'scheme property' (explaining what parts for the tenement every flat owner should maintain) and explains how to come to arrangements about maintenance ('scheme decisions') and how costs are shared between owners. The Climate Change (Scotland) Act 2009 amends the Tenement Management Scheme to log insulation installation as a maintenance measure rather than an 'improvement' so changes can be approved via a majority rather than unanimously. Tenements (and Multi-Dwelling Units - MDUs) are a challenge for the LHEES as cooperation is required from a number of owners for any works to the buildings fabric and communal areas.

Historic Environment Policy for Scotland (HEPS) (May 2019)

The Historic Environment Policy for Scotland (HEPS) is non-statutory, but relevant to a wide range of decision-making at national and local levels. It is supported by detailed policy and guidance. HEPS outlines six policies on managing change to the historic environment most notably HEP5 - Decisions affecting the historic environment should contribute to the sustainable development of communities and places.

The Planning (Listed Building Consent and Conservation Area Consent Procedure) (Scotland) Regulations 2015

Listed building consent is the mechanism by which planning authorities ensure that any changes to listed buildings are appropriate and sympathetic to their character. Conservation area consent controls the demolition of unlisted buildings in conservation areas. Both are important considerations when it comes to installing heat pumps or other technology and energy efficiency measures (such as external insulation) to the fabric of buildings.

Review of Electricity Market Arrangements (REMA)

The UK Government in 2022 launched a major review into Britain's electricity market design to identify opportunities for consumers to benefit from cheaper energy and enhanced energy security in the longer term. Proposals under the scope of REMA include the exploration of fundamental changes to the electricity market to remove volatile gas prices from setting the wholesale cost of electricity, allowing consumers to benefit from lower cost renewable energy. The outcomes of REMA are critically important to the successful delivery of the LHEES where it relates to heat pumps and district heating where the supply relies on electricity. To remove the influence of gas on electricity prices will reinforce the business case for the electrification of heat in Perth & Kinross.

5.2 Perth and Kinross Context

At a local level a suite of policy documents have been identified through the Policy review with linkages to the drivers and priorities for developing and implementing LHEES, as set by the Scottish Government. Key local policies and strategies include:

- **Climate Change Strategy and Action Plan** – Produced in 2021, this sets out the Council's next steps in relation to climate change, outlining the initial route map to support them to a net zero carbon and climate resilient Perth and Kinross, and identifies energy and buildings as a key requirement for change. The strategy commits to developing heat networks, where possible, helping to confirm LHEES as fundamental in reaching statutory targets.
- **Local Housing Strategy 2022-2027** – Priorities include a goal to deliver quality homes with affordable warmth, zero emissions and SMART technology. Intended outcomes that will drive these include supporting the

implementation of the Council's LHEES; expanding the capacity of energy and fuel poverty advice services; and improving the availability of information on fuel poverty and energy efficiency measures available to front line staff and service providers to households most in need.

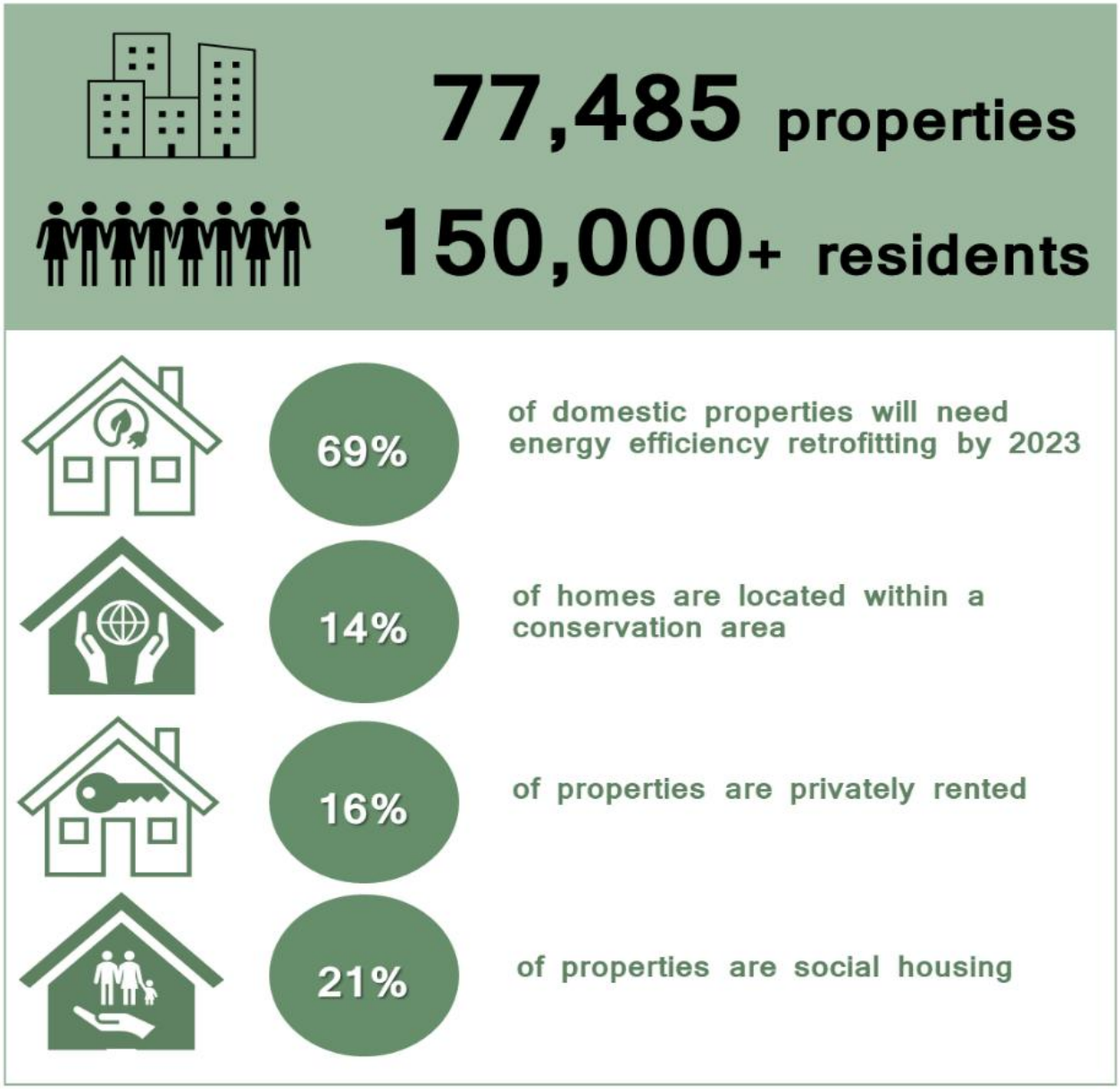
- **Local Development Plan 2** – There are four main categories in the LDP: to create a successful, sustainable place; a low-carbon place; a natural, resilient place; and a connected place. Priorities include strategic district heating opportunity areas in Perth, Crieff and Blairgowrie, and Policy 34: Sustainable Heating relates to the coordination of Heat Network Zones, Major Developments and LDP Site Allocations.
- **Community Plan (Local Outcomes Improvement Plan)** – Strategic objectives include reducing poverty, including fuel poverty, through a suite of actions and targets including researching community renewable energy co-operative schemes elsewhere in UK and assessing the feasibility of implementing these in Perth and Kinross.
- **Corporate Plan 2022-2028 –** The Plan sets out a vision for a Perth and Kinross Council, where everyone can live life well, free from poverty and inequality. Targets include 6.5% of council housing to meet minimum EPC B by 2023/24 and 12% by 2026/27.

6. PERTH AND KINROSS BASELINE

This section provides a baseline of domestic and non-domestic buildings in Perth and Kinross.

6.1 Domestic baseline

What is the current state of Perth and Kinross's Housing?



The baseline information has been summarised here to provide context for the remaining sections. To read the full baseline document for LHEES, please visit this link.

Poor energy efficiency

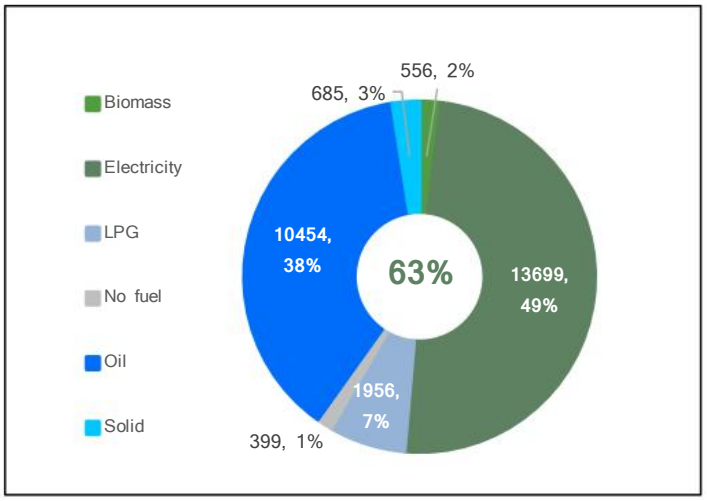
A significant proportion (58%) of domestic properties across Perth and Kinross have an Energy Performance Certificate (EPC) rating of D-G, which is higher than the national average of 51%. Key points include:

- The proportion of detached or semi-detached houses in Perth and Kinross (55%) is higher than national average (39%). This contributes to a larger number of external walls.
- 45% of domestic properties having uninsulated walls, which is higher than the national average of 41%.
- 58% of these uninsulated properties are solid stone in construction, which present challenges when it comes to upgrading the building's structure.
- Larger properties will have a higher heating demand and be more expensive to upgrade. 15% of properties in Perth and Kinross have 7 or more habitable rooms.

There is a significant spatial variation in energy efficiency by area across Perth and Kinross, with Strathearn and Highland Perthshire having some of the lowest levels.

Fuel Type

Figure 2 Breakdown of domestic fuel sources for off-gas areas



In Perth and Kinross, 63% of domestic properties are currently serviced by the gas grid, while 36% of domestic properties are not (known as being off-gas). This off-gas proportion is significantly higher than the national average. The remaining 1% of properties have unknown off-gas status. In on-gas areas, 99% of properties are currently connected to the grid. As can be seen from Figure 2, in off-gas areas there are a number of fuel sources used. To decarbonise these properties, all properties on oil,

Liquified Petroleum Gas (LPG) and solid fuel (e.g., coal) will need to transition to alternative sources.

Fuel poverty

What is Fuel Poverty? A 10% threshold is used in a two-part metric where a household is in fuel poverty if:

'After housing costs, the total fuel costs needed to maintain a satisfactory heating regime are more than 10% of the household's adjusted net income *and* if, after deducting fuel costs, housing costs, benefits received for a care need or disability, and childcare costs, the household's remaining adjusted net income is insufficient to maintain an acceptable standard of living'.

What is Extreme Fuel Poverty? 'Where more than 20% of the income after housing costs is spent on required fuel costs and there is insufficient residual income to maintain an acceptable standard of living.'

Fuel Poverty (Targets, Definition and Strategy) (Scotland) Act 2019

Table 2 shows that the percentage of households in fuel poverty and extreme fuel poverty in Perth and Kinross is higher than the national average. This is likely due to the old building stock and the associated poor energy efficiency of properties in the area. The Scottish House Condition Survey (SHCS) 2019 is the most reliable data source available to local authorities to estimate overall fuel poverty levels and how these vary spatially across Perth and Kinross.[1] However, since this was carried out, the increases in the energy price cap in 2021 and 2022 have likely led to an increase in probability of fuel poverty. To account for this the Scottish Government has developed an approach to deriving an uplifted value to the October 2022 energy price cap as shown below.

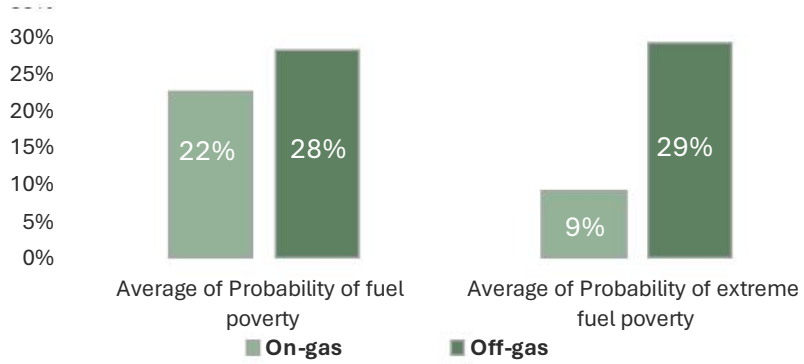
[1] Note: The datasets to calculate accurate current fuel poverty levels is not currently available to Local Authorities and so user surveys and proxy data must be relied upon to make best estimates.

Table 2 - Fuel Poverty Levels and Extreme Fuel Poverty Levels

	Scotland - SHCS 2019	Scotland - SCHS 2019 - Uplifted value (2022)	Perth & Kinross SCHS 2019 - Original value	Perth & Kinross SCHS 2019 - Uplifted value (2022)
Percentage of households in fuel poverty	24%	35%	28%	63%
Percentage of households in extreme fuel poverty	12%	Not Available	18%	40%

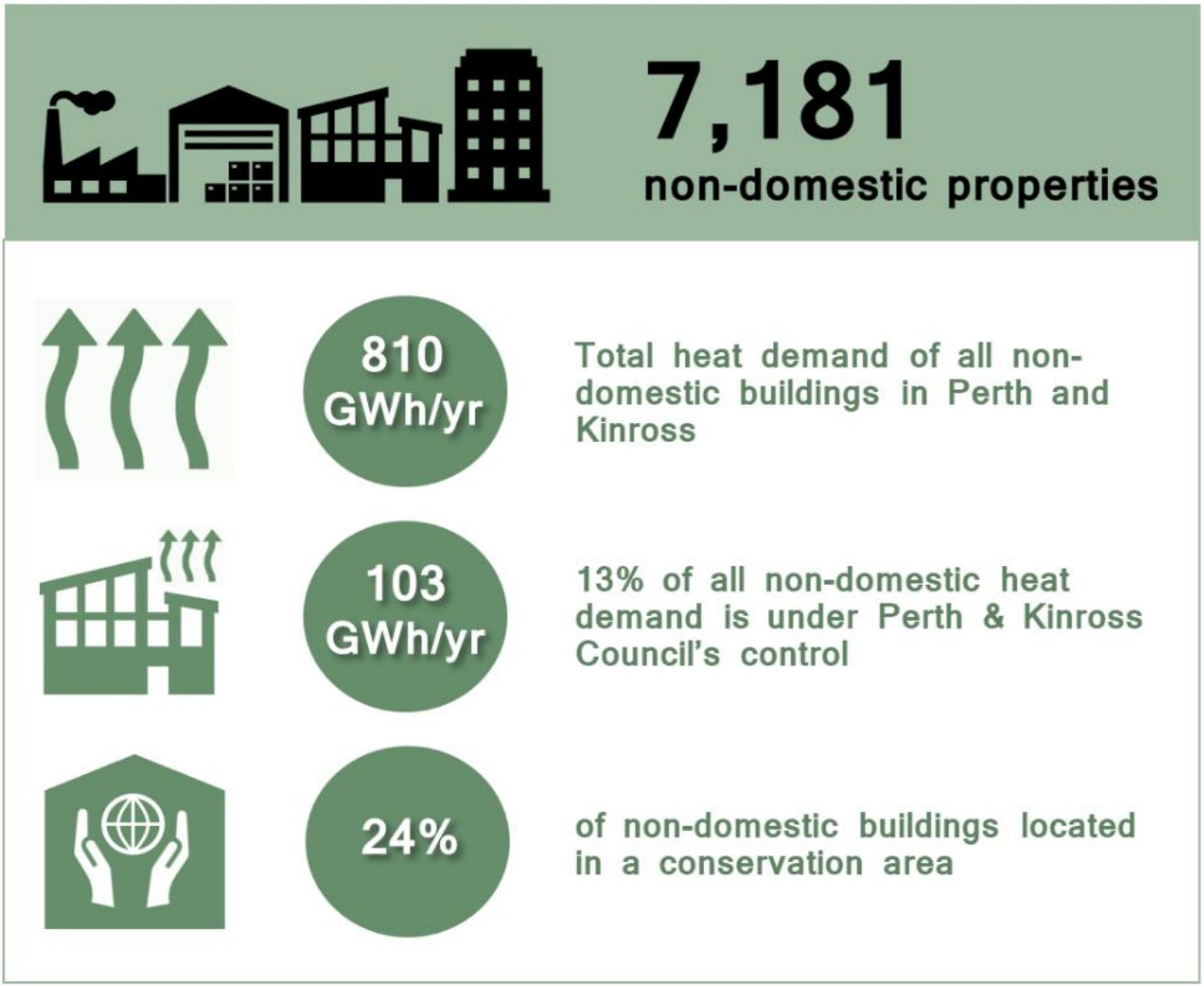
The average probability of fuel poverty and extreme fuel poverty is higher in off-gas properties than on-gas properties, as shown in Figure 3. In particular, off-gas properties with electricity and solid fuel types tend to have a higher probability of fuel poverty. Heat decarbonisation and energy efficiency improvements in off-gas properties therefore present the opportunity to reduce fuel poverty. However, any recommendations for interventions in heat decarbonisation should carefully consider the impact on fuel poverty, ensuring that it is not exacerbated.

Figure 3 Probability of fuel poverty for on-gas and off-gas properties (Note: Data is based on 2019 SHCS values as was not available for the uplifted values)



6.2 Non-domestic baseline

What is the current state of Perth and Kinross non-domestic properties?

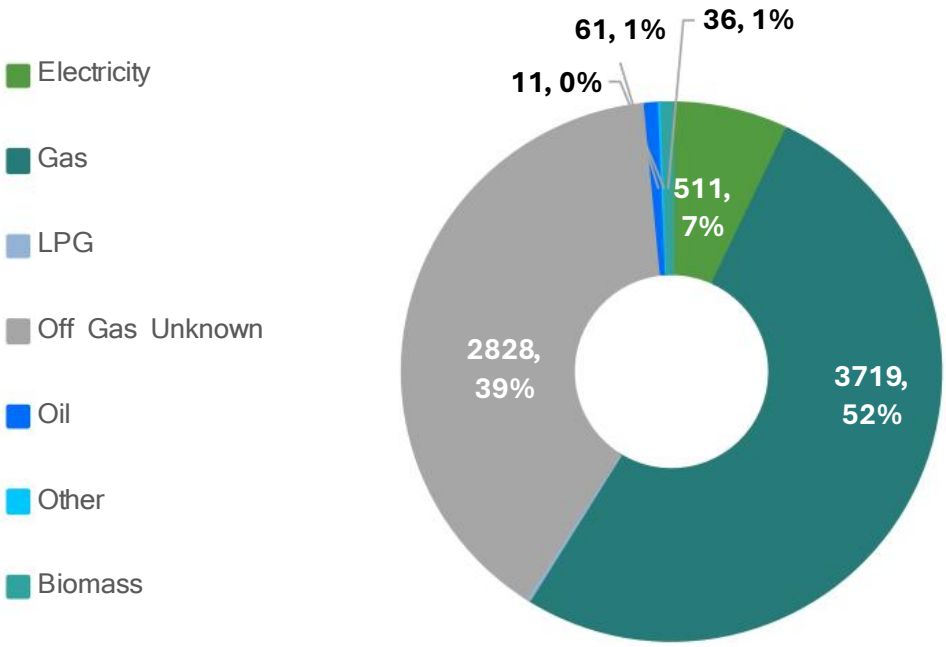


The baseline information has been summarised here to provide context for the remaining sections. To read the full baseline document for LHEES, please visit this link.

Perth and Kinross non-domestic building stock is made up of 7,181 buildings with a total annual heat demand of 810 GWh/yr. In general, acquiring energy demand data for the non-domestic sector is more challenging as valid EPCs are only in place for 19% of properties in this sector. As such, heat demand data used in this baseline is based on modelled heat demands.

The division of fuel type by property count is shown in Figure 4. Approximately 52% of non-domestic properties are served by mains gas and this accounts for 63% of the total annual heat demand.

Figure 4 Heat source for non-domestic properties (by count of property)

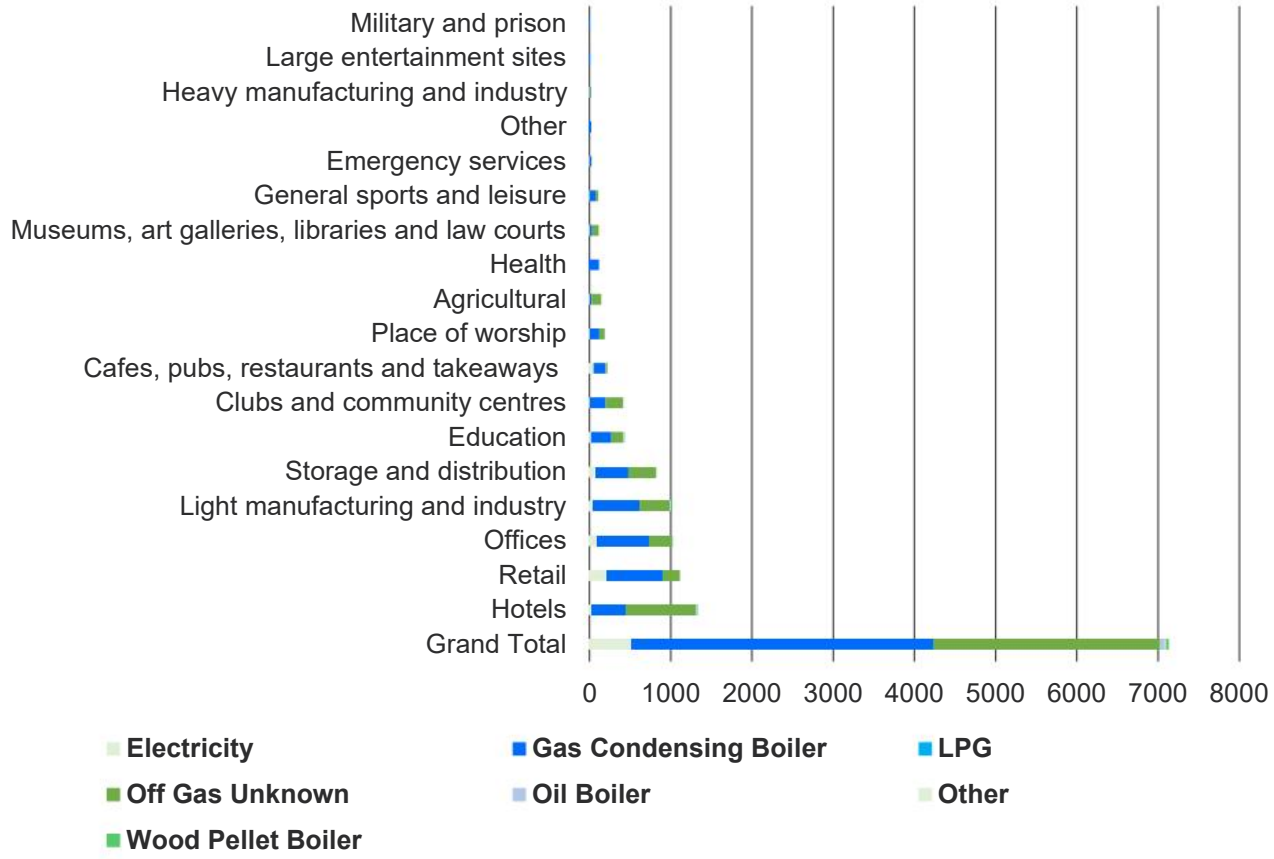


As can be seen from **Figure 5**, the building typologies (sectors) with the largest heat demand are educational buildings (i.e., schools, colleges, and universities), offices and hotel buildings.

- Educational buildings have the highest heating demand at ~112 GWh. Approximately 59% of these buildings rely on gas.
- Perth and Kinross is home to around 1,000 office buildings, which collectively contribute to 13% of the total non-domestic heat demand (108 GWh).
- Hotels, which include individual holiday rental properties, have a total annual heat demand of 104 GWh. Compared to other building typologies, hotel buildings have a lower proportion of heat demand met by gas (48%, 50 GWh), which is likely to be attributed to their rural location.
- Light industry and manufacturing accounts for 11% of non-domestic heat demand in Perth and Kinross. Heavy industry and manufacturing only accounts for <1% of the heat demand. It is important to recognise that this figure may potentially be larger in reality, as certain process demands might not be accounted for in the formation of the dataset used.

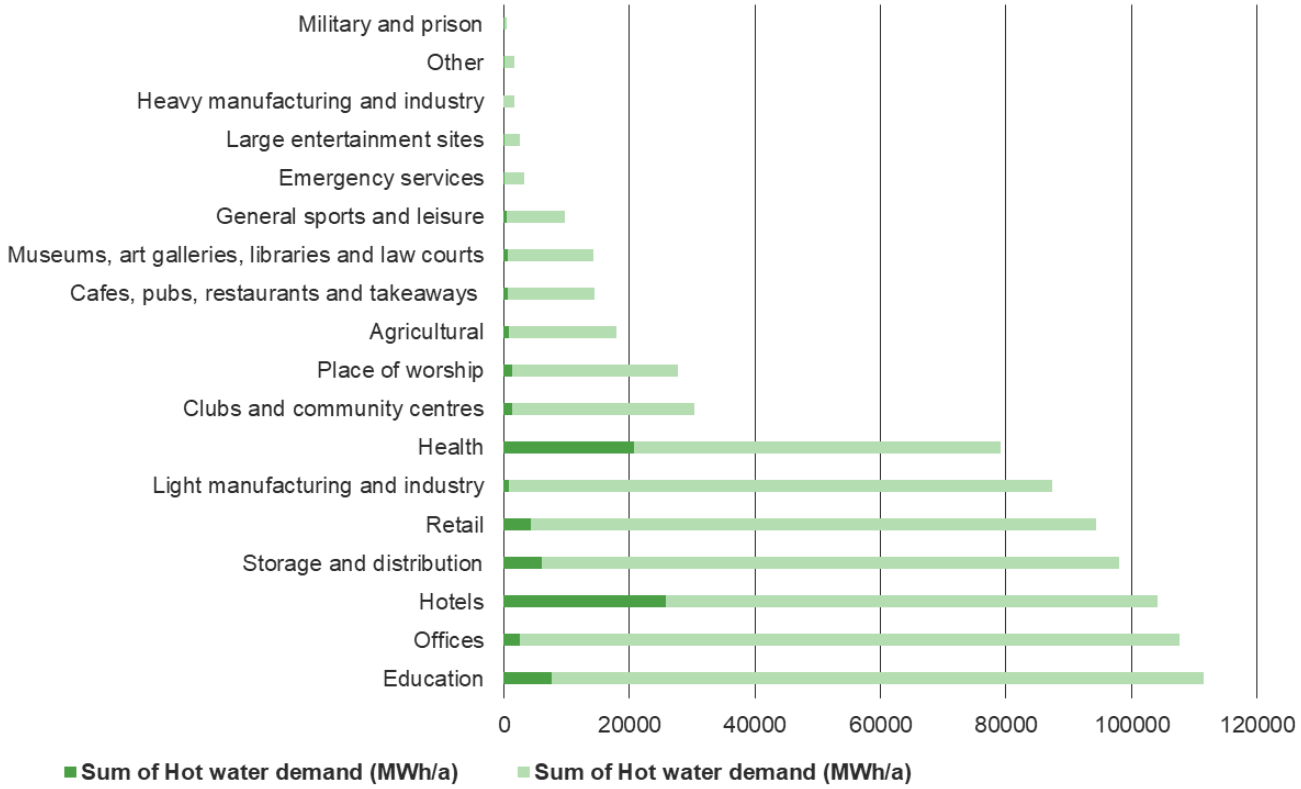
The non-domestic heat demand is not uniformly distributed across Perth and Kinross. Strategic actions and zones are defined at a data zone level which is a common geography used across the public and private sector to represent communities and have populations of 500 to 1,000 residents. The data zones with the highest heat demand from non-domestic buildings are those that contain industrial estates or large campuses, such as Perth Royal Infirmary, and in urban centres such as Perth City Centre.

Figure 5 Building typology (sector) by heat source



The proportion of heat demand used for providing hot water will influence the zero-emissions heating system used to meet heat demand. Figure 6 shows the heat demand for each building typology, split by space heating and hot water demand. Hotels and health sector buildings have a higher proportion of hot water demand compared to other building typologies. These building typologies also tend to have high peak demands which will impact system sizing and may require a secondary heating system to ensure peak demands can be met.

Figure 6 Split of heating demand by building typology



7. VISION, OUTCOMES AND TARGETS

This section presents the LHEES Vision, Outcomes and targets.

7.1 LHEES Vision

Informed by the evidence and working with stakeholders, a vision for Perth and Kinross LHEES (2024-2045) has been developed.

Perth & Kinross Council supports Scotland's Heat in Buildings Strategy vision that by 2045 our homes and buildings are cleaner, greener, easy to heat, and no longer contributing to climate change, as part of the wider just transition to net zero.

The vision for Perth and Kinross's first Local Heat and Energy Efficiency Strategy is:

> **Vision**
>
> By 2045, our homes and buildings will be more energy efficient and with more decarbonised heat sources providing more affordable warmth and no longer contributing to climate change.

The vision for Perth and Kinross's first LHEES is set within the overall ambition to become Net Zero by 2045 which the Council committed to in December 2021. The Council is also committed to a 75% reduction in carbon emissions across its area by 2030 and to make all its own buildings net zero by 2038.

7.2 LHEES Outcomes

The vision will achieve significant outcomes including:

Significant Reduction in Carbon Emissions: widespread adoption of energy-efficient technologies and decarbonised heat sources will have led to a substantial reduction in carbon emissions from homes and buildings.

Affordable and Sustainable Heating: heating in homes and buildings will become more affordable, with a greater reliance on renewable and low-carbon energy sources. This will reduce energy bills for residents and businesses while promoting sustainability. As energy becomes more affordable and efficient, it will help alleviate fuel poverty, ensuring that vulnerable communities have access to the warmth and comfort they need without straining their finances.

Health and Well-being Benefits: Energy-efficient building designs and technologies will lead to improved indoor comfort levels, ensuring that people can enjoy warm and comfortable living and working spaces without the need for excessive energy consumption. Reduced pollution will improve air quality.

7.3 LHEES targets

The Perth and Kinross LHEES is driven by Scotland's overarching statutory targets for greenhouse gas emissions reduction and fuel poverty:

Net zero emissions by 2045 and 75% reduction by 2030

No household in Scotland is in fuel poverty by 2040

The key targets and the current Perth and Kinross position are outlined in

Table 3 to **Table 5**.

Table 3 - Energy efficiency targets against Perth & Kinross Baseline

Key Targets – Housing Stock	Target Year	P&K Level of Compliance value	Number of households/properties requiring retrofit	Estimated retrofit costs (£M)
All Social Housing EPC D or Above	2026	93%	1,100	(Included in EPC B total)
All Social Housing EPC B or Above	2032	17%	13,600	£145.1
All Domestic Private Rented Properties EPC C or Above	2028	28%	8,700	£147.5
All properties should meet EPC Band C (residual Owner Occupier)	2033	32%	31,400	£616.1

Table 4 - Fuel Poverty targets against Perth & Kinross Baseline

Key Targets – Fuel Poverty	Target Year	P&K Current Fuel Poverty Levels	Number of households currently in fuel poverty
No more than 5% of households in fuel poverty (More than 10% of net household income on fuel)	2040	63%	44,900
No more than 1% of households in extreme fuel poverty (More than 20% of net household income on fuel)	2040	40%	30,200

Table 5 - Heat decarbonisation targets against Perth & Kinross Baseline

Key Targets – Heat and Decarbonisation	Target Year	P&K Current value	Estimated number of households/properties requiring interventions
70% of heat for non-domestic buildings will be using low carbon technologies	2032	9%	4,300
35% of domestic heat demand will be supplied using low carbon technologies	2032	18%	12,700

Given the statutory targets for Scotland are already ambitious with respect to the other nations in the UK and the huge scale of the transformation required in Perth and Kinross to meet these, Perth and Kinross LHEES targets are aligned with the Scottish statutory heat and energy targets. However, it is recognised that these targets would be very challenging if no significant public and private investments are made available or come forward as well as if behaviours are not changing. This would be particularly the case for private households and small and medium businesses.

8. LOCAL CHALLENGES AND OPPORTUNITIES

Delivering a heat and energy transformation at the scale required to meet the Scottish Government requirements and Perth and Kinross ambitions poses both significant barriers and challenges and offers significant opportunities.

8.1 Barriers and Challenges

Several barriers and challenges to delivering the LHEES and reaching our strategic aims have been identified by PKC and key stakeholders. These include:

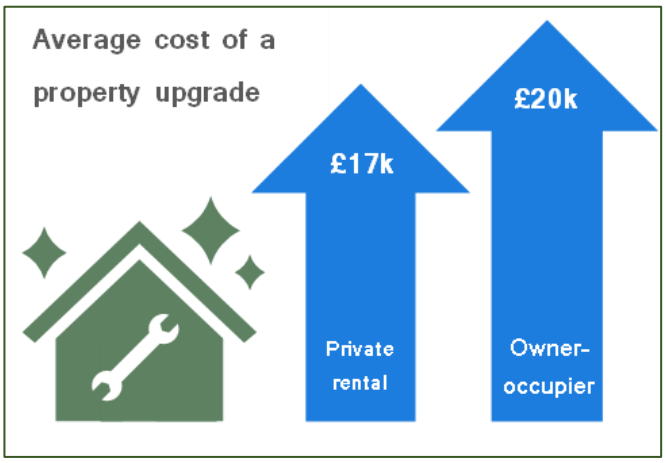
Physical building stock

Predominantly due to the age of the housing stock, Perth and Kinross houses have a higher percentage of hard-to-treat houses in every key criterion than the Scottish average, as shown in Table 6. The proportion of buildings built pre-1919 is significantly higher than national average with nearly all of these built using traditional construction methods with solid brick and stone and designed to provide passive ventilation. They are classed as "hard-to-treat" in retrofit terms as installing external or internal wall insulation for these properties can often be more expensive and involve more invasive installation procedures. The majority of these pre-1919 buildings are also either listed or located in conservation areas, or both, posing an additional challenge for retrofit interventions.

Table 6– Comparison of the Perth & Kinross vs Scottish Average Building Stock

Category	Perth and Kinross	Scottish Average
Age - Pre-1919 Buildings	24%	18%
Tenure - Private rented accommodation	16%	13%
Size - Detached or semi-detached	55%	39%
Fuel - Off gas	36%	19%
Energy Efficiency - EPC bands D-G	58%	51%
Heritage - In conservation area	14%	10%
Fuel poverty	28%	24%

Affordability and tenure



Perth and Kinross has lower levels of social housing at (14%) than the Scottish average. This is the sector that Perth & Kinross Council has the most direct control over. Private rented accommodation levels are higher than the Scottish average. While there are deadlines associated with the property transition, it has been observed that some landlords are preferring to sell their properties rather than upgrade them or costs of upgrading are reflected in rent uplifts.

Funding

The total investment required for homes and buildings to reach net zero by 2045 across Scotland is in excess of £33 billion. There is a lack of funding and support, at the right scale, to support the upgrade of heat in buildings. There are existing schemes to support social housing and fuel poor homes, as well as grants and interest-free loans accessible to residents. Furthermore, the government's emphasis on funding heat networks does not lend itself well to a more rural area that has a relatively limited number of viable heat networks. Additionally, whilst there is private investment available, it is often harder to attract to more rural areas, especially given the economies of scale compared to city regions. In response to funding challenges, Scottish Government has established the Green Heat Finance Taskforce to explore and identify innovative financing mechanisms to help individuals and organisations make their properties warmer, greener and more efficient.

Public awareness and buy-in

Public awareness of what individuals and businesses can and need to do to make this energy transition is still widely lacking. For those who want to take action; having a trusted source of technical knowledge has been identified by many as a barrier to taking further action.

In Perth and Kinross, several organisations currently provide free home energy advice and home visits, including SCARF, the HEAT Project, Warm Connection and the Citizens Advice Bureau. At the current combined scale of operation over the next 10-years, these organisations will only have the capacity to reach approximately 25% of homes requiring retrofitting.

Building public trust in new technologies will be important for adoption – both for heat pumps and heat networks. Both are still new to Scotland and Perth and Kinross with relatively low levels of consumer confidence. A key concern for consumers relates to being 'locked in' to a heat network with no option to go to the open market for a better price in response.

Skills and supply chain

Heat transition and energy efficiency bring a huge opportunity to create jobs and develop new skills in the workforce. However, there is undoubtedly a gap at present between the targets now set and the capacity of our supply chains and skills to deliver. This includes:

- For a scaled-up deployment of heat pumps, the existing workforce will need to develop (more) electrical skills to complement existing gas engineering or plumbing skills. Evidence from consultations suggests that these skills are already in great demand, with evidence of companies struggling to fill positions as a result of short supply.
- There is a need for growing capacity in the region's education and training system. This is not just for volume, but for effectiveness, responsiveness and connectivity between education and training providers and businesses.
- There is also evidence that there are not enough local businesses to supply the goods or services to support heat transition and energy efficiency improvements.

Lack of regulation and misalignment of national targets

While Scotland has leading climate targets and even with the Scottish Government's Heat in Building Bill which sets out its plans to regulate the domestic and non-domestic sector decarbonisation, there remains limited influence the Council can exert to ensure the timely

upgrade of buildings. This risks leaving the ambitions of Perth and Kinross potentially constrained when opportunities are identified, as there are no regulatory enforcements, other than for the social housing sector, that can be readily utilised. It is not until this regulation comes into force that the transition in the private market will be able to take full effect.

Grid capacity

Decarbonising heat, focusing on heat networks and heat pumps, which run on electricity, places significant pressures on the grid. Heat pump uptake potential for Perth and Kinross is high with approximately 49% of our buildings highly suitable for transition to meet regulatory targets. The grid is already constrained or near capacity at several locations within Perth and Kinross. Future changes in available capacity and wider energy system decarbonisation must be considered when planning strategic widespread deployment of heat pumps.

The Council are working alongside SSEN and other partners in the Regional Energy System Optimisation Planning (RESOP) project, which will utilise the outputs of our LHEES, LAEP and our live Delivery Plans to plan decarbonisation pathways by enabling low carbon technologies (LCTs) such as heat pumps to be sited in cost-effective locations whilst providing early warning to SSEN of additional demand on the network. This will help us to ensure alignment with grid investment planning in the near to medium term, while helping to improve and shape longer term roll out and investment required up to 2045. Alignment of our investment planning with SSEN and other key delivery partners will support the development and triaging of a pipeline of low carbon projects through to delivery, avoiding risks and barriers posed by grid capacity.

Data availability

There are issues with the current data availability, access and sharing that impact on the ability to target priority areas for action and require the use of proxy data. These include:

- Non-domestic sector data
- Energy consumption and heat demand data, especially for large users
- Fuel poverty data

- Funding eligibility data
- Data protection and commercial sensitivity

8.2 Opportunities

The delivery of the Perth and Kinross LHEES also brings many opportunities.

Use of natural assets, waste heat and new technologies

There is potential for several technologies using our natural assets which could be used to provide heat sources for potential heat networks. These include:

- Water source heat pumps which could use heat from the River Tay and other local bodies of water.
- Ground source heat pumps which could use heat at a maximum depth of 200 metres underground.
- Energy from waste which could use heat produced from burning waste.
- Geothermal which could use heat from 500 and 2,500 metres underground.
- Heat pumps and exchangers which could use heat from wastewater or the public sewer.
- Other sources of waste heat.

Hydrogen

Hydrogen could be used on a large scale as a cleaner replacement for natural gas in the gas grid, supplying individual boilers or heat networks. The UK Government will take decisions on the role of hydrogen in the Great Britain gas network from 2026.

Given the Scottish Government's proposed hydrogen use hierarchy and the forecasted cost and supply constraints, hydrogen is not currently considered as a significant heat source in the Perth and Kinross LHEES, but the development of the sector and alignment with developing policy will be tracked in liaison with Scottish Gas Network, one of our key stakeholders.

Green jobs and building a green economy

With over £900M in retrofit investment needed in the domestic sector alone in Perth and Kinross over the next decade, there is significant potential to grow good green jobs. In addition to the direct skills required to deliver the transition (installation of heat pumps &

insulation, etc.), there is also the potential for a secondary economy to develop, focused on finding circular uses for the old assets (gas boilers, single glazed windows, etc).

Financing

Heat networks typically have high up-front capital costs alongside a longer-term return on investment. This causes challenges in business case development and at present, nearly all schemes require government subsidies to make them deliverable. There is increased private sector interest in heat networks, especially when at scale. In Perth and Kinross, the development of large-scale district heating in Perth may be a key strategic heat decarbonisation opportunity attractive to the market for private investment. However, this may be more attractive when packaged with other energy projects.

Public-Private Collaboration

There are opportunities for public-private collaboration. Partnerships could be developed between Perth & Kinross Council and other public sector/social organisations such as Registered Social Landlords (RSLs) or between public/social organisations and Distribution Network Operators (DNOs) or indeed the wider private sector. One option progressed by other areas in the UK is a Strategic Energy Partnership to bring private sector expertise and to secure significant levels of capital investment required for the development of heat networks and other energy-related projects. The projects taken forward by the energy partnership could deliver on local priorities relating to carbon reduction, fuel poverty and energy security with the aim of developing Smart Local Energy Systems.

Co-benefits

There are several societal co-benefits associated with the delivery of the LHEES. These include:

- Reduction in fuel bills, associated with energy efficiency improvements and potential heating source improvements (e.g., oil to heat pump)
- Warmer and healthier homes with improved indoor air quality
- Increased energy security, with local or renewable Scottish sources able to meet a higher percentage of energy demand.

The LHEES is an opportunity to bring in a whole energy system approach to maximise all of these co-benefits.

9. ENGAGEMENT AND CONSULTATION

This section details the engagement and consultation process which took place for the development of the LHEES Strategy and Delivery Plan.

9.1 Engagement in strategy development

In line with Perth and Kinross Offer and with best practices in strategy development, engagement with our communities and stakeholders has been the driver to design Perth and Kinross LHEES and will be crucial for its successful delivery.

We have organised ourselves to design, agree and deliver an effective engagement plan with the support of Arup, our external adviser.

Perth and Kinross Council Climate Change Board agreed the overall strategy development scope and engagement plan with the Executive Director (Communities) as the Executive Sponsor and Climate Change and Smart Investment Manager as the Senior Responsible Officer. The approval of the P&K LHEES strategy and delivery plan sits with the Council's Climate Change and Sustainability Committee.

Reporting to the Board, a Project Team led the development and engagement process with two project co-leads ensuring co-ordination and day-to-day management. A cross-Council LHEES Working group ensured that information and experience was shared across the Council with key individuals focusing on specific areas of work.

A stakeholder mapping was carried out to identify stakeholders. Based on the likely level of interest and influence on the project, stakeholders have been categorised into four groups:

- TIER 1 - Ongoing engagement throughout the project at defined workshops e.g. identifying priorities and for delivery. Specific engagement plans developed as required.

- TIER 2 – Participate in workshops and engage with the project at key milestones (if required). Potentially one-to-one contact during data collection stage and one-to-one interviews to be held with these stakeholders to gain further insight and understanding of priorities and delivery contributions.
- TIER 3 and 4 – Potentially participate in workshops and engage with the project at key milestones (ad hoc basis). Receive a direct invite to public consultation.

TIER 1 stakeholders were invited to form a LHEES Steering Group with Council's representatives and a first meeting of LHEES Steering Group took place on 30th March 2023. The Steering Group's role, remit and membership is set out in in Appendix B to this Strategy.

The engagement plan was structured around a series of Steering Group workshops and one-to-one interviews. Workshops' invitations and interviews were extended to other stakeholders' groups when relevant to the topic.

- Workshop 1 (March 2023): Objective setting - Knowledge building and awareness raising for key stakeholders; establishment of ongoing engagement opportunities and activities to support LHEES.
- Workshop 2 (May 2023): Baseline feedback and Strategic Options and Priorities - Scenarios to be developed for optimisation modelling and to support finalising focus for the LHEES Strategy.
- Workshop 3 (June 2023): Heat Network Zones – identification of Heat Network Zones and discussion.
- Workshop 4 (July 2023): Online modelling feedback - Prioritised decarbonisation pathway that will be used to inform the LHEES Strategy and Delivery Plan.
- Workshop 5 (October 2023): Draft Strategy and delivery plan - Present the draft Strategy and Delivery Plan for discussion and feedback.

In addition to the formal LHEES engagement, the Strategy development is based on wider stakeholder and community engagement by PKC and our partners. These include:

- PKC's Local Housing Strategy inputs and consultation (2022);

- Big Place Conversations held across Perth & Kinross in Spring/Summer 2023;
- Net Zero Living - Pathfinder Places public engagement in Aberfeldy, Tulloch and Blairgowrie (Spring 2023).

9.2 Outputs of community consultation

Following consultation with partners and stakeholders, a draft LHEES vision with priorities for action was developed. Before the final strategy was developed, we wanted to make sure that local people, communities and stakeholders have their say on whether these priorities will make a positive difference to meeting their needs.

The views of residents, the local community and stakeholders are crucial in ensuring that the first LHEES truly reflects the issues faced by local people and includes the correct priorities and actions to address these issues. In developing the LHEES, we have consulted with local stakeholders from an early stage and want to continue that process with residents and the local community to make sure we get it right.

We issued a consultation document with evidence reports on 3 October 2023 with a response deadline on 29 October 2023. Details of the consultation document and related reports could be accessed at Perth and Kinross Local Heat & Energy Efficiency Strategy 2024-2045 Consultation - Perth & Kinross Council Citizen Space - Citizen Space (pkc.gov.uk).

The Consultation document asked a number of questions and although the number of responses was low, it provided a qualitative insight into public perception of LHEES. A summary is provided below:

- Vision and outcomes: agreement and good positive support. Presented clearly- However, generally, quite complex and technical area with jargon.
- Targets: alignment to Scottish targets was supported. However, doubts about the availability of finance to achieve them as well as the need to change behaviours.
- Challenges: agreement with identified challenges. Historic and listed buildings would need more considerations.
- Opportunities: agreement with identified opportunities. Use of hydrogen was raised as difficult and not certain. More emphasis on social value opportunities as co-benefits.

Expected future decoupling of gas and electricity prices could be highlighted. Heat as by-product to support heat network could be highlighted.

- Strategic priorities: Strategic priorities may need to be prioritized with improving the fabric of buildings first before changes to the heating system.
- Strategic actions: heat network zones focus should put more emphasis on the scope to use District Heating systems in rural towns, especially where there is active and motivated community involvement and therefore not use the model too rigidly. Emphasis on heat pumps is questioned in relation to installation and operating costs and this should be reflected in the delivery timescale and considering phased heat supply (lowering temperature in line with energy efficiency progress). Funding capacity of private owners was also highlighted as a challenge particularly when gas prices are cheaper than electricity. More generally, actions are comprehensive. It was suggesting adding an action to complete a detailed risk review and maintain the resultant risk matrix/register for each action with early engagement with private sector partners through this process to sense check and advise on actions and their progress/outcomes.
- Delivery Plan: early engagement with potential private sector partners would be beneficial and lead to quicker resolutions. The selection of criteria was supported. It was suggested to add information on the compatibility with target timelines for each of these.
- Supporting mechanisms: the whole energy system approach was supported. Skills supply and demand and local supply chain were highlighted as important with attraction of new people to the industry, upskilling and keep it local. Supporting Community to take advantage of heat transition was also highlighted as important by informing better, providing financial support, but also building on existing practices. Mobilising public and private investment was supported including exploring strategic energy partnership as this could simplify procurement, ensure commitment from partner/s, and is likely to lead to wider positive impacts. However, there is a need to ensure it does not prevent other investment in the area. Early involvement of private sector delivery partners, to prevent challenges and delays in procurement and delivery. In particular, early confirmation and clarity on a) the role that the Council wishes to play in the long term energy solution (and heat network) development and deployment and b) the method by which it will procure development, investment, delivery and operational services for the energy system and c) the model which it will establish for how it will work with industry in the supply of services, for example Memorandum of Understanding, joint venture or concession model. This will be

important to provide investors with signals on scale of opportunity and likely commercial arrangements underpinning heat networks deployment.

The outputs from the consultation have been used in finalising the LHEES Strategy and Delivery Plan.

9.3 Impact Assessments

Perth and Kinross Council has considered the following impact assessments in developing the LHEES.

Table 7 PKC LHEES Impact Assessment

Impact Assessment	Status	Comments
Strategic Environmental Assessment	Screened out at the Screening Stage	To view the Screening Report and Determination, please visit: https://www.pkc.gov.uk/article/23543/Strategic-Environmental-Assessment
Data Protection Impact Assessment	Required - Completed	
Equality and Fairness Impact Assessment	Required - On-going	Consultation with Perth & Kinross Equalities groups on-going as part of wider public engagement. Potential for significant positive impact.
Business and Regulatory Impact Assessment	Scoped out	Following internal screening this Strategy was deemed not applicable

10. STRATEGIC PRIORITIES

10.1 LHEES Priorities

To achieve this vision and outcomes, two strategic priorities form the basis of the Strategy and Delivery Plan:

Priority 1

Decarbonising heat within a transitioning energy system focusing on heat networks and heat pumps.

Priority 2

Improving buildings' energy efficiency aiming for affordable warmth and regulatory compliance.

There are not ranked in order of priorities and a fabric first approach should always be used. These were developed through an evidence-based approach drawing on national and local strategies; engagement with key stakeholders; and an analysis of the buildings in Perth and Kinross.

The delivery of these two strategic priorities will be supported through prioritisation of actions, a whole energy system approach and key supporting delivery mechanisms.
To support the successful delivery of our Strategic vision and priorities, a number of ideas for action have been identified, assessed and prioritised by the Council with key stakeholders.

Perth and Kinross-wide mapping of heat decarbonisation opportunities, alongside whole energy system considerations, was completed to identify where interventions are most suitable and where challenges exist. The analysis supports the development of a long term, strategic investment framework through prioritisation of our strategic zones, including heat network zones and more granular delivery priorities - targeting areas for projects, programmes, engagement and providing a focus for delivery of a pipeline of projects over the short to medium term.

10.2 Strategic Zoning

Strategic zones were generated to assess our strategic priorities - decarbonised heat within a transitioning energy system (potential heat network zones and heat pump suitability) and improving buildings energy efficiency, to meet regulatory targets and address fuel poverty delivering affordable warmth.

A range of evidence was used to prioritise strategic zones and actions including:

- the domestic baseline and non-domestic baseline for our building stock
- Portfolio Energy Analysis Tool (PEAT) retrofit scenarios to ensure that buildings are retrofitted to comply with policy set out in the regulatory standards outlined in the Heat in Buildings and Energy Efficiency Standards for Social Housing post-2020 (EESSH2)
- Non-domestic retrofit analysis modelling energy efficiency measures influenced by the building typology to assess possible energy savings.
- Scottish and Southern Electricity Networks (SSEN) infrastructure and capacities including Primary substations (33kV/11kV) and the Electricity Supply Areas (ESAs) that they serve as an indicator of substation capacity.

Strategic Zones for our identified priorities aim to spatially set out areas of focus to decarbonise the building stock, with a focus on understanding the current performance of buildings, and an analysis of cost-effective opportunities for significant energy and emissions reductions. Strategic Zoning evaluates various aspects of energy efficiency and heat decarbonisation in Perth and Kinross.

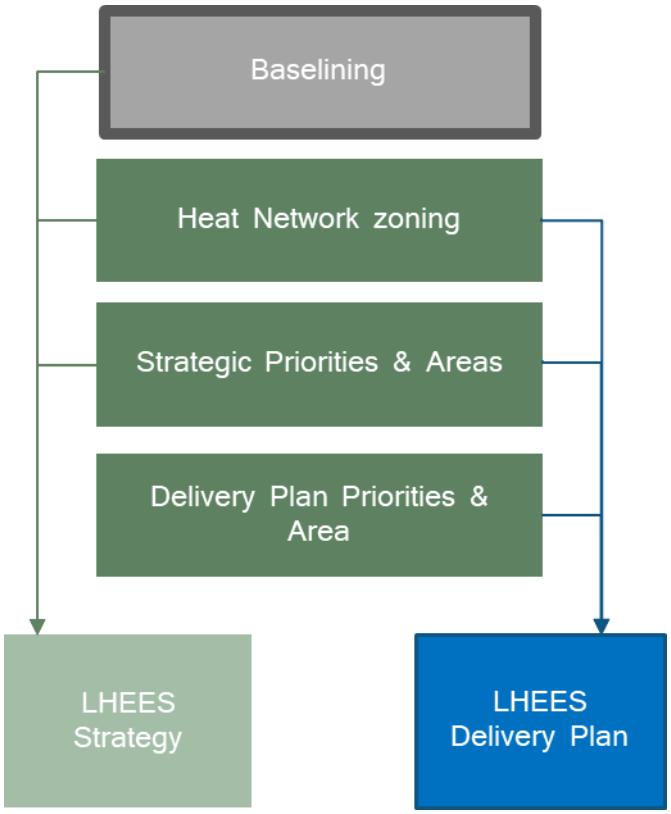
The aim of Strategic Zoning is to understand the opportunities and potential challenges associated with heat decarbonisation and energy efficiency improvements, at a strategic data zone level (e.g., 500-1000 residents) for inclusion in the LHEES.

The analysis and visualisation were undertaken using mapping which integrates multiple variables affecting heat decarbonisation, energy efficiency and deliverability to identify specific challenges and opportunities in delivering interventions. This approach represents a significant advancement beyond the LHEES methodology and facilitates a deeper

understanding of opportunities and challenges, as well as actions that could form the basis of delivery planning for the Council.

10.3 Strategic vs Delivery zoning for priorities

The LHEES methodology requires development of strategic priorities and zones which set out how a local authority proposes to meet longer term national and local objectives and prioritise areas to meet these targets. This is supported by complementary, more granular delivery priorities and areas pinpointing targeted intervention and early, low-regrets measures in the near to medium term (5-year focus). This process is illustrated in the diagram below and delivery plan priorities are described further in section 11.



10.4 Strategic Priority 1a: "Delivering decarbonised heat within a transitioning energy system - Heat Network Zones"

Regulatory targets for heat decarbonisation are:

- **By 2030**, emissions from buildings have to be 68% lower than 2020 levels
- **By 2032**, 70% of heat for non-domestic buildings will be using low carbon technologies

What is a Heat Network? Heat networks (also known as district heating) supply heat from a central source to consumers, via a network of underground pipes carrying hot water. Heat networks can cover a large area or even an entire city or be fairly local supplying a small cluster of buildings.

What are Potential Heat network zones? Potential Heat network zones are areas particularly suitable for heat network development. The purpose of the zones is to attract investment from heat network developers.

Approach for Identifying Potential Heat Network Zones

Heat Networks (Scotland) Act 2021 places a duty on local authorities to carry out a review of potential areas for heat networks. The formal designation of heat network zones will use outputs from LHEES as a starting point for more detailed work on consideration and formal designation of heat network zones. Secondary legislation and guidance are being phased-in between May 2023 and 2025 and will include the formal designation of potential heat network zones.

The approach to identifying potential zones builds upon the national heat network assessment methodology. Potential zones have been preliminarily screened by key stakeholders to identify any known issues or barriers which limit taking the zone forward for further investigation.

What is a Linear Heat Density? "Linear heat density is an industry standard metric that relates heat to distance, for a heat network it is heat demand per meter of pipe."

What is an Anchor Load? "Anchor loads are high heat demand buildings and key connections on a heat network that usually drive the economics of heat networks."

LHEES methodology: Heat Networks - Generation of Potential Zones Detailed Practitioner Approach

The LHEES methodology uses two sets of criteria to identify potential heat network zones (Table 6). Stringent zones have a higher level of heat demand and greatest potential financial viability, while Baseline Zones are still expected to be viable, but less so than Stringent Zones.

Table 6: Thresholds criteria used for Potential Zone identification and prioritisation

	Linear heat density benchmark (kWh/yr./m)	Anchor load threshold (MWh/yr)	Minimum number of anchor loads per cluster
Baseline	4,000	500	2
Stringent	8,000	500	5

Potential Heat Network Zones

Due to the rural nature of Perth and Kinross, the potential for heat networks in the local authority area is limited to a few urban areas and towns. Two zones were identified using Stringent criteria - one in the Perth City Centre and one in the Inveralmond Industrial Estate (Perth). These zones have higher heat demand density with a larger number of anchor loads, making them more likely to be financially viable. Five further zones were identified using Baseline criteria, indicating financial viability in these locations may be limited. The identified zones include:

- Perth City Centre (Stringent and Baseline)
- Perth Inveralmond Industrial Estate (Stringent and Baseline)
- Perth College/UHI (Baseline only)
- Perth Academy (Baseline only)

- Auchterarder (Baseline only)
- Kinross (Baseline only)
- Blairgowrie (Baseline only)

A full summary of potential heat network zones can be viewed here and via a web map available to explore the full range of heat network opportunities available in further detail. The seven potential zones are shown indicatively in **Figure 7** to **Figure 10**. Currently the extent of the zones is indicative based on the criteria and approach outlined above. The Council will work towards improving demand confidence, clarifying supply options, and engaging with potential anchor load connections to support formal designation and refine zone boundaries. Potential zones will be further verified and reviewed in terms of suitability as part of the Heat Network Designation work to be undertaken in 2024/25.

Challenges exist for the financial viability of heat networks. Improved regulation, evidence, funding and policies at both a local and national level are required to maximise the incentive to invest in heat networks. The cost of heat compared to conventional fuels like gas is a key driver of this, but heat networks must also be shown as the most cost-effective decarbonisation option for buildings within Potential Heat Network Zones.

Figure 7 Indicative Heat Network Zones Perth

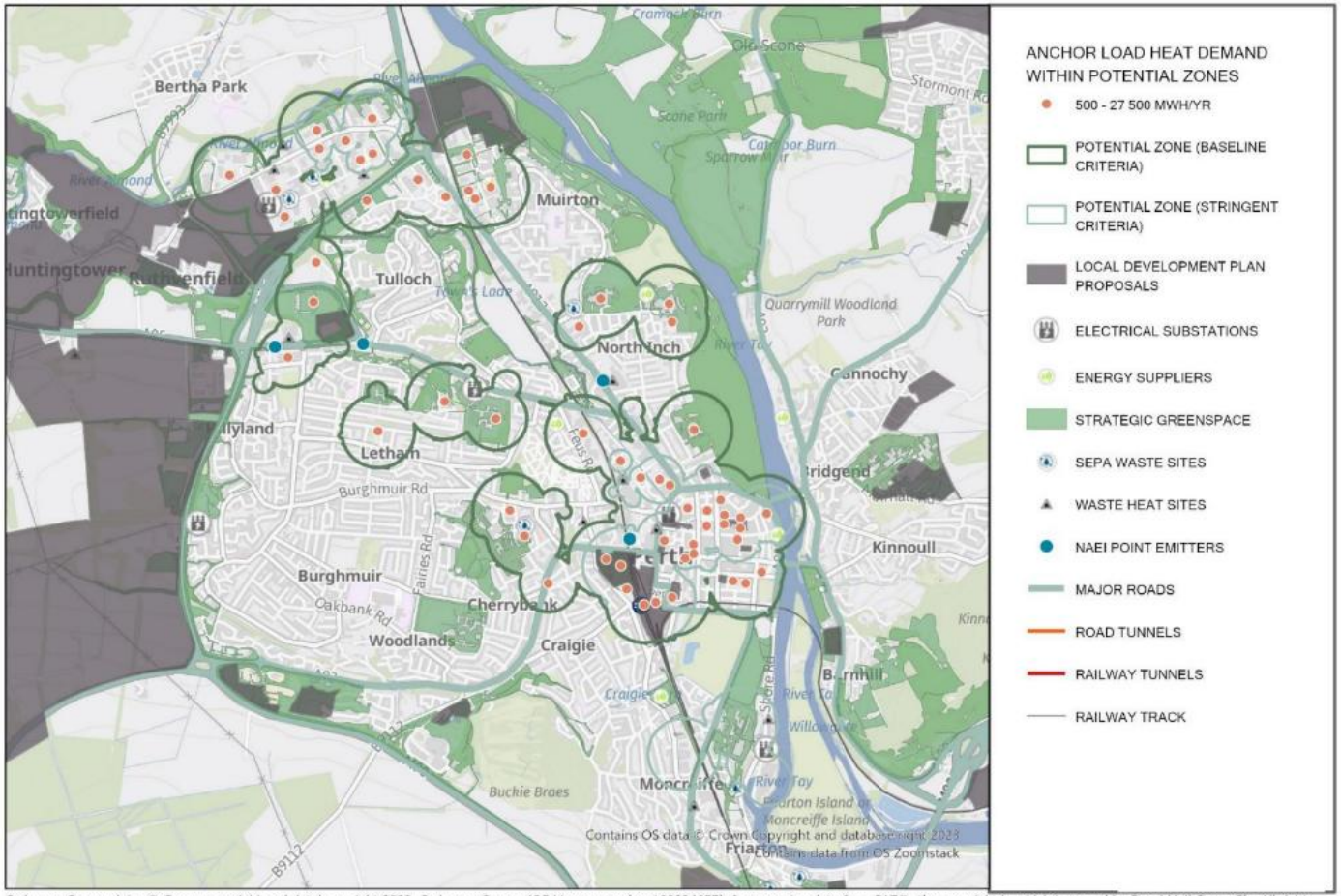


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Figure 8 Indicative Blairgowrie Heat Network Zone

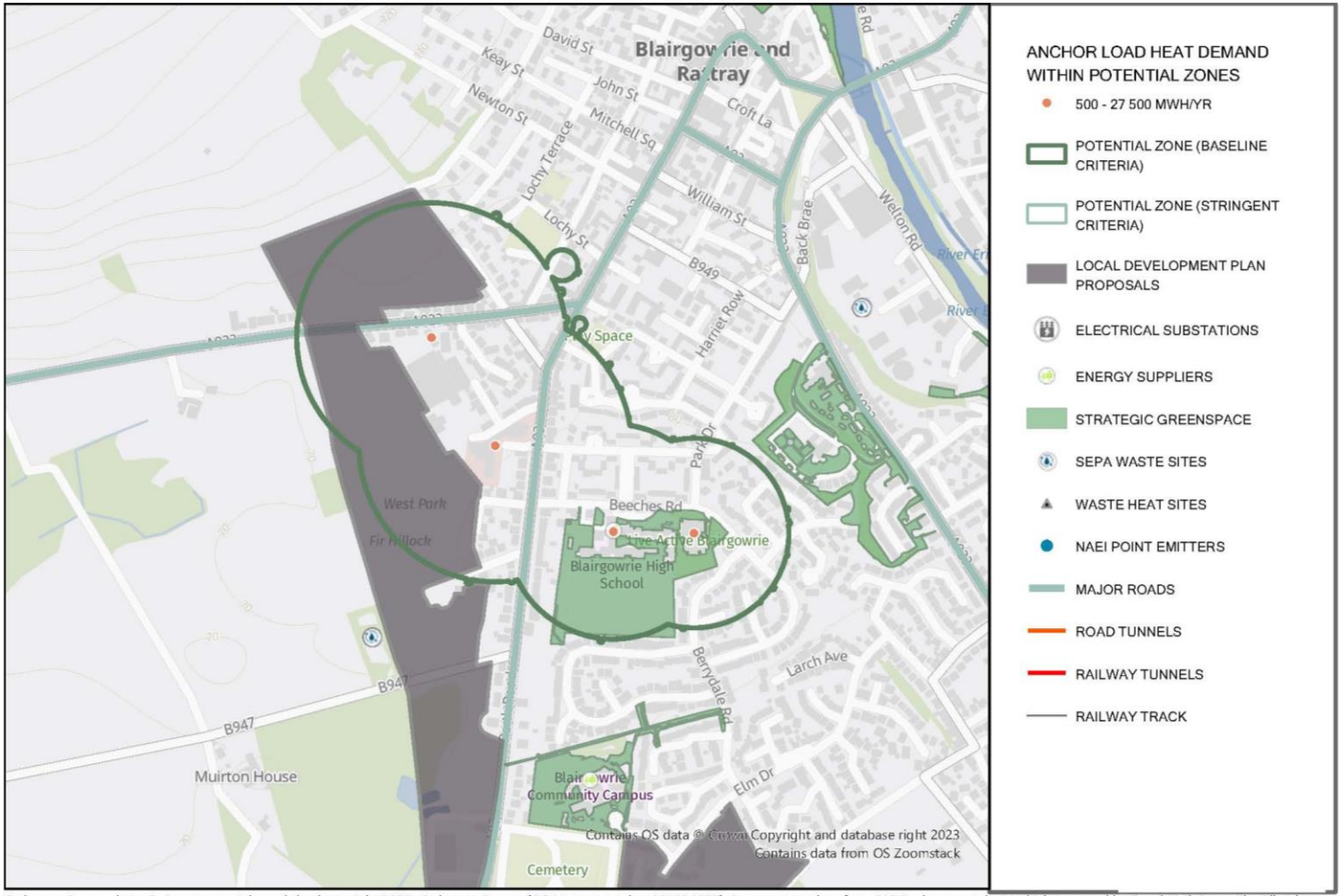

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Figure 9 Indicative Kinross Heat Network Zone

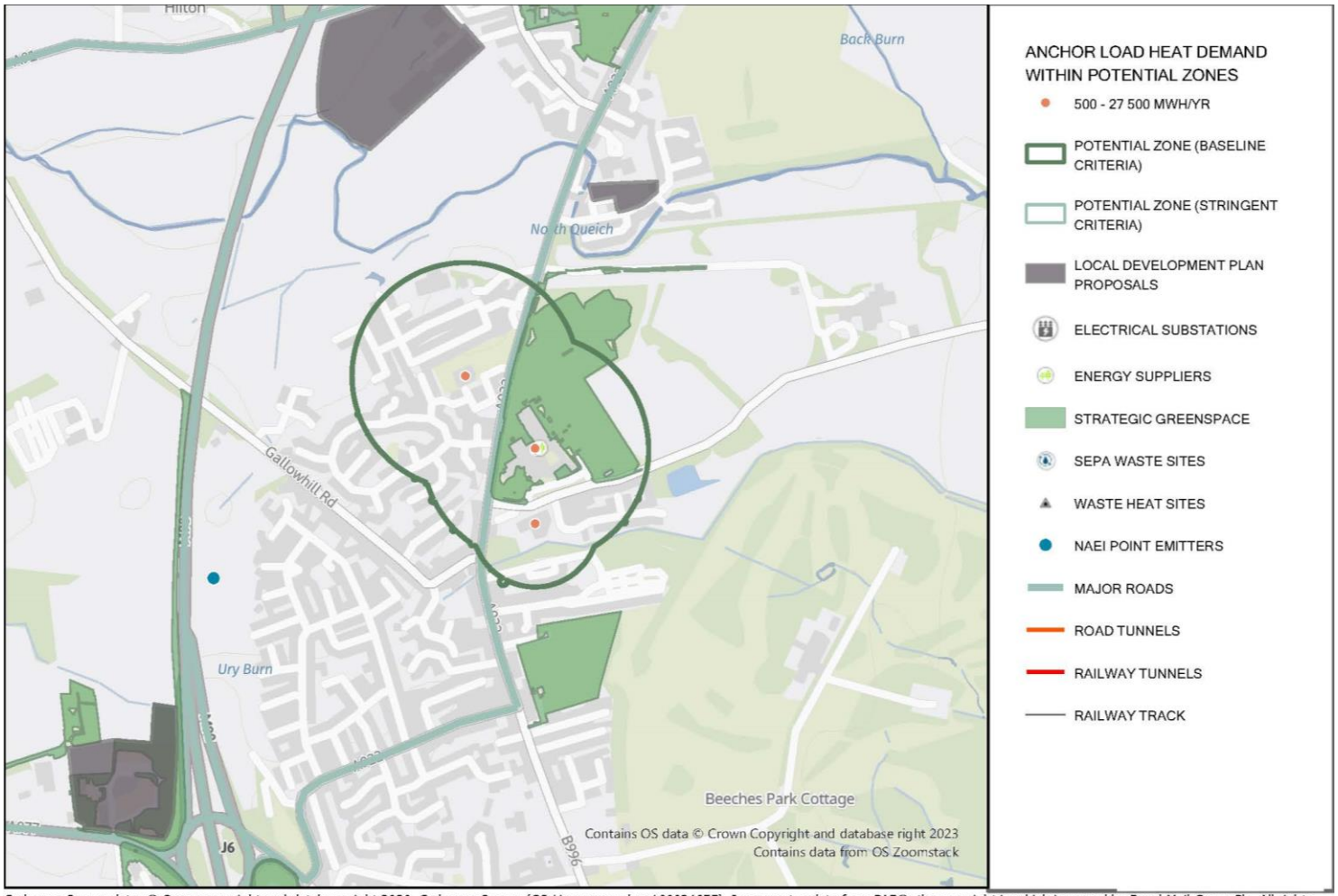
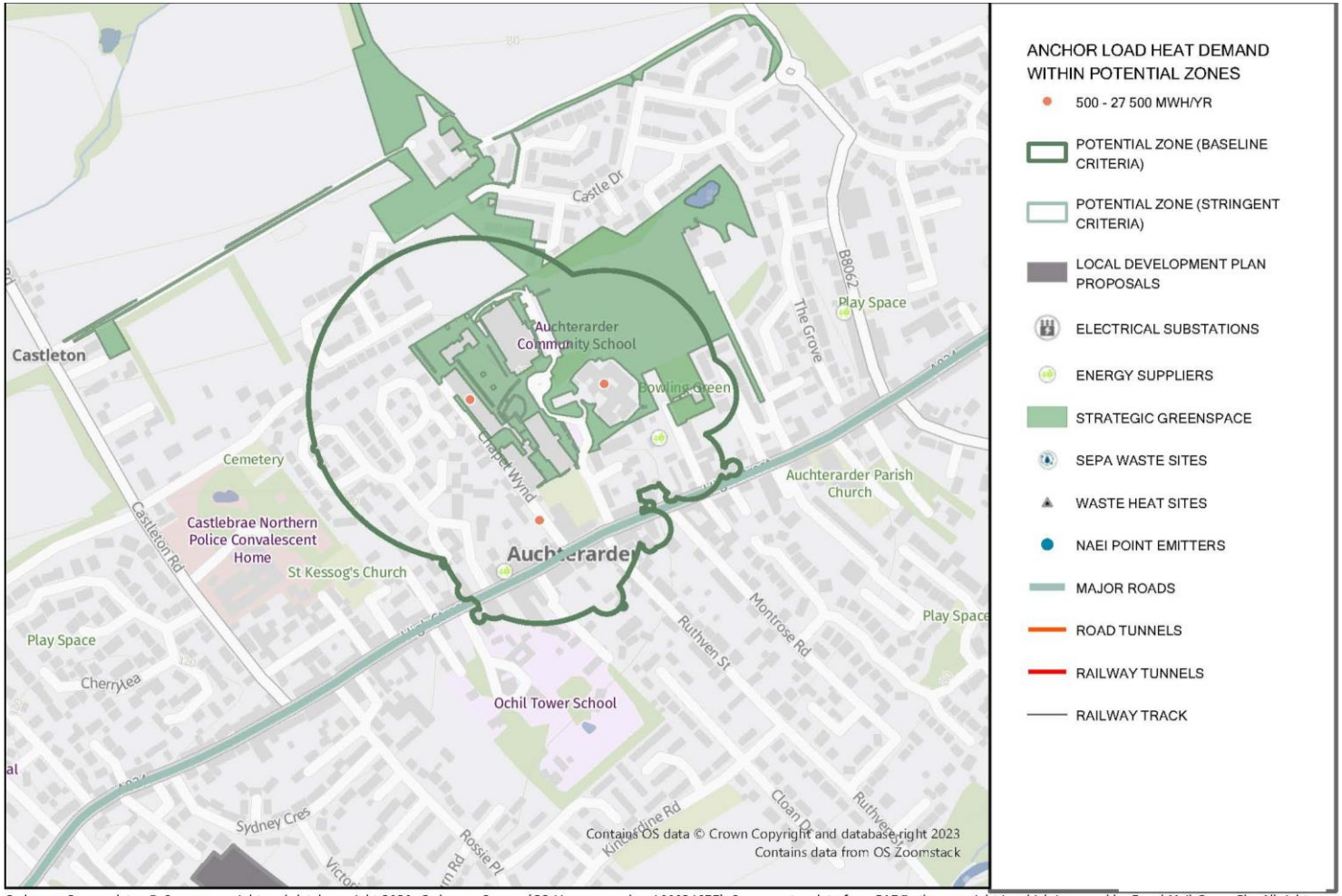


Figure 10 Indicative Auchterarder Heat Network Zone



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Perth City Centre Heat Network

Perth's heat demand using the Scotland Heat Map, indicated a total heat demand of 0.5 TWh/yr. For comparison, the City of Edinburgh has a total heat demand of 5.4 TWh/yr. Much of Perth's heat demand is concentrated in smaller areas of the city, providing areas of high density of heat that present a significant opportunity for the deployment of a large-scale district heating system over time. The most significant opportunity for heat networks lies in Perth, where a feasibility study for a Perth City Centre heat network has recently been completed. It was proposed that this network could be supplied by a closed loop ground source heat pump located to supply heat to 15 core sites. Additional buildings to the south and west of the proposed route (e.g., Dewars Centre, Perth Leisure Centre and social housing) were identified as potential future connections. Other heat sources such as geothermal or the River Tay could also be explored.

The development of a commercial delivery model or strategic energy partnership for the city centre provides an opportunity to inform how this, and other low carbon opportunities, could be delivered. The establishment of an energy partnership may help to unlock heat network development in those areas of Perth and Kinross that are less commercially attractive but could benefit the most from what district heating can offer. Additionally, an energy partnership may help to unlock delivery of the wider LHEES and LAEP outcomes.

Blairgowrie, Kinross and Auchterarder Potential Heat Networks

Blairgowrie: A Baseline Zone has been identified in Blairgowrie anchored by loads at the Blairgowrie Community Hospital, Blairgowrie High School and Live Active Blairgowrie. Proctor Production Facilities and Blairgowrie Community Campus are located to the north and south of the zone respectively. The zone is adjacent to a development site identified for mixed-use development.

Kinross: A Baseline Zone has been identified in Kinross anchored by loads at the Live Active Loch Leven Leisure Centre, Kinross High School, Loch Leven Community Campus and Loch Leven Health Centre.

Auchterarder: A Baseline Zone has been identified in Auchterarder anchored by loads at the Auchterarder Community School and Parkdale Care Home (Council owned). The zone also includes Auchterarder Library and Aytoun Hall. There is a moderate proportion of social housing (33%) and fuel poverty probability (28%) in the zone.

Ground source heat pumps have been identified as the likely heat source for all three zones.

10.5 Strategic Priority 1b: "Delivering decarbonised heat within a transitioning energy system - Heat Pumps"

For the majority of Perth and Kinross properties that fall outside of potential heat network zones, heat pumps will be the recommended low carbon heating source. However, we understand that this would be challenging in terms of costs and public perception and will therefore will need to manage carefully and where and when it makes sense.

What is a Heat Pump? A heat pump captures heat from outside – either from the air or ground - and moves it into your home. The heat pump uses electricity to do this, but the heat energy delivered to your home is much more than the electrical energy used to power the system. In well-insulated homes, heat pumps can be comparable in operating costs to gas and lower than oil. As they produce heat at lower temperatures than gas or oil-fired systems, their relative cost increases for poorly insulated homes.

On-gas and off-gas grid properties have been grouped into four categories depending on their heat pump suitability as shown in Table 8. It shows that over 28,500 properties in Perth and Kinross are potentially highly suitable for a heat pump. At 2023 energy prices, the potential for energy cost savings by switching to heat pumps for well insulated off-gas households is significantly more than for on-gas households.

Table 8 Heat Pump Suitability Classification

Heat Pump Suitability Category	On-gas properties in Perth and Kinross	Off-gas properties in Perth and Kinross
Category 0 - Already have a low or zero emission heating system.	1% (314)	5% (1,472)
Category 1 Considered highly suitable for a heat pump installation (i.e., well insulated property with a wet system).	49% (23,938)	18% (4,851)

Category 2 - Require moderate fabric upgrades and/ or the addition of a wet system	18% (8,836)	34% (9,522)
Category 3 - *Either requires significant fabric upgrades) or more suited to other low or zero emission heating system (i.e., biomass, direct electric or electric storage).*	*32%* *(15,559)*	*43%* *(11,904)*

Off-gas social housing energy efficiency Category 1 suitable for heat pump

By prioritizing heat pump deployment in social housing properties that are off-gas, especially those heated by inefficient, carbon intensive systems such as LPG and oil boiler there is potential for significant fuel poverty and carbon reduction.

Dunkeld, Crieff, Blairgowrie and Rattray, and **Glenfarg** emerge as priority regions for heat pump deployment in social housing properties not connected to the gas network. These areas host a substantial number of social housing properties that are readily suitable for heat pump retrofitting and display high substation demand headroom[2]. In addition, areas around **Crieff, Blairgowrie and Rattray** and **Perth** have a higher number of social housing properties connected to the gas networks, which are also suitable for heat pump deployment.

Off-gas private homes suitable for heat pump retrofit

Crieff, Dunkeld, Blairgowrie and Rattray, Glenfarg, Powmill have significant potential for heat pump deployment in privately owned properties that are off-gas. **Crieff, Perth** and **Blairgowrie and Rattray** have higher suitability for heat pump installation amongst on-gas, privately owned properties. However, retrofitting these properties can prove to be challenging as the responsibility of installing the heat pump falls on the property owner. **Kinross and Milnathort**, and **Coupar Angus** have high concentrations of properties that are heat pump ready however have limited spare grid capacity posing a risk to deployment.

[2] Demand headroom is the gap between the rating of the electricity network to supply electrical demand and the actual demand in that part of the network.

The Council will continue to work with SSEN to align investment planning in these areas. Work being completed for the associated LAEP will undertake modelling to explore the impact of low-carbon technology roll out on the area's whole energy system in different demand scenarios.

Social housing that requires energy efficiency improvements to enable suitability for heat pumps

The areas of **Dunkeld, Crieff, Blairgowrie** and **Rattray, Perth, Bridge of Earn** and, **Glenfarg**, have been identified as having both spare network capacity and a high concentration of social housing with secondary potential for heat pumps - requiring moderate fabric upgrades and/or the addition of a wet heating system to be heat pump ready (i.e., Category 2). The same areas are suitable for retrofit for heat pumps on-gas apart from Dunkeld. Privately owned properties with secondary potential for heat pump retrofit and spare grid capacity are located in these same areas, however actioning retrofit in this sector is made more challenging as the responsibility lies with owner-occupiers and landlords.

A full summary of potential heat pump and secondary heat pump deployment areas can be viewed here and is supported by web mapping here to explore the full range of opportunities available in further detail.

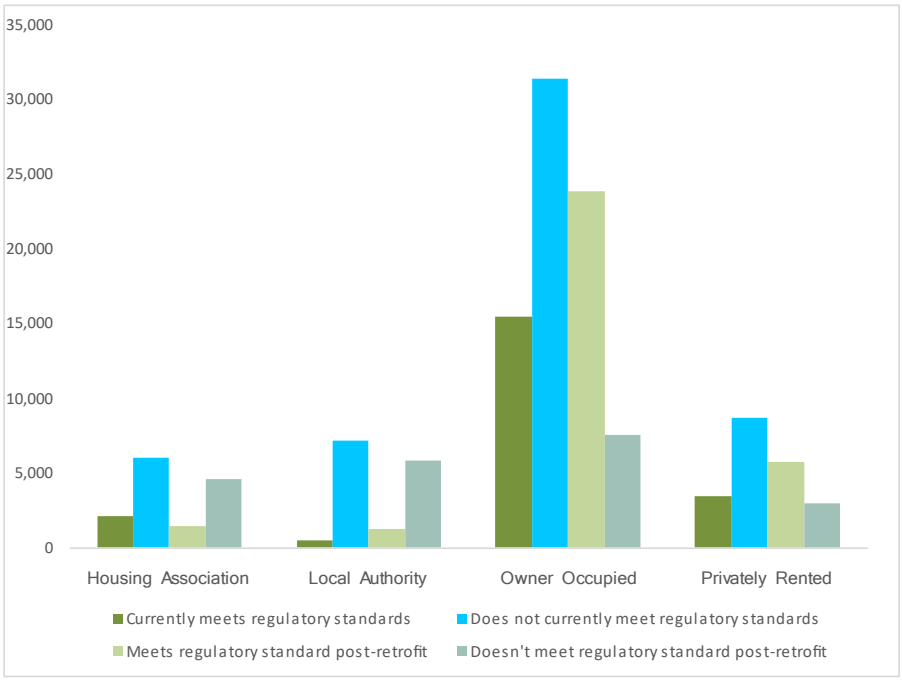
10.6 Strategic Priority 2a: "Improving buildings' energy efficiency to meet regulatory standards"

Regulatory targets for Energy Efficiency are:

- By 2026 All Social Housing EPC D and EPC B by 2032
- By 2028 Private Rented Sector EPC C
- By 2033, all homes have the equivalent of EPC C.

All domestic properties in Perth and Kinross were modelled using the regulatory scenario produced by the Energy Savings Trust in their PEAT model, alongside specific tools developed for LHEES. Figure 11 outlines the current status and post-retrofit status of properties according to the PEAT model. It demonstrates that there are many hard-to-treat properties, that even after implementing the full suite of standard retrofitting measures, would still not comply with regulatory requirements.

Figure 11 Predicted regulatory compliance pre- and post-retrofitting status of domestic properties in Perth & Kinross



Areas with concentrations of social housing having poorer energy efficiency in **Crieff and Pitlochry**, could be strategically targeted for cost effective "quick wins" to meet regulatory targets for 2026 and 2033, as the total cost of interventions to meet regulatory standards is low.

Challenges for the private sector are present across the area, where many privately owned properties have high intervention costs to meet EPC C targets, which may not be perceived as an attractive investment for property owners.

Areas where substantial energy and CO2 emissions savings can be achieved at the lowest cost are limited and concentrated in **Bridge of Earn and Abernethy, North Muirton and Old Scone, Guildtown, Balbeggie** and **St Madoes, Errol and Inchture, and Coupar Angus and Meigle**

These areas represent immediate opportunities for cost-effective interventions and could also be used to plan works to take advantage of economies of scale, by strategically retrofitting nearby buildings simultaneously including privately owned homes, and in alignment with the Council decarbonisation assessment. This coordinated approach may lead to cost efficiencies and drive down the overall expenses associated with energy efficiency upgrades.

Non-domestic buildings that require retrofit to meet regulatory targets

Non-domestic buildings in areas across **Glenavon and Glendevon** have been identified as high potential for heat demand savings in non-domestic buildings with lower cost retrofit interventions. There are several hotels around these areas, which present opportunities for cost-effective retrofitting. However, retrofitting hotels will present certain challenges to owners, primarily due to restrictions imposed by the building's age and the need to preserve the architectural integrity.

Private ownership limits the Council's authority over decarbonisation plans and strategies beyond legislation. Engaging with the private sector around their existing decarbonisation plans can facilitate collaboration between the public and private sectors and align low carbon planning. Additionally, the Council can play a role in promoting awareness of funding incentives available for small and medium-sized enterprises (SMEs). For instance, through the Resource Efficient SME Loan, SMEs can access an interest-free loan of up to £100,000, specifically designed to support energy efficiency improvements.

Continued engagement with the private sector, supported by the Council, would help to identify barriers associated with building retrofit and help to provide tailored solutions aimed at addressing the specific challenges faced by non-domestic building owners.

10.7 Strategic Priority 2b: "Improving buildings' energy efficiency aiming for affordable warmth"

To assess at a strategic level where poor energy efficiency is believed to be driving fuel poverty (i.e., where there is a greater impact of poor energy efficiency on fuel poverty) an approach was followed that considers three different building fabric criteria - low loft insulation, uninsulated walls, and single glazed windows as indicators of poor energy efficiency, alongside fuel poverty with specific weightings.

Energy efficiency, which acts as a driver of fuel poverty, is highest in areas around **Pitlochry, Aberfeldy, Crieff, Dunkeld, Perth and Blairgowrie & Rattray** emphasising the need for intervention to address fuel poverty in these regions.

When comparing areas with high energy efficiency driven fuel poverty with properties requiring lower cost retrofit options, the areas of **Pitlochry, Comrie, Gilmerton and St Fillans, Blair Atholl, Strathardle and Glenshee, and areas of Perth** showed the greatest opportunity.

Targeting these areas though tailored awareness campaigns about available funding to support fuel-poor households, such as the Energy Company Obligation (ECO4), which provides grants for energy efficiency upgrades funded by the applicant's energy supplier, is critical. By disseminating information about these financial support options, the Council can encourage greater participation in retrofitting initiatives. Furthermore, recognising the unique needs of vulnerable individuals, the Council should continue to provide support services and guidance to households that require assistance with the application process through organisations such as the HEAT Project and Scarf and provide information to Elected Members to disseminate. This approach ensures that those who may face challenges in navigating the application process receive the necessary help to access available funding.

Social housing properties in **Crieff, Pitlochry and Blairgowrie and Rattray** are likely to experience a greater reduction in fuel poor households due to the implementation of low-cost retrofit interventions. Local authority owned properties in these areas offer "quick win" opportunities for the Council, as they provide substantial impact in terms of reducing fuel poverty, while requiring relatively lower financial investment compared to other locations.

Retrofitting social housing properties presents several challenges, primarily due to the occupancy of fuel-poor, vulnerable tenants. Access to the property can be limited as tenants might face difficulties in vacating their homes, and tenants may be resistant to changes to their home. To address these complexities, a person-centred retrofit approach should be implemented during the early planning stages.

Collaborating with local financial institutions, building societies, and mortgage providers can open possibilities for funding solutions aimed at making retrofitting more accessible to homeowners. One promising solution to consider is Property Linked Finance, which has the potential to cover up to 100% of intervention costs. The uniqueness of this financing option lies in its linkage to the property rather than the individual owner, which can offer a more inclusive financing opportunity for homeowners interested in retrofitting their homes.

11. DELIVERY PLAN

Accompanying our Strategy is our Delivery Plan. This has been developed in partnership with key stakeholders and provides a strong basis for action for local communities, government, investors, developers and wider stakeholders, pinpointing areas for targeted intervention and early, low-regrets measures in the near to medium term. Due to the dynamic nature of this plan, and rapidly evolving regulatory, funding and policy landscapes, it is intended to be kept as a live document and published by February 2024 as a live plan in a digital planning platform being developed through Project RESOP (Regional Energy System Optimisation Planning) by Scottish and Southern Electricity Networks (SSEN) under Ofgem's Network Innovation Allowance.

11.1 Delivery Plan Priorities

The LHEES Guidance outlines that the LHEES scope should be framed around the 'LHEES Considerations', outlined earlier in this document. LHEES priorities are also shaped by the local context and as such the delivery of the LHEES will be supported through targeting areas and related actions linked to our local strategic priorities, supported by key delivery mechanisms and embedded in a whole energy system approach.

For each LHEES consideration, strategic priorities and areas have been identified to target both national and local objectives longer term. At a more granular level, delivery priorities and areas have been identified to define potential decarbonisation pathways and pinpoint areas for near term, low-regret actions to support LHEES delivery. Delivery areas are at a higher granularity than strategic areas (i.e., data zones) and set out clusters of buildings, such as postcodes, where potential solution(s) can be targeted to meet our strategic vision and priorities.

The LHEES Delivery Plan will focus on these areas to take forward actions in the near term that are within the remit of the Scottish Government, local authorities and wider partners to deliver. Proposed Delivery Plan priorities for the Perth and Kinross' first LHEES are centred around the Council and our partners local strategic priorities identified through a series of workshops and engagement sessions as illustrated in Table 9.

Table 9 LHEES Strategic and Delivery Plan Priorities

NATIONAL LHEES CONSIDERATIONS	PERTH AND KINROSS STRATEGIC PRIORITIES	PROPOSED PERTH AND KINROSS DELIVERY PRIORITIES
Heat networks	1. Delivering decarbonised heat within a transitioning energy system	1. Potential heat network zones
Off-gas heat decarbonisation	1. Delivering decarbonised heat within a transitioning energy system	2. Off-gas social housing suitable for heat pump retrofit 3. Off-gas private homes suitable for heat pump retrofit
Off-gas and on-gas heat decarbonisation	1. Delivering decarbonised heat within a transitioning energy system	4. Social housing that requires energy efficiency improvements to enable suitability for heat pump
Energy efficiency and energy efficiency as a driver of fuel poverty	2. Improving buildings' energy efficiency to meet regulatory standards	5. Social housing that does not meet regulations (e.g., below EPC B) identified for energy efficiency retrofit 6. Owner occupied properties that do not meet targets (e.g., below EPC C) 7. Owner-occupied properties that do not meet targets (e.g., below EPC C) AND potential suitability for HEEPS:ABS funding 8. Owner-occupied properties below EPC Band E

Delivery Plan priorities are the starting point for identifying projects and actions to include in the Delivery Plan. Each Delivery Plan priority may result in several delivery areas (e.g., clusters of buildings at neighbourhood or postcode level) for targeted interventions. Potential actions range from prioritising retrofit of our Council assets, wider social housing joint working to support heat pump roll out, and engagement and awareness raising with communities and the private sector as detailed below.

11.2 Delivery Plan Area Criteria

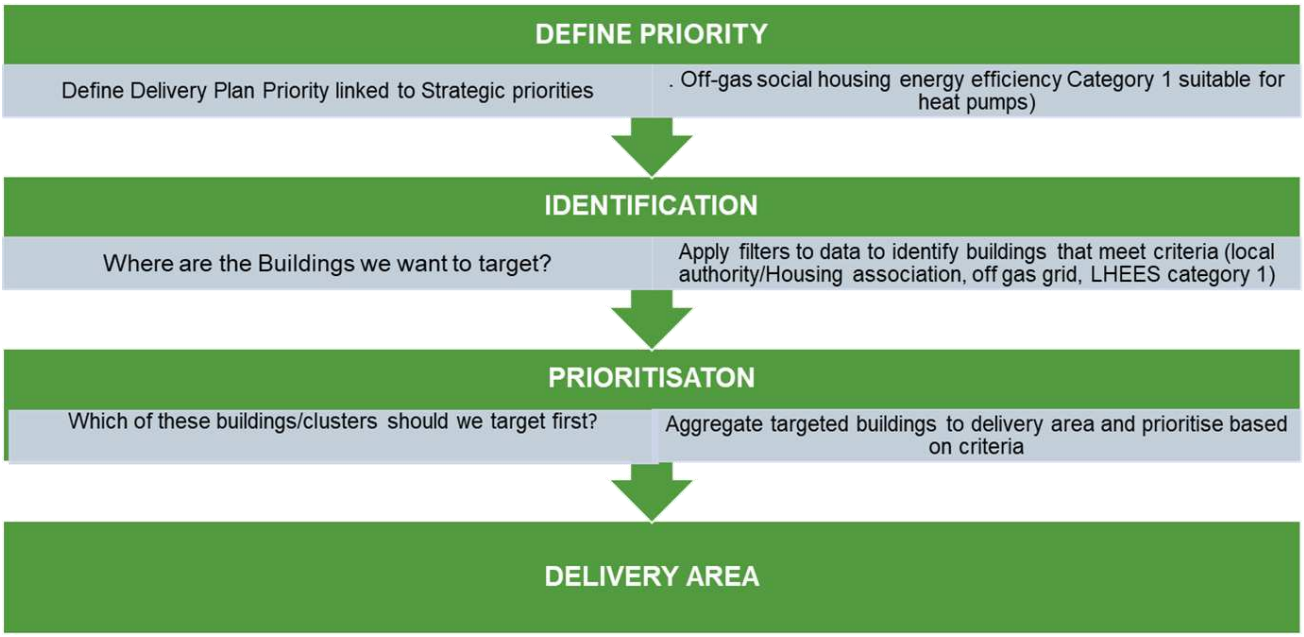
Our delivery priorities are shaped by our strategic priorities and associated stakeholder priorities. The LHEES evidence base, including consideration of grid capacity, has been analysed to target properties which match these priorities.

The key criteria used to develop delivery plan areas are as follows:

- Meeting regulatory targets - change in EPC, Energy savings (kWh), CO2 reduction (tCO2e)
- Fuel Poverty - fuel poverty change (%), Energy bill change
- Deliverable, technically feasible and evidence based - grid capacity, cost of intervention, type of wall insulation, etc.
- Potential funding availability (e.g., HEEPS-ABS eligible properties)
- Interventions that are already beneficial and no/low-regret (off-gas heat pumps, heat networks)
- Ability to influence.

The diagram in Figure 12 sets out an example of how the criteria will be used to identify Delivery Plan areas.

Figure 12 Example of how delivery plan area criteria will be applied to identify delivery plan focus areas



11.3 LHEES/LAEP Live Delivery Plan

The Scottish Government recognises that LHEES will evolve with the introduction of future standards and regulation, as well as the introduction of new delivery and funding programmes. This first LHEES is largely focussed on delivery within the scope of the current and near future funding, regulatory and policy landscape. For example, supporting the delivery of existing funding (e.g., HEEPS ABS, ECO4); while providing a pathway to meeting medium to long-term targets and objectives.

The LHEES Delivery Plan is intended to provide a high-level evidence base and a live tool for Perth & Kinross Council and partners to identify interventions across a range of technical solutions and funding streams.

Live Delivery Plans will be further informed and be informed by our Local Area Energy Plan (LAEP) providing a single, integrated process to consider the whole energy system alongside heat decarbonisation. The LAEP will develop a model to test a range of build-out rates from 2023 to deliver the future system through various target years (e.g., 2030, 2033 or 2045, or any year in-between).

The LAEP deployment model will incorporate outputs of the policies and strategies review, building level demand pathways, heat network zoning and include an assessment of the

alignment with key relevant targets and milestones across heat, transport and supply and transmission. Multiple scenarios for the future energy system demand, generation, distribution and storage, will help us mitigate risk by testing the potential limits of the uncertain aspects of the energy system. The Council area will be split into zones based on primary substation locations. Data on both demand and supply for different parts of the energy system will be aggregated for each zone and modelling will optimise the energy mix for each of these zones.

11.4 Key supporting delivery mechanisms

To deliver the LHEES priorities, key supporting mechanisms and programmes have been identified as follows:

Taking a Whole Energy Systems Approach

Through the development of the LAEP and a collection of complementary initiatives, the Council is taking a whole systems energy approach to the development and implementation of the LHEES from generation through to demand.

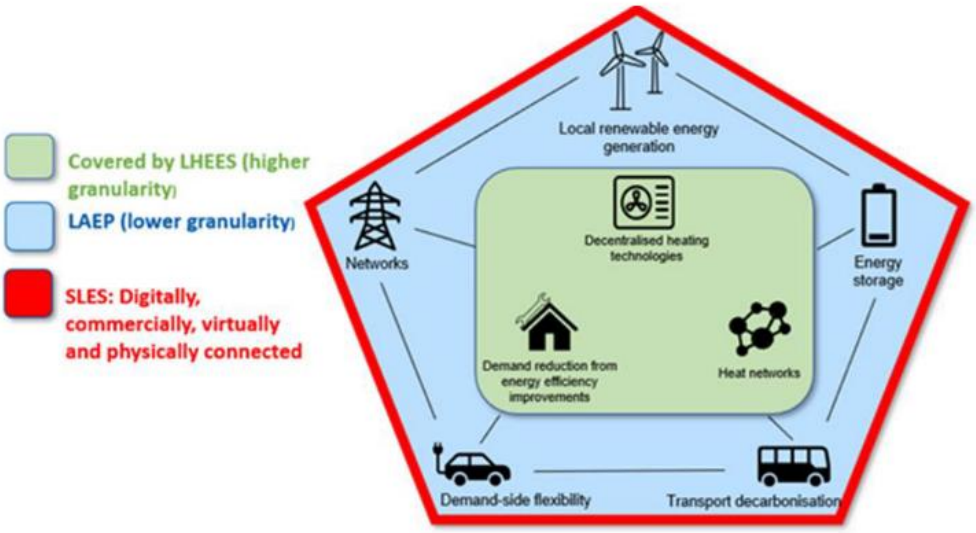
Key on-going areas of work to support this approach include:

- ***Project RESOP (Regional Energy System Optimisation Planning)*** - RESOP is a public/private collaboration led by SSEN that takes a 'whole system' approach, by drawing together data on building suitability for heat decarbonisation (heat pumps and heat networks), building fabric retrofit and wider energy system demand (e.g. Electric Vehicles) and generation considerations into a single tool (LAEP+) that can be used to plan retrofit and roll out of low carbon technologies and will facilitate collaboration between network operators, local authorities and other energy transition stakeholders to achieve our strategic priorities and outcomes.
- ***Council Estate Decarbonisation Planning*** - The Council is currently undertaking work to design and deliver a major programme of retrofitting both for its domestic and non-domestic building stock, focusing on how decarbonising projects should be prioritised. The work will consider detailed programming, risk analysis, supply chain capacity and the Council's operating model, to identify how the Council could progress and where critical gaps exist (such as in the local retrofit supply

chain) that the Council can start to influence in preparation for major retrofit projects.

- ***Smart Local Energy Systems (SLES)*** **-** The Council has developed a toolkit that will allow us to filter projects and develop business cases to triage delivery actions and areas into a pipeline of investable energy projects based on a range of priorities. This will lead to the development of an investment programme enabling Smart Local Energy Systems.

Figure 13 Whole energy systems approach



Developing green skills and the capacity of the supply chain

There are now numerous studies and policy documents that point to the opportunity for green jobs in the future. In Scotland the National Strategy for Economic Transformation published in March 2022 set out a number of Actions including:

- working collaboratively with employers and unions to increase investment in upskilling and retraining to better meet the needs of employers and employees in Scotland's transition to net zero
- supporting and incentivising employees, and their employers, to invest in skills and training throughout their working lives
- expanding Scotland's available talent pool, at all skills levels, to give employers the skills pipeline they need to take advantage of opportunities
- implementing the Climate Emergency Skills Action Plan to align Scotland's skills system with business needs to reach net zero

- implementing the next phase of the Green Jobs Workforce Academy and launching a new skills guarantee for workers in carbon intensive industries
- developing proposals for a national digital academy to open up access to a range of subjects for all learners

The priority in decarbonising Scotland's domestic heat by retrofitting homes and improving energy efficiency will dramatically reduce consumption and hence bills, regardless of the ultimate source of heat. Thanks to boiler or heat pump efficiency improvements, any of the options will deliver significantly cheaper heat for households than older inefficient boilers or electric radiators.

The STUC report on Green Jobs in Scotland estimated - with the right policies and funding in place - Scotland could see job creation in the region of 156,000 - 367,000 jobs. Perth & Kinross is identified as one of the geographical hubs for energy development and may be well placed for energy related jobs because of the presence of SSE (see picture be below).

		Industry	Jobs	% of jobs in Scotland	Key workplace
1	ABERDEEN CITY	Extraction of crude petroleum and natural gas	7000	80.4%	
2	PERTH & KINROSS	Production of electricity	2000	35.7%	SSE
3	GLASGOW CITY	Manufacture of gas; distribution of gaseous fuels through mains	1750	25.9%	
4	CITY OF EDINBURGH	Manufacture of gas; distribution of gaseous fuels through mains	1500	28.4%	
5	SOUTH LANARKSHIRE	Distribution of electricity	1500	28.4%	
6	NORTH LANARKSHIRE	Distribution of electricity	1500	22.2%	
7	FALKIRK	Manufacture of refined petroleum products	1000	71.9%	Grangemouth Refinery

Source:
ONS Business Register and Employment Survey; Transition Economics analysis

The shift away from fossil fuels for electricity and heating means that there will be increasing demand for more electricians, electrical engineers. Employers point towards specific skills and understanding in fields such as insulation, Passivhaus standards, maintenance of low carbon tech (including district heating, EV charge points, heat pumps, solar DC systems, etc.)

Already there are large-scale programmes of retrofitting, with domestic gas boilers being replaced with air- or ground-source heat pumps. From 2025, gas and oil boilers will not be permitted in newbuild homes. The H100 Fife project[3] is a demonstrator project providing green hydrogen through a new gas network to around 300 households in Buckhaven and Dunbeath.

This means that the incumbent workforce will require to develop (more) electrical skills to complement existing gas engineering or plumbing skills. This will not only be for the installation of low carbon heating systems, but the replacement of electricity distribution boards in domestic and commercial properties where such heating systems are retrofitted. However, evidence from consultations suggests that these skills are already in great demand, with evidence of companies struggling to fill positions as a result of short supply. Nevertheless, there remains a significant challenge in fully understanding skills demand across region, by sector and for Clean Growth as a whole. Business engagement is a critical factor here. There is limited intelligence, poor channels of communication on need where there is engagement, and no smooth engagement with businesses. This serves to constrain education and training providers' ability to respond to business skills need effectively. There is a clear requirement to engage with businesses to drive participation in and contribute to the discourse on green jobs, and to stimulate meaningful conversations around skills need in this area. This is particularly important in light of some of the findings of the recently published Independent Review of the Skills Delivery Landscape. There is a need for growing capacity in the region's education and training system. This is not just for volume, but for effectiveness, responsiveness and connectivity between education and training providers and the Net Zero/Clean Growth business base.

Perth & Kinross Council, with stakeholders, has identified the need to assess skills provision and support providers as well as the local supply chain to meet the demand arising from heat transition and energy efficiency works, operations and maintenance.

Working in partnership with communities to build community wealth and wellbeing

Perth & Kinross Council is committed to work in partnership with communities through the Perth and Kinross Offer and for communities to develop solutions locally shared and owned.

[3] https://www.h100fife.co.uk/

Communities could take advantage of heat transition and energy efficiency opportunities and build community wealth and wellbeing. This could cover energy production, storage or distribution as well as purchasing goods or services. Perth & Kinross Council with stakeholders has identified the need to evaluate mechanisms to support communities in achieving such aim.

There are several on-going projects across Perth & Kinross that are either community-led or community-focused that support the heat and energy transformation. A collection of these is listed in the Table below.

Theme	On-going projects
Home Energy Advice to Residents	The HEAT Project, SCARF, Warm Connections, Citizens Advice Bureau all provide free home energy advice
Community Energy Projects	Rumbling Bridge Hydro, Welton of Creuchies Wind Farm, Comrie Croft Smart Energy Grid Demonstrator Project are a sample of a few of the several on-going community energy projects
Support businesses to address energy efficiency and decarbonisation	Green Business Grants from PKC provide funding for businesses, The HEAT Project provides free energy advice to SMEs
Community decarbonisation	Several groups are focused on decarbonising their communities and community assets - examples include CATCH - Loch Leven and the Blairgowrie and Rattray Development Trust

Mobilising partners and public and private investments for projects

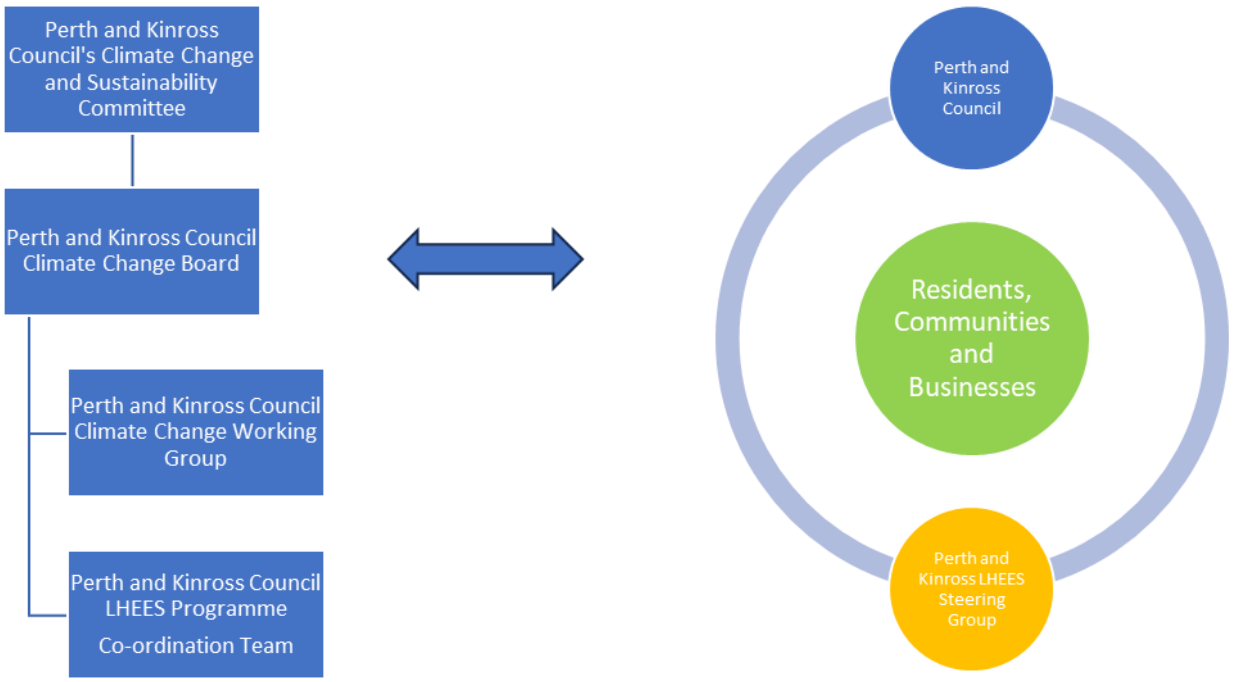
Perth & Kinross Council, with stakeholders, has identified the need to evaluate a possible Strategic Energy Partnership to unlock delivery of, though potentially not limited to, heat networks. An energy partnership would be a legally defined, collaborative arrangement between Perth & Kinross Council and an external organisation to bring capital investment and delivery

capability into large energy-related projects. The projects taken forward by the energy partnership could deliver on local priorities relating to carbon reduction, fuel poverty, and energy resilience. The Council is also considering the scope of any partnership proposed and will assess the potential for an energy partnership to be the leading body in the delivery of the wider net zero agenda for Perth and Kinross rather than focused solely on heat networks. This could mean mobilising other public/social partner organisations to aggregate demand and programmes. Development of this is a key action in the LHEES Delivery Plan and all options relating to procurement route, governance structures, control versus risk arrangements and co-investment would be explored.

12. GOVERNANCE AND MONITORING

12.1 Governance

The delivery and review of Perth and Kinross LHEES Strategy and Delivery Plan will be supported by the following Council's Governance arrangements and relationships:



Perth and Kinross Council's Climate Change and Sustainability Committee will provide scrutiny, assess performance and consider LHEES Strategy and Delivery Plan reviews. The nomination of an elected member or elected members as Champions will be explored.

Perth and Kinross Council Climate Board will provide strategic directions and monitor progress and performance. An Executive Sponsor and a Senior Responsible Owner will be identified.

Perth and Kinross Council Climate Change Working Groups and external partners will deliver actions via identified project managers and agreed workstreams.

Perth and Kinross Council LHEES co-ordination team will ensure coordination and monitoring of Delivery Plan actions and will report to the Climate Change Board.

12.2 Monitoring

Perth and Kinross Council LHEES co-ordination team's main tasks will include:

- Data: update data and support access to data to all stakeholders
- Communication and engagement: co-ordinate communication and engagement plan
- Risk & Monitoring: develop risk register and produce monitoring reports
- Reviews: prepare and co-ordinate LHEES Strategy and Delivery Plan reviews
- Best practices and training: provide support to project managers in the form of templates, best practices and training.
- LHEES Steering Group: coordinate and support LHEES Steering Group

Monitoring reports will be produced every quarter for the Steering Group and the Board and annually for the Climate Change & Sustainability Committee with a full review of the Strategy and Delivery Plan every 5 years. The next full review will be in 2029. A Risk register will be developed and has been included as one of the early actions of the Delivery Plan.

Engagement will be maintained and developed with key stakeholders through the LHEES Steering Group and between the Steering Group, Perth and Kinross Council and our residents, communities and businesses to achieve a successful LHEES Strategy and Delivery plan delivery. A Communication and Engagement Plan will be developed by the Steering Group and has been included as one of the early actions of the Delivery Plan. The Plan will set out how the Steering Group will conduct regular consultation and engagement with stakeholders. Engagement with residents, communities, businesses and private landlords would be particularly important. It will also ensure there is awareness of the key heat transition and energy efficiency priorities for Perth and Kinross until 2029.

13. GLOSSARY

13.1 Abbreviations

Acronym	Description
EES	Energy Efficient Scotland
EESSH	Energy Efficiency Standard for Social Housing
EPC	Energy Performance Certificate
EST	Energy Saving Trust
GIS	Geographic Information System
HEEPS:ABS	Home Energy Efficiency Programmes for Scotland: Area Based Schemes
HIB	Heat in Buildings
IZ	Intermediate Zone
LA	Local Authority
LAEP	Local Area Energy Planning
LHEES	Local Heat and Energy Efficiency Strategy
LPG	Liquefied Petroleum Gas
mxd	Map Exchange Document
PEAT	Portfolio Energy Analysis Tool
SAP	Standard Assessment Procedure
ToC	Table of Contents
UPRN	Unique Property Reference Number

13.2 Terms

Terms	Description
Baselining	Baselining is the purpose of understanding at local authority or strategic level, the current status of the buildings against the LHEES Considerations, Targets and Indicators.
Building-level Pathway	As part of LHEES Stage 5, a building-level pathway is the outcome of the assessment undertaken using PEAT. It provides the likely energy efficiency retrofit technologies, as well as the low carbon heating system (where applicable) to support building level decarbonisation.
Criteria	Criteria are the settings applied to the Indicators for each Consideration in order to support Baselining, Strategic Zoning and the identification of Delivery Areas. An example of Criteria is a simple “no” applied to the Indicator of “wall insulation (Y/N)” to identify properties with uninsulated walls. Another example is the definition of an “anchor load” within the Heat Networks analysis, which applies a minimum threshold to the “heat demand” Indicator. The LHEES methodology provides a set of default Criteria that local authorities may wish to use, with flexibility to update and augment these to support local needs or for more focused analysis linked to specific actions and project identification within the Delivery Plan.
Data - Alternative	Alternative data, can overwrite the Core data to improve accuracy (national to local level of detail, e.g. local housing data to overwrite fields in Home Analytics).
Data - Core	Core data is the data that is essential to complete the minimum requirements of the LHEES analysis. Core data will come from national datasets e.g. Home Analytics or the Scotland Heat Map.
Data - Supplementary	Supplementary data allows inclusion of additional Indicators to inform specific, local basel & targets; also, Supplementary data can be used in GIS investigation to complement the Core analysis carried out in any assessment. An example of Supplementary data would be the inclusion of a constraints appraisal as part of a district heating analysis.
Data Zone	Data zones are groups output areas which have populations of around 500 to 1,000 residents.
Delivery Area	Delivery areas are at a higher granularity than Strategic Zones. These spatial zones should set out clusters of buildings within a Strategic Zone or across the whole local authority that identify potential solution(s) at a delivery level. They will be an important starting point for identifying a range of projects, regulation and actions that are within the competence of the Scottish Government, local authorities and wider partners (included as actions to be developed in the LHEES Delivery Plan).
Detailed practitioner approach	These Steps form part of the detailed practitioner approach in LHEES Stage 4, Generation of Initial Areas to set out particularly suitable heat network zones and to support project identification.
Indicator	For a given Consideration, the purpose of an Indicator is: 1) to act as a key information field to help characterise and baseline the local authority. 2) to act as a key information field to support strategic zoning and generation of initial delivery areas; 3) if suitable, to act as a key information field to measure progress against Targets over the duration of the LHEES - set out in the LHEES Delivery Plan. For some Considerations, one Indicator may be sufficient, but for others a range may be appropriate.

Intermediate Zone	Intermediate zones are a statistical geography that are designed to meet constraints on population thresholds (2,500 - 6,000 household residents), to nest within local authorities, and to be built up from aggregates of data zones.
LHEES Considerations	The LHEES Considerations are a list of technologies, building typologies and policy priorities used to identify and target interventions. They include: - Heat networks - Off-gas grid buildings - On-gas grid buildings - Poor building energy efficiency - Poor building energy efficiency as a driver for fuel poverty - Mixed-tenure, mixed-use and historic buildings
LHEES Delivery Plan	An LHEES Delivery Plan is a document setting out how a local authority proposes to support implementation of its local heat and energy efficiency strategy.
LHEES Guidance	The LHEES Guidance sets out the production and content requirements for a local authority to prepare a Local Heat and Energy Efficiency Strategy and Delivery Plan. Its purpose is to ensure that a Local Heat and Energy Efficiency Strategy and Delivery Plan contain outcomes and actions that are backed up by robust data and analysis, supported by stakeholder engagement, and that are linked to national and local priorities, plans and targets.
LHEES Methodology	The LHEES Methodology is a more detailed, step by step approach, which includes models, tools and templates, and represents best practice in how to produce an LHEES in accordance with the requirements set out in the LHEES Order and Guidance.
LHEES Stages	There are 8 LHEES Stages proposed in this methodology. The purpose of the LHEES Methodology is to enable the local authority to complete LHEES Stages 1 to 6. The completion of these Stages will provide the local authority with the data analysis and evidence base to enable them to complete their LHEES Strategy and Delivery Plan documentation. There are two LHEES reporting templates included alongside this methodology– LHEES Strategy example template and LHEES Delivery Plan example template. The completion of these two templates will satisfy the completion of LHEES Stages 7 and 8. The 8 LHEES Stages proposed in this methodology are: 1 - Policy and strategy review 2 - Data and tools library 3 - Strategic zoning and pathways 4 - Generation of initial delivery areas 5 - Building-level pathway assessment 6 - Finalisation of delivery areas 7 - LHEES Strategy 8 - LHEES Delivery Plan
LHEES Strategy	An LHEES Strategy is a long-term strategic framework for— - the improvement of the energy efficiency of buildings in the local authority's area, and - the reduction of greenhouse gas emissions resulting from the heating of such buildings
Mixed-tenure, mixed-use and historic buildings	Mixed-tenure and mixed-use buildings could include a mixture of owner occupied, private rented and social housing, and also non-domestic uses, or simply multiple ownership within the same tenure. Historic buildings include the buildings that are within conservation areas or those that are listed buildings. These categories may require established alternative approaches and regulation for the installation of low carbon heat and energy efficiency solutions and where specific advice and support might be available relating to the installation of these solutions.
Potential Zones	The analysis carried out for strategic zoning and pathways for the heat networks Consideration is to identify potential zones rather than the otherwise used naming convention of Delivery Areas. The potential zones identified are to be included in

	the LHEES Strategy and should inform actions around further investigation / progression within the LHEES Delivery Plan. The heat networks Consideration analysis and activity carried out within LHEES is also anticipated to support activity related to formal zone designation as required by the Heat Networks (Scotland) Act 2021.
Raster	A matrix of squares, or grid, used as a method of data analysis in GIS. Each cell in the grid contains a value representing information on the cell's contents.
Strategic Zone	Strategic Zones present a visualisation of the potential pathways to decarbonise the building stock at a local authority level. These could, for example, be split out by intermediate zone or data zone. They are useful to understand the baseline performance, the scale of potential and initial areas of focus, which could be used to inform Delivery Areas and follow on engagement.
Targets	Targets are the measurable aspect of the Consideration and are likely to be taken directly from national and/or local policy documentation, for example net-zero by 2045, or EPC C by 2040. Targets are likely to comprise of end-point targets and milestone targets and would sit along a timeline within (and beyond) the LHEES. This timeline would help to prioritise the types of projects undertaken within the LHEES over its duration.
Weighting	For some Considerations, one Target and Indicator may be sufficient, but for others a range of Indicators may be appropriate to contextualise and characterise performance against a Target and/or progress towards a Consideration. If multiple Indicators are used in strategic zoning or the identification of delivery areas, a Weighting can be applied based on the importance of each. The LHEES methodology sets out a core set of default Weightings for instances where multiple Indicators are suggested as a default setting. There is flexibility to update and augment these to support local needs or for more focused analysis linked to specific actions and project identification within the Delivery Plan.

14. APPENDICES

Annex A. Baselining

- LHEES Strategy Domestic Baseline Report link
- LHEES Strategy Non-Domestic Baseline Report link.

Annex B. Engagement and consultation

- LHEES Steering Group agreed role, remit and membership.

Annex C. Strategic Zones and pathways

- LHEES Heat Network Analysis Report here
- Potential Heat Network Zones Maps web map
- LHEES potential Heat pump and secondary heat pump deployment areas Report here
- LHEES potential Heat pump and secondary heat pump deployment areas Maps here

ANNEX B

PERTH AND KINROSS LOCAL HEAT & ENERGY EFFICIENCY STRATEGY (LHEES) 2024-2045 AND LOCAL AREA ENERGY PLANNING (LAEP)
STEERING GROUP ROLE AND REMIT

Purpose

The purpose of the Perth & Kinross LHEES/LAEP Steering Group is to provide a platform to bring together key stakeholders to support the delivery of the Perth & Kinross LHEES/LAEP Strategies and Delivery Plans.

The LHEES/LAEP requires input from a range of key stakeholders to ensure relevant plans, strategies, projects & data help to inform the final outputs as well as enabling key opportunities and challenges to be explored together. It will also provide an opportunity to develop collaborative partnership working in areas of work where there are commonalities, increase efficiencies in the delivery of shared projects/pieces of work, and, where possible, provide sustainable outcomes across a number of themes including:

- Addressing poor building energy efficiency as a driver of fuel poverty
- Poor building energy efficiency
- Heat decarbonisation
- Wider energy systems considerations

Remit:

To support this, the Group will work collaboratively to:

- provide updates on the LHEES & LAEP programme, including through planned external workshops to seek feedback on specific outputs & deliverables.
- share information and associated data of existing and future projects & plans linked to LHEES/LAEP.
- discuss key topics and areas linked to LHEES/LAEP including any concerns, risks and challenges.
- through strategic collaboration build upon areas of commonality and joint working – developments, programmes, projects and sharing of best practice.

Frequency of Meetings

The first external stakeholder meeting took place on 30 March 2023. The Group shall meet every quarter or more often if required. If members of the group are unable to attend, they shall send a representative on their behalf. An action plan log will be circulated before meetings and updated after meetings.

Membership

Membership of the group will initially comprise the following stakeholders.

Stakeholders	Key Contact(s)
Perth & Kinross Council (various officers)	Climate Change & Smart Investment Manager - Serge Merone (Chair) Shelley McCann (Lead Officer - Co-ordination Team) Representatives from Properties: Grant Key / Nicola Lennon
Energy Savings Trust	Dai Grady Victor Chamosa Pino
The Heat Project	Martin Mathers
Home Energy Scotland	TBC
Horsecross	Ginger Ramsden
Live Active	Gary Watson
Culture PK	Kenny McWilliam
NHS	John Ruddy
Perth & Kinross Climate Change Commission	Nathan Jamieson John Ferguson Martin Mathers
PKAVS	Graham Illsley
SCARF	David Mackay
Scottish Water	Helen Smith
Scottish Futures Trust	Stephen Vere
SGN	Colin Thomson
SPEN	Stuart Walker Nick Evans
SSEN	Rhys Williams Adam Bain
TACTRAN	Mark Speed
Advanced Infrastructure	Lily Cairns Haylor

Zero Waste Scotland	Calum Robertson Chris Morrison
Federation of Small Businesses	David Groundwater
Growbiz	Jackie Brierton
Perthshire Chamber of Commerce	Vickie Unite

Perth and Kinross Local Heat & Energy Efficiency Strategy Delivery Plan

2024-2029

DRAFT

Perth & Kinross Council

November 2023

INTRODUCTION

This document presents the first 5-year Delivery Plan (2024-2029) accompanying the first Perth and Kinross Local Heat and Energy Efficiency Strategy (LHEES) (2024-2045).

This has been developed in partnership with key stakeholders and provides a strong basis for action for local communities, government, investors, developers and wider stakeholders, pinpointing areas for targeted intervention and early, low-regrets measures in the near to medium term.

Due to the dynamic nature of this plan, and rapidly evolving regulatory, funding and policy landscapes, it is intended to be kept as a live document and published as a live plan in a digital planning platform being developed through Project RESOP (Regional Energy System Optimisation Planning) by Scottish and Southern Electricity Networks (SSEN) under Ofgem's Network Innovation Allowance.

The Delivery Plan will be reviewed regularly to ensure partners are able to respond flexibly to changes in need across Perth and Kinross particularly how actions would be funded.

Full details of the LHEES Delivery Plan actions are detailed in the following tables.

STRATEGIC PRIORITY 1: Delivering decarbonised heat within a transitioning energy system **DELIVERY PRIORITY 1A:** Heat Networks								
ID	**ACTION**	**HOW WILL WE GET THERE**	**OUTCOME**	**OWNER**	**STAKEHOLDERS**	**TIMESCALE**	**PROGRESS**	**FUNDING**
1.1	Evaluate delivery models for deploying heat networks in Perth and Kinross, including establishing a Strategic Energy Partnership, and agree development route.	Engage with Danish Mentoring Programme, SFT, ZWS, suppliers and other Councils to explore potential delivery models for Perth City centre heat networks and wider heat networks	Identify opportunities for stakeholder support and engagement with heat network development	PKC	Zero Waste Scotland (ZWS), Scottish Futures Trust (SFT), Communities	By Dec 24	Started	Required, but source not identified
1.2	Explore feasibility of connecting non-domestic and domestic buildings to heat network by progressing the requirements of The Heat Networks (Heat Network Zones and Building Assessment Reports) (Scotland) Regulations 2023 following the LHEES	Explore the suitability of non-domestic buildings within a heat network zone to connect to a heat network - linked to Council's Estate decarbonization porgramme Power BI dashboard.	Stakeholders with buildings suitable for connection to heat network identified for engagement.	PKC	Building owners and estate managers, SSEN, SFT, ZWS	By Dec 24	Not started	Required, but source not identified

	modelling (ie finalising Review (Section 47) and preparing for Designation (Section 48).							
1.3	Explore feasibility of connecting residential housing to heat networks	Feasibility of connecting residential areas in proximity or between Potential Zones and potential impact of this with fuel poverty and energy savings. Investigate suitability of Council owned properties within the Inveralmond and North Muriton Industrial Estates to connect to a heat network	Stakeholders with buildings suitable for connection to heat network identified for engagement.	PKC	RSLs, HAs	By Dec 24	Not started	Required, but source not identified
1.4	Assess financial viability of heat network zones in relation to buildings connected	Review viability of Selected Potential Zones and assess impact of heat demand errors and secondary school review on viability of zones	Improved confidence in viability of Selected Potential Zones	PKC	SFT, ZWS, SG	By Dec 24	Not started	Required, but source not identified

1.5	Assess financial viability of Perth City Centre Network	Initiate development of an Outlline Business Case for heat network in the Perth City Centre		PKC	HNSU, SFT	By Dec 24	Not started	HNSU/Internal funding. Funding not Secured
1.6	Complete Building Assessment Reports (BARs) for required Council owned building	Complete Building Assessment Reports (BARs) for required Council owned building prioritising those with a higher suitability for connection and located within potential Heat Network Zones. Facilitate and support other public sector organisations across Perth and Kinross to discharge this duty.	Number of BARs completed	PKC	public sector organisations	By Dec 24	Not started	Required, but source not identified

1.7	Explore and quantify viability of low carbon or renewable heat sources for potential heat networks including though not limited to: • Deep geothermal • Heat from wastewater treatment plants/wastewater network • Ground Source heat pumps • Other sources of waste heat	Work with stakeholders, including Scottish Water Horisons, Waste Heat Steering Group etc., to quantify the renewable or low carbon heat opportunities to support the designation of heat networks zones and inform development of feasibility studies and business cases for Potential Heat Network Zones	Quantified assessment of the potential for low carbon heat supply to inform designation of Heat Network zones	PKC	Scottish Govenment, Scottish Water Horizons, SEPA	By Dec 24	Not started	Required, but source not identified
1.8	Work with Business Energy Scotland to engage the non-domestic sector to develop awareness and engagement campaigns, and identification and engagement with non-domestic building owners on suitability for heat networks, within Potential Zones.	Support a local business programme that provides practical support to business owners. Use information generated as part of dedicated engagement plan for the non-domestic sector to inform this	Increased awareness and buy in from non-domestic sector	PKC	Business Energy Scotland, Perth Chamber of Commerce, FSB, Business Gateway	By Dec 2025	Not started	Required, but source not identified

1.9	Engage with Historic Environment Scotland and SSEN to assess considerations impacting viability of heat networks	Engage with Historic Environment Scotland to understand implications that conservation area status might have on heat network development. Engage with SSEN on the impact of the proposed heat network on electricity infrastructure, and potential capacity for expansion of the proposed heat network	Limitations for potential heat networks understood	PKC	Historic Environment Scotland (HES), SSEN	By Dec 24	Not started	Not required
1.10	Explore expansion and boundaries of potential heat network zones in the Perth City Centre	Explore long-term potential for interconnection with Perth HMP, Perth Royal Infirmary, Perth College UHI, Perth Grammar School, nearby residential estates and through connecting the heat network to planned			HMP, PRI, Perth College UHI, Perth Grammar, Perth Leisure Active	By June 25	Not started	Required, but source not identified

		redevelopment of the bus and railway station, Perth Leisure Centre and Dewars Centre. Further analysis of viability and potential socio-economic impacts of connecting Letham to a heat network (Zone 7)						
1.11	Explore expansion and viability of potential heat network boundaries in Auchterarder, Kinross and Blairgowrie.	Assess the suitability for nearby housing stock for connection to a heat network. Consider potential for connecting to heat networks at early stages of site development for future housing and employment sites.	Appetite and viability of heat network in Selected Potential Zone understood	PKC	Housing Association, RSLs, Strategic Housing Forum	By June 25	Not started	Required, but source not identified

1.12	Explore expansion and viability of potential heat network boundaries in Kinross.	Engage with local community in Kinross and CATCH around appetite for connection of domestic properties to heat network. Conduct a deeper dive of suitability for housing stock in proximity to Loch Leven Leisure Centre for connection to a heat network (Zone 5). Consider potential for connecting to heat network at early stages of site development for future housing proposals near Loch Leven Leisure Centre	Appetite and viability of heat network in Selected Potential Zone understood	PKC	CATCH	By June 25	Started	Required, but source not identified

1.13	Explore expansion and viability of potential heat network boundaries in Blairgowrie.	Explore opportunity for a heat network connecting Blairgowrie Campus, including connecting to residential area between the anchor loads, noting that low heat demand and low number of social housing (Zone 4). Engage with HEAT project and Proctor Production Facilities to understand existing project, appetite for connection to a heat network and potential for waste heat opportunity from the site.	Appetite and viability of heat network in Selected Potential Zone understood	PKC	HEAT project, Proctor Production Facilities	By June 25	Not Started	Required, but source not identified

1.14	Explore expansion and viability of potential heat network boundaries in Auchterarder.	Explore feasibility of connecting residential areas in proximity to Auchterarder Community School (Zone 6)	Feasibility and impact of connecting residential areas to a heat network understood	PKC	Communities, Housing developers	By June 25	Not started	Required, but source not identified

STRATEGIC PRIORITY 1: Delivering decarbonised heat within a transitioning energy system **DELIVERY PRIORITY 1B:** Heat Pumps								
ID	**ACTION**	**HOW WILL WE GET THERE**	**OUTCOME**	**OWNER**	**STAKEHOLDERS**	**TIMESCALE**	**PROGRESS**	**FUNDING**
1.15	Target social housing with immediate potential for heat pump retrofit	Develop and implement a heat pump retrofit plan within the Council's social housing stock, targeting properties first with inefficient, carbon intensive systems (e.g., LPG and Oil). Direct funding and advice for retrofit through EES:ABS and wider funding sources into Delivery Areas identified within the LHEES. Collaborate with housing associations to encourage heat pump installations. This could	Strategic and delivery priorities used to target	PKC	Housing Association, RSLs, Strategic Housing Forum	By Dec 24	started	Social Housing Net Zero Heat Fund EES:ABS PKC, Housing Associations

		involve providing support in securing funding and grants, such as the Social Housing Net Zero Heat Fund. The Council could also work to streamline the installation process for registered social landlords through partnerships with heat pump suppliers and installers.						
1.16	Work with key delivery partners to target privately owned, off gas grid properties suitable for heat pump retrofit	Continue to collaborate with local energy groups (e.g. HEAT Project) to engage with residents by providing informative materials to promote the benefits of heat pumps and promote existing funding options. Prioritise working with	Strategic and delivery priorities used to target	PKC	Housing Associations, RSLs, Strategic Housing Forum, Communities, HEAT projects	By Dec 27	Started	Private EES:ABS

		private landlords that own large portfolios to decarbonise to their housing stock. Develop awareness campaigns to educate property owners about heat pumps, installation, and funding.						
1.17	Work with key delivery partners to target off-gas private homes suitable that requires energy efficiency improvements to enable suitability for heat pumps	Continue to collaborate with local energy groups (e.g. HEAT Project) to engage with residents by providing informative materials to promote the benefits of heat pumps and promote existing funding options. Prioritise working with private landlords that own large portfolios to decarbonise to their housing stock. Develop awareness campaigns	Strategic and delivery priorities used to target	PKC	Housing Associations, RSLs, Strategic Housing Forum, Communities, HEAT projects	By Dec 27	started	Private EES:ABS

		to educate property owners about heat pumps, installation, and funding.						
1.18	Work with key delivery partners to target privately owned non-domestic properties suitable for heat pump and retrofit	Continued engagement with the private sector, to identify barriers associated with building retrofit to provide tailored solutions aimed at addressing the specific challenges. Work with Business Energy Scotland to engage the non-domestic sector to develop awareness and engagement campaigns, and identification and engagement with non-domestic building owners. Promote awareness of funding incentives available for	Strategic and delivery priorities used to target	PKC	Communities, HEAT projects, Businesses	By Dec 27	started	Private EES:ABS

		small and medium-sized enterprises (SMEs)						
1.19	Work with SSEN to align investment planning and grid reinforcement to support heat pump roll out.	Use RESOP and LAEP+ platform to collate and share data and feed into SSEN investment plan	Strategic and delivery priorities used to target	PKC	SSEN	By Dec 27	started	NA

STRATEGIC PRIORITY 2: Improving buildings' energy efficiency aiming for affordable warmth and regulatory compliance **DELIVERY PRIORITY 2A:** Improving buildings' energy efficiency to meet regulatory standards								
ID	**ACTION**	**HOW WILL WE GET THERE**	**OUTCOME**	**OWNER**	**STAKEHOLDERS**	**TIMESCALE**	**PROGRESS**	**FUNDING**
2.1	Target social housing and privately owned homes with energy efficiency requirements to meet regulatory standards	Prioritise social housing with poor energy efficiency but relatively low intervention costs for "quick wins." Prioritise areas with substantial energy savings and CO2 emissions reductions potential at a lowest cost. Collaborate with partners and Scottish Government to incentivise improving energy efficiency in privately owned homes. Direct funding and advice for retrofit through EES:ABS and	Strategic and delivery priorities used to target	PKC	Housing Association RSLs, Strategic Housing Forum, Scottish Government	By Dec 24	started	EES:ABS Private PKC

		wider funding sources into Delivery Areas identified within the LHEES.						
2.2	Work with delivery partners to target non-domestic buildings that require retrofit to meet regulatory targets	Facilitate collaboration between the public and private sectors and align strategic energy planning potentially through Strategic Energy Partnership. Promote awareness of funding incentives available for small and medium-sized enterprises (SMEs) Continued engagement with the private sector, to identify barriers associated with building retrofit to provide tailored solutions aimed at addressing the specific challenges. Work with Business	Strategic and delivery priorities used to target	PKC	Business Energy Scotland, Public sector non domestic	By Dec 25	Not started	Private

		Energy Scotland to engage the non-domestic sector to develop awareness and engagement campaigns, and identification and engagement with non-domestic building owners						

STRATEGIC PRIORITY 2: Improving buildings' energy efficiency aiming for affordable warmth and regulatory compliance **DELIVERY PRIORITY 2B:** Improve buildings' energy efficiency aiming for affordable warmth								
ID	**ACTION**	**HOW WILL WE GET THERE**	**OUTCOME**	**OWNER**	**STAKEHOLDERS**	**TIMESCALE**	**PROGRESS**	**FUNDING**
2.3	Target delivery areas for social housing that does not meet regulations (e.g., below EPC B) identified for energy efficiency retrofit	Prioritise social housing likely to experience a greater reduction in fuel poor households due to the implementation of low-cost retrofit measures.	Strategic and delivery priorities used to target	PKC	Housing Association RSLs	By Dec 25	started	Required, but source not identified
2.4	Target deliver areas for privately owned homes that do not meet targets (e.g., below EPC C) and potential suitability for EEPS:ABS funding	Promote retrofitting in targeted areas though awareness campaigns about available funding to support fuel-poor households. Direct funding and advice for retrofit through EES:ABS and wider funding sources into Delivery Areas identified within the LHEES	Strategic and delivery priorities used to target	PKC	Communities, HEAT projects,	By Dec 25	Not started	EES:ABS

2.5	Target privately owned domestic properties below EPC band E	Promote retrofitting in targeted areas though awareness campaigns about available funding to support fuel-poor households. Direct funding and advice for retrofit through EES:ABS and wider funding sources into Delivery Areas identified within the LHEES	Strategic and delivery priorities used to target	PKC	Communities, HEAT projects, Businesses	By Dec 25	Not started	EES:ABS

SUPPORTING MECHANISMS								
ID	ACTION	HOW WILL WE GET THERE	OUTCOME	OWNER	STAKEHOLDERS	TIMESCALE	PROGRESS	FUNDING
Taking a Whole Energy Systems Approach								
3.1	Develop a sustainable data sharing model and platform. Develop the data and mapping capability and tools to support the LHEES and LAEP process	Work with RESOP Project (Regional Energy System Optimisation Planning) and partners to migrate LHEES/LAEP outcomes to LAEP+ platform	Live data platform for LHEES/LAEP	PKC	SSEN/AITL/ ARUP	By Dec 24	Started	SSEN Innovate UK
3.2	Develop decarbonisation pathways through to project business case development.	Engage as part of RESOP pilot and potential IUK funding to develop product roadmap to support standardisation of decarbonisation pathways through to business case	Strategic investment framework and delivery plan for key partners	SSEN	SSEN/AITL	By Dec 24	Started	SSEN Innovate UK

		development to provide a prospectus for investment with key partners						
3.3	Biennial review of actions that could be added to the Delivery Plan and/or are enabling actions once initial ones are completed.	Determine whether the outcomes of EESSH2 review necessitate a re-run of the LHEES models - Review Council Decarbonisation Plan and LAEP outcome to integrate area and building level actions for specific geographic areas and building types (archetypes) - maintaining a "live" delivery plan incorporating the actions of key stakeholders	Improved knowledge, awareness and accessibility to key policies, targets and data to inform the ongoing development and live delivery of LHEES	PKC	SSEN/AITL/ ARUP	Ongoing	Not started	Not required

3.4	Develop a sustainable data sharing model and platform to address gaps and improve future LHEES iterations	Ensure appropriate feedback mechanisms between SCARF/HES and EST at regular intervals to enable planning to reflect progress towards building decarbonisation. Enable a join up approach across organisations by removing barriers to data sharing (e.g. Warmworks, HES, EST, PKC and SSEN)	Improved data for future LHEES.	PKC	SCARF/HES /EST/WARM WORKS	Ongoing	Started	Not required

	Improve fuel poverty reporting	Work with Energy Savings Trust and CDT to improve fuel poverty reporting in Home Analytics.	Improved data for future LHEES. LHEES more accurate helping to identify further low risk and high certainty actions	PKC	EST	By Dec 25	Started	Not required
3.5	Ensure data for installations and Council housing stock is updated.	Work with EST and PKC CDT to ensure updated data for installations and Council housing stock included in Home Analytics as part of a wider sustainable data model	Improved data for future LHEES.	PKC	EST	By Dec 25	Started	Not required

3.6	Liaise and inform development of a Climate Intelligence Service	Work with Improvement Service and partners to inform development of a Climate Intelligence Service to meet LHEES requirements and build capacity within other Local Authorities to improve decision making for area-wide emissions reduction by providing the data and tools, and building skills	Improved data model for future LHEES	Improvement Service, Edinburgh Climate Change Institute, the Sustainable Scotland Network, COSLA and Scottish Government	PKC	By Dec 24	Started	COSLA funding
3.7	Produce a Council Estate Decarbonisation Plan	The Council is currently undertaking work to design and deliver a major programme of retrofitting both for its domestic and non-domestic building stock,	Improved data and planning	PKC		By Dec 24	Started	PKC

		focusing on how decarbonising projects should be prioritised. The work will consider detailed programming, risk analysis, supply chain capacity and the Council's operating model, to identify how the Council could progress and where critical gaps exist (such as in the local retrofit supply chain) that the Council can start to influence in preparation for major retrofit projects.						

3.8	Develop a decision-making toolkit to filter projects and develop business cases	The Council has developed a toolkit that will allow us to filter projects and develop business cases to triage delivery actions and areas into a pipeline of investable energy projects based on a range of priorities. This will lead to the development of an investment programme enabling Smart Local Energy Systems.	Improved business case development	PKC		By Dec 24	started	PKC

Developing green skills and the capacity of the supply chain								
3.9	Quantify risk for installers	Work with HES/SCARF to quantify risk for installers, especially in rural areas by exploring the number of referrals vs. the number of installs to identify the skills gap	Identification of existing skills development programmes and partnerships that could support LHEES delivery in PKC.	PKC	HES/SCARF	By Dec 24	Not started	Not required
3.10	Identify existing skills and partnerships	Work with Skills Board Tay Cities Region Deal and Clean Growth Platform to identify existing skills and partnerships that could support LHEES delivery	Identification of existing skills development programmes and partnerships that could support LHEES	PKC	Tay Cities Region Skills Board and Clean Growth Platform	By Dec 24	Not started	Not required

			delivery in PKC.					
3.11	Explore opportunities to further develop local skills and supply chains.	Take action to increase the number of skilled workers in the region, to help towards closing the skills gap. Skills required include retrofit design and coordination, installation of retrofit measures and understanding of whole house systems, ventilation and heating design and installation,	Strong and resilient local supply chain for retrofit and low carbon heat technologies .	PKC	CITB, Perth UHI, College, Tayside Region Deal Skills Board (others?)	By Dec 24	Not started	Required, but source not identified

		renewables design and installation. Build an understanding of the current and future skills and training requirements to “green” the construction sector to ensure we can deliver quality homes with affordable warmth, zero emissions and SMART technology. Work in partnership with the CITB, local construction companies and training providers including Perth UHI to ensure Perth and Kinross is well placed to provide appropriate reskilling and training opportunities.						

		Seek to incorporate a commitment within publicly funded contracts to support training, retraining and upskilling in the future/ existing workforce to support supply chain development.						
3.12	Explore opportunities to further develop local skills and supply chains.	'Engage with Scottish Enterprise to explore how LHEES can shape planning of upcoming events to articulate opportunities and raise awareness of potential solutions and innovation across the industry	Understand opportunities for innovation and technologies across the industry	PKC	Scottish Enterprise, Supplier Development Programme	By Dec 25	Not started	Required, but source not identified
Working in partnership with communities to build community wealth and wellbeing								

3.13	Help develop existing and create new community renewable energy projects to support community energy projects across Perth and Kinross.	Share LHEES priorities to inform and be informed by community groups and identify opportunities for projects	Understand opportunities to support community energy projects	PKC	Community groups e.g. CATCH, HEAT project	By Dec 25	Not started	Not required
3.14	Develop and support Community-led actions to address non-technical barriers to net zero.	Use experience from 'Dialogue to accelerate Net Zero' project funded by Innovate UK to scale up	Understand opportunities to support community energy projects	PKC	Community groups e.g. HEAT project	By June 25	started	Innovate UK

Mobilising partners and public and private investments for projects								
3.15	Explore the development of a Strategic Energy Partnership and possible procurement route to unlock delivery of, though potentially not limited to, heat networks.	Work with Scottish Futures Trust to identify commercial model and procurement route. Test the market via Prior Information Notice (PIN) and make recommendations to the Council	Improved business case development and delivery	PKC	SFT	By Dec 24	Started	Not required
3.16	Develop a programme of investable projects and an investment plan for taking new projects forward that are linked to priorities	Develop from the LHEES and LAEP a programme of investable projects and an investment plan that can be taken to the market for funding	Investment plan comprising a series of projects	PKC	SG, UKIB, SNIB	By Dec 27	Not started	Required, but source not identified

3.17	Align LHEES/LAEP investment planning with utilities investment plans	Progress the staged approach set out in the decision-making toolkit guidance to support potential projects develop towards strategic and outline business case and beyond.	Progress potential projects through a systematic approach towards development and execution.	PKC	SSEN, SGN	By Dec 24	Not started	Not required
	Aggregate projects across Scotland to create a programme of projects with Scottish Government and other local authorities to promote larger publicly funded schemes to help support opportunities and projects arising from LHEES	Seek to work with Scottish Government and other local authorities to develop a new mechanism to support residents to affordably retrofit their homes.	Long-term pipeline of funded projects.	PKC	Scottish Government, SNIB	By Dec 28	Not started	Required, but source not identified

3.18	Work with key stakeholders to develop/align Priorities, success factors, targets and ability to support onward delivery of LHEES strategy and projects.	Identify opportunities for stakeholder support with LHEES delivery	Identify opportunities for stakeholder support with LHEES delivery	PKC	Key stakeholders	By Dec 24	Not started	Not required
3.19	Identify existing or planned energy retrofit and net zero energy projects by universities, NHS Boards and other organisations with large estates to consider how the LHEES Delivery Plan can build on any new or emerging projects.	Progress the staged approach set out in the decision-making toolkit guidance to support potential projects develop towards strategic and outline business case and beyond.	Progress potential projects through a systematic approach towards development and execution.	PKC	NHS, large estates	By Dec 27	Not started	Required, but source not identified

GOVERNANCE								
ID	**ACTION**	**HOW WILL WE GET THERE**	**OUTCOME**	**OWNER**	**STAKEHOLDERS**	**TIMESCALE**	**PROGRESS**	**FUNDING**
4.1	Create a Council's LHEES co-ordination team	Identify existing staff and recruit additional staff	Improved co-ordination	PKC		By May 24		PKC SG
4.2	Update data and support access to data to all stakeholders	Co-ordination team to track and update data	Improved data	PKC	LHEES Steering Group	ongoing	started	Not required
4.3	Develop and co-ordinate a communication and engagement plan	Create an internal engagement pack to support communication Create a public facing prospectus that sets out the long-term vision and outcomes for the LHEES Strategy, the near-term actions it is planning, and an invitation to engage.	Communications strategy in place and material developed	PKC/ARUP	SG	By May 24	Started	Not required
4.4	Develop and update a risk register for all actions	Co-ordination team to set-up with LHEES Steering Group	Improved risk management	PKC	LHEES Steering Group	By May 24	Not started	Not required

4.5	Produce monitoring reports	Co-ordination team to produce monitoring reports will be produced every quarter for the Steering Group and the Board and annually for the Climate Change & Sustainability Committee with a full review of the Strategy and Delivery Plan every 5 years. The next full review will be in 2029.	Improved monitoring	PKC	LHEES Steering Group	Ongoing	Not started	NA
4.6	Prepare and co-ordinate LHEES Strategy and Delivery Plan reviews	Co-ordination team to prepare a project plan for reviews	Improved monitoring and evaluation	PKC	LHEES Steering Group	By May 24	Not started	Not required
4.7	Develop and provide support to project managers	Co-ordination team to prepare templates, best practices and a training plan.	Improved monitoring and evaluation	PKC	LHEES Steering Group	By May 24	Not started	Not required
4.8	Coordinate and support LHEES Steering Group	Co-ordination team to organize meetings, agendas and communication	Improved co-ordination	PKC	LHEES Steering Group	Ongoing	Not started	Not required

4.9	Develop a communications strategy for LHEES delivery comprising long term vision and outcomes for LHEES and short- medium terms actions including awareness raising measures for support and advisory services and home upgrades.	Scottish Government to "deliver a public communications programme to raise awareness of the support and advisory services available and to encourage home upgrades, in order to maximise uptake of these schemes"	Improved public awareness of LHEES	Scottish Government	EST and HES	TBD	Started	Required, but source not identified

PERTH AND KINROSS COUNCIL

Climate Change & Sustainability Committee

27 November 2023

CRAIGIE BURN FLOOD STUDY

Report by Head of Environmental and Consumer Service
(Report No. 23/331)

1. PURPOSE

1.1 This report sets out the outcome of the Council's flood study on the Craigie Burn, Perth. The report recommends that a small flood protection scheme is taken forward as it has been found to be economically viable. As such, the proposed scheme will be submitted to SEPA for national prioritisation and inclusion in the next Tay Flood Risk Management Plan and Local Flood Risk Management Plan, to be published in 2028.

2. RECOMMENDATIONS

2.1 It is recommended that Committee:

(i) notes the completion of the Craigie Burn Flood Study, as required by the Tay Flood Risk Management Plan and Local Flood Risk Management Plan.
(ii) notes that public engagement events have been held to disseminate the findings of the flood study.
(iii) approves the recommendations of the study, including the proposals for a small flood protection scheme on the Craigie Burn.
(iv) notes that details of the recommended flood protection scheme will be submitted to SEPA for national prioritisation and inclusion in the Cycle 3 (2027-2033) Tay Flood Risk Management Plan, to be published in December 2027, and Tay Local Flood Risk Management Plan, due for publication in 2028.

3. STRUCTURE OF REPORT

3.1 This report is structured over the following sections:

- Section 4: Background/Main Issues
- Section 5: Proposals
- Section 6: Conclusion
- Appendices

4. BACKGROUND / MAIN ISSUES

4.1 Under the Flood Risk Management (Scotland) Act 2009, SEPA and lead local authorities published their Cycle 1 Flood Risk Management (FRM) Plans (referred to as 'Strategies' at the time) and Local FRM Plans in December 2015 and June 2016 respectively. These documents set out a range of actions that SEPA and responsible authorities took to manage and, where possible, reduce the risk of flooding over a six-year period.

4.2 The (then) Environment Committee approved the content and publication of the Cycle 1 Tay Local FRM Plan on 1 June 2016 (Report 16/241 refers). The (then) Environment and Infrastructure Committee subsequently approved the content of an Interim Report on the progress made in implementing the Cycle 1 Local FRM Plans on 23 January 2019 (Report 19/16 refers).

4.3 SEPA and lead local authorities published updated Cycle 2 FRM Plans and Local FRM Plans in December 2021 and December 2022 respectively for the six-year period from 2022 to 2028. The Climate Change & Sustainability Committee approved the content and publication of the Cycle 1 Final Report and Cycle 2 Tay Local FRM Plan on 19 December 2022 (Report 22/307 refers). The published documents can be viewed at the following link: http://www.pkc.gov.uk/frmplans.

4.4 The published FRM plans and Local FRM plans identify various flood studies as a means of further improving the understanding of flood risk in certain locations. A flood protection study was identified for the Craigie Burn in Perth.

4.5 The purpose of the flood study was to investigate what further action would be required to manage flood risk at this location. Such action can be implemented through flood protection schemes, where these are found to be technically feasible and economically viable.

4.6 The 2009 Act provides local authorities with discretionary powers to promote flood protection schemes. Only those flood schemes which have been included in the published FRM Plans, the Local FRM Plans and the national priority list are taken forward in the subsequent 6-year period.

4.7 Although public authorities are expected to take a proactive role in managing and, where achievable, lowering flood risk, the primary responsibility for avoiding or managing flood risk still remains with land and property owners. The 2009 Act does not alter this. Individuals, businesses and communities must, therefore, play a critical role in making themselves more resilient and helping to reduce the impact of flooding.

4.8 The Craigie Burn is situated within the south and western areas of Perth within the River Tay catchment and Potentially Vulnerable Area (PVA) 02/08/12.

4.9 The main potential source of flooding in this area of Perth is from the Craigie Burn and its tributaries, the Scouring and Buckie Burns. This river (or fluvial) flood risk was the main focus of this flood study. There are already existing flood defences in the catchment, which form part of the Perth Flood Scheme, and these already serve to reduce flood risk in the area.

4.10 It is also acknowledged that there is also a significant risk of surface water (or pluvial) and sewer flooding within the Craigie Burn catchment. However, as set out by the Tay Local FRM Plan, this form of flooding is being investigated as part of the on-going Perth Surface Water Management Plan. The Council's flooding team is coordinating the work of this project with the Craigie Burn flood study.

4.11 Much of the existing hydraulic model for the Craigie Burn was developed as part of earlier work on the Perth Integrated Catchment Study, which was undertaken jointly with Scottish Water. In December 2021, consulting engineers, Amey Consulting Ltd, were engaged to develop this model further and to complete a flood study for the Craigie Burn.

4.12 Amey's investigations involved extensive data gathering and analysis, consultations, topographic surveys, a hydrological assessment, hydraulic modelling, an environmental desk study, an options study, an economic appraisal and the production of final reports.

4.13 The flood study analysed the flooding mechanisms affecting the Craigie Burn catchment and a series of flood maps were produced. The study confirmed properties are at risk of flooding in the following areas:

- Cherrybank area – Glasgow Rd, Necessity Brae and Low Road
- Orchard Place and Murray Crescent
- Balmoral Place, Queen's Avenue, Queen Street and Windsor Terrace
- Croft Park and the South Inch

4.14 The study also highlighted the complex interaction between different sources of flooding within the catchment, namely river, surface water and sewer flooding.

4.15 The study estimates that up to 57 properties are potentially at risk during a 1 in 200-year flood event (the flood event with a 0.5% chance of occurring in any one year). In future, this is estimated to increase to 114 properties due to the effects of climate change. These numbers relate to those properties at risk of internal flooding, i.e., where flooding occurs above the property threshold level. The large increase in the number of properties potentially at risk of flooding in the future (due to climate change) is mainly due to a predicted increase in risk from surface water and sewer flooding.

4.16 In managing flood risk, the Council is required to have regard to the economic, social and environmental impact of its actions. The Scottish Government's guidance recommends that decision making in flood risk management should be supported by an options appraisal.

4.17 An options appraisal includes a cost-benefit analysis and other techniques to determine whether a flood protection scheme meets its objectives, is sustainable and represents best value for money. In general, the cost of flood damage avoided over time must be greater than the cost of building the flood defences, i.e., they must achieve a benefit/cost ratio of greater than 1.0.

4.18 Amey initially considered a long list of potential actions to manage the risk of flooding. This long list was screened to remove actions that were clearly not feasible, leaving an initial short list of 14 potential actions. These actions were assessed in detail within the hydraulic model to arrive at the final short list of 8 actions listed below:

1. Upstream flood storage and natural flood management in the rural catchment south of the M90. (Option 1 in the flood study report).
2. Increase storage capacity at the existing flood storage ponds adjacent to the Glasgow Road (these form part of the Perth Flood Scheme). (Option 3 in the flood study report).
3. Improve river channel conveyance by dredging the Craigie Burn from Buckie Braes to the South Inch. (Option 7 in the flood study report).
4. Create a flood storage area on the Craige Burn in the land between Low Road and Orchard Place. (Option 8 in the flood study report).
5. Improve capacity of existing culvert at Queens Avenue (beneath the access to Queen's Court). (Option 10 in the flood study report).
6. Improve capacity of existing culvert at Queens Avenue (beneath the access to Queens Court) and modify adjacent river channel. (Option 11 in the flood study report).
7. Improve the Craigie Burn to South Inch reservoir spill mechanism (to the east of Croft Park). (Option 13 in the flood study report).
8. Combination of options 6 and 7 (Options 11 and 13 in the flood study report).

4.19 These 8 options were subject to a technical, environmental and economic appraisal. Details of the initial and final short-list of actions are shown in Appendix 1, together with the estimated costs and benefit cost ratios.

4.20 The flood study concluded that most of the identified options are not economically viable as they have benefit/cost ratios of 1.0 or less. The study has confirmed that the benefit/cost ratios for the short-listed options are generally low, and this is due to the presence of the existing flood defences within the catchment (which form part of the Perth Flood Scheme), and the on-going maintenance that the Council currently undertakes.

4.21 However, the short-listed options for upgrading the culvert at Queen's Avenue (options 5 & 6) did achieve a benefit/cost ratio of greater than 1.0 and Option 6 has been identified as the most cost-effective.

4.22 The flood study therefore recommends Option 6 which consists of the following two actions:

a) upgrade and increase the capacity of the existing culvert on the Craigie Burn at Queen's Avenue (at the access to Queen's Court).
b) localised channel modifications on the Craigie Burn (adjacent to Balmoral Place and Queen's Avenue) upstream and downstream of the upgraded culvert.

4.23 The recommended option is estimated to have a capital cost of £0.314M and an overall benefit/cost ratio of 1.42. The flood study has, therefore, concluded that this flood protection option is economically viable and should be implemented.

4.24 If these actions were to be implemented, then the estimated flow capacity of the channel of the Craigie Burn at Queens Avenue would increase from its current 1 in 5-year flood to the predicted 1 in 100-year flood. A total of 22 properties would be protected up to the 1 in 100-year flood (and up to 18 properties would benefit in the 1 in 200-year flood), as described in Appendix 2.

4.25 It is recognised that the recommended actions noted above have a limited benefit and that properties in other areas of the catchment will remain at risk of flooding from the Craigie Burn. The existing Perth Flood Scheme does offer a limited degree of protection but, as acknowledged at 4.20, this and the on-going maintenance activities within the catchment limits the potential benefits for any new actions. Unfortunately, it is not always possible to remove all flood risk in a catchment and some residual flood risk will always remain. This would remain the case, even if it were possible to implement all of the potential actions identified in the study. Even if it were possible to remove the river (or fluvial) flood risk, the risk of surface water and sewer flooding would remain. The nature of the catchment also means that there is limited scope for more extensive options.

4.26 The current Tay Local FRM Plan therefore includes other actions for this area of Perth including:

- Sewer flood risk assessment (Scottish Water)
- Perth Surface Water Management Plan
- Community engagement
- Community resilience groups
- Maintenance – of the Perth Flood Scheme, watercourses, drainage networks, etc.
- Awareness raising
- Flood forecasting (SEPA)
- Self-help measures
- Emergency plans/response
- Land use planning - managing flood risk through the application of development planning policy.

4.27 The recommendations and conclusions within Amey's flood study report align with the actions set out in the current Tay Local FRM Plan.

4.28 As noted at 4.10, the Perth Surface Water Management Plan is on-going. While this project covers the whole of the city of Perth, it will give further consideration to the potential means of managing, and where possible reducing, surface water flood risk within this catchment.

4.29 As noted at 4.7, individuals, businesses and communities must play a critical role in making themselves more resilient and helping to reduce the impact of flooding. The Tay Local FRM Plan, therefore, includes actions which are intended to enable communities to act and to become more resilient to flooding. The flood study has also confirmed that property flood resilience measures are an effective way for residents and communities to improve their resilience to flooding and recommends that those in flood affected areas consider installing these.

4.30 In order to disseminate the findings of the flood study, and to outline how flood risk is being managed in the area, community drop-in sessions were held at the Dewar's Centre, Perth on 20 and 28 June 2023 from 2 – 8pm. The display information was also made available on the Council's consultation hub between 16 June and 16 July 2023. This allowed the community to view and comment on the study findings. Further details are provided in Section 4 of the Annex to this report.

4.31 The Council will continue to raise awareness of flooding and encourage the local community and other landowners to become more prepared and resilient to deal with flooding in the future.

5. PROPOSALS

5.1 The Council's consulting engineers, Amey Consulting Ltd, have recommended a flood protection scheme to reduce flood risk from the Craigie Burn at Queen's Avenue. It is proposed that this scheme is taken forward by the Council.

5.2 The recommended flood protection scheme involves two localised actions, as set out in section 4.22 of this report.

5.3 The proposed flood protection scheme is noted as Option 6 at 4.18 (and Option 11 in Appendices 1 & 2) of this report.

5.4 The Council will continue to manage flood risk in these areas by implementing the other actions set out in the published Tay FRM Plan and Local FRM Plan.

Next Steps

5.5 The Council will submit details of the proposed scheme to SEPA for prioritisation (within the national list of flood schemes) and inclusion within the Cycle 3 Tay FRM Plan and Local FRM Plan covering the period from 2028 - 2034. This process is essential to secure the necessary capital grant funding to design and construct the scheme.

5.6 The Cycle 3 Tay Local FRM Plan should set out the proposed implementation arrangements for the flood scheme at Queen's Avenue, Perth, including timescales and how it will be funded. However, due to the on-going Scottish Government/CoSLA review of capital funding for flood schemes, and the other schemes that the Council is already progressing, the timescales and funding arrangements remain unclear for the time being. The next phases of work to develop the flood scheme proposals will therefore not commence until this funding review provides further clarity around capital grant funding and provision is made within the Council's capital programme.

6. CONCLUSION

6.1 This report provides an update on the outcome of the Craigie Burn flood study.

6.2 The Council engaged consulting engineers to carry out this study, which was included within the Tay Flood Risk Management Strategy and Local Flood Risk Management Plan.

6.3 The Council's consulting engineers have recommended a flood protection scheme for the Craigie Burn at Queen's Avenue, Perth. The proposed scheme is economically viable, and the preliminary proposals consist of upgrading an existing culvert and channel modifications to reduce the risk of flooding from the Craigie Burn in Perth. This report, therefore, seeks the Committee's approval that the consulting engineer's recommended proposals be promoted as a flood scheme for the Craigie Burn, subject to funding.

Authors

Name	Designation	Contact Details
Peter Dickson Gavin Bissett	Interim Flooding Manager Engineer (Flooding)	01738 475000 ComCommitteeReports@pkc.gov.uk

Approved

Name	Designation	Date
Barbara Renton	Executive Director (Communities)	20 November 2023

APPENDICES

- Appendix 1 – Craigie Burn Flood Study – Short List of Potential Options
- Appendix 2 – Craigie Burn Flood Study – Recommended Option

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You can also send us a text message on 07824 498145.
All Council Services can offer a telephone translation facility.

ANNEX

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	**Yes / None**
Community Plan / Single Outcome Agreement	**Yes**
Corporate Plan	**Yes**
Resource Implications	
Financial	**Yes**
Workforce	**None**
Asset Management (land, property, IST)	**None**
Assessments	
Equality Impact Assessment	**Yes**
Strategic Environmental Assessment	**Yes**
Sustainability (community, economic, environmental)	**Yes**
Legal and Governance	**Yes**
Risk	**Yes**
Consultation	
Internal	**Yes**
External	**Yes**
Communication	
Communications Plan	**Yes**

1. Strategic Implications

Community Plan/Single Outcome Agreement

1.1 This report supports all of the priorities within the Community Plan 2022-27.

(ii) Mental and physical wellbeing
(v) Employability

Corporate Plan

1.2 This report supports the objectives within the draft new Corporate Plan:-

(i) Children and young people grow up safe, respected, well-educated, and confident in their ability to realise their full potential;
(ii) People and businesses are increasingly able to prosper in a local economy which support low carbon ambitions and offers opportunities for all;
(iii) People can achieve their best physical and mental health and have access to quality care and support when they need it;
(iv) Communities are resilient and physically, digital and socially connected;
(v) Perth and Kinross is a safe and vibrant place, mitigating the impact of climate and environmental change for this and future generations.

2. Resource Implications

Financial

2.1 It should be noted that the proposed flood protection scheme at Queen's Avenue, Perth will not be implemented at this time. The implementation arrangements (if known) will be set out in the Cycle 3 Tay Local FRM Plan, which will cover the six year period from 2028-2034 and is due to be published in June 2028. Subject to available funding, consulting engineers will be re-engaged to carry out further investigations and develop the flood scheme proposals at some time during 2028-2034. As a result, there are no immediate resource implications arising directly from the recommendations in this report.

2.2 However, the flood risk management planning process will have future financial implications. The Cycle 3 Tay Local FRM Plan will contain the implementation arrangements including a timetable for the proposed flood scheme, who will be responsible for implementing it, as well as how it will be funded (if known) and coordinated by SEPA and the responsible authorities over the next six-year cycle from 2028-2034.

2.3 The 2009 Act requires the Scottish Government to have regard to the FRM Plans and Local FRM Plans when allocating funds to SEPA and responsible authorities. The Scottish Government, CoSLA and SEPA agreed the distribution of capital funding to the actions identified nationally in the Cycle 1 FRM Strategies and Local FRM Plans. The following arrangements currently apply:

(i) Only works and schemes that are prioritised in the FRM Plans and Local FRM Plans are eligible for capital funding.
(ii) Flood protection schemes attract capital grant assistance of up to 80% of their estimated project cost at tender stage from the Scottish Government. Local authorities are required to fund the remainder of the cost of flood schemes.
(iii) The Scottish Government allocates capital funding to local authorities engaged in flood risk management across Scotland. 80% of this capital funding will continue to be allocated to flood protection schemes with the remaining 20% to other actions within the FRM Plans, as detailed in the Local FRM Plans. This 20% is distributed to the 32 Scottish local authorities based on the number of properties at risk of flooding and the estimated annual average flood damages.

2.4 At present, the allocated capital grant is adjusted as the flood scheme proposals are developed. The estimated costs of flood schemes across Scotland will therefore continue to be reported to the Scottish Government by local authorities on an annual basis.

2.5 These arrangements are currently under review by the Scottish Government and CoSLA, due to the current projected costs of Cycle 1 flood schemes across the country, and the available funding.

2.6 The Council currently has four flood protection schemes that had been included in the national priority list for Cycle 1 from 2016-2022 and work on them continues. However, as a result of the above review, the 4th priority flood scheme, on the Annaty Burn in Scone, has been paused. While this scheme may still progress in the future, it is likely to take longer to implement due to these funding limitations.

2.7 No capital funding has been allocated to any new Cycle 2 or 3 flood schemes in Scotland. The Council has not made an allocation for its 20% contribution to the capital costs at this time. The timescales and funding arrangements for the proposed new flood scheme at Queen's Avenue in Perth therefore remain unclear for the time being.

2.8 The conclusion of the national review into capital funding for flood schemes is awaited. In the meantime, COSLA leaders have confirmed that it is expected that the Local Government General Capital Grant will continue to include resources allocated for flooding projects, and decisions on quantum and distribution will be taken by Scottish Ministers and COSLA Leaders nearer the time.

2.9 The proposals and cost estimates for the recommended flood scheme at Queen's Avenue in Perth still have to be developed through a process of further investigations, consultation, outline design, the statutory process, detailed design, tendering and construction. Experience on other similar schemes has invariably shown that the costs estimated at feasibility stage always increase. The scheme costs noted in this report are therefore subject to change and will have to be carefully monitored going forward.

2.10 There are no current revenue funding implications arising from the recommendations in this report.

Workforce

2.11 There are no workforce implications arising directly from the recommendations in this report.

Asset Management (land, property, IT)

2.12 The proposals in this report have no asset management implications at this time.

3. Assessments

Equality Impact Assessment

3.1 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties. The Equality Impact Assessment undertaken in relation to this report can be viewed clicking here.

3.2 The proposals in this report have been considered under the Corporate Equalities Impact Assessment process (EqIA) with the following outcome:

(i) It was determined that the proposals be assessed as relevant with the following actions taken to reduce or remove the following negative impacts:

- The construction works for the proposed flood scheme could temporarily have a greater impact on mobility impaired, sight impaired, blind people or disabled people, on children and the elderly and infirm, and on pregnant women or nursing mothers, in relation to adverse psychological, physical and health impacts. Appropriate mitigation measures will be adopted to minimise disruption, noise, dust and vibration and to ensure adequate safe access throughout the construction works.

(ii) The proposals be assessed as **relevant** and the following positive outcomes expected following implementation:

- The proposed flood scheme will have the same positive impact for all equality groups as the reduction in flood risk to both communities will provide benefits for all (improved safety, health & wellbeing through the avoidance of flood impacts and damages) in the long term.

Strategic Environmental Assessment

3.3 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals.

3.4 The matters presented in this report were considered under the Environmental Assessment (Scotland) Act 2005 and no further action is required as it does not qualify as a PPS as defined by the Act and is therefore exempt.

3.5 It is likely that an Environmental Impact Assessment will be required to support the proposed flood scheme described in this report. This assessment will be progressed once consulting engineers have been engaged.

Sustainability

3.6 Under the provisions of the Local Government in Scotland Act 2003, the Council has to discharge its duties in a way which contributes to the achievement of sustainable development. Under the Climate Change (Scotland) Act 2009 the Council also has a duty relating to climate change and, in exercising its functions must act:

- in the way best calculated to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programmes; and
- in a way that it considers most sustainable.

3.7 Following an assessment using the Integrated Appraisal Toolkit, it was previously determined that the proposal is likely to contribute positively to the following corporate sustainable development principles:

(i) Climate Change

Efficient use of resources now and in the future in the built environment and service provision (e.g. energy efficiency, land, water resources, flood defence, waste minimisation) *(Principle 2)*
Mitigation and adaptation to manage the impact of climate change & reduce the production of greenhouse gases *(Principle 3)*

Justification:
The flood scheme proposed in this report will help to manage the increased flood risk in the Queens Avenue area of Perth brought about by climate change.

(ii) Community

Creating a sense of place (e.g. a place with a positive 'feeling' for people, and local distinctiveness) *(Principle 22)*

Justification:
The flood scheme proposed in the report will help to make the local community safer and more sustainable for residents, through a reduction in flood risk. This will help the communities to thrive in the longer term despite the temporary construction impacts.

3.8 Following an assessment using the Integrated Appraisal Toolkit, it was previously determined that the proposal is likely to contribute negatively to the following corporate sustainable development principles:

(iii) Consumption and Resources

Efficient use of resources now and in the future in the built environment and service provision (e.g. energy efficiency, land, water resources, flood defence, waste minimisation) *(Principle 2)*
Mitigation and adaptation to manage the impact of climate change & reduce the production of greenhouse gases *(Principle 3)*

Justification:
There will be a short-term increase in the use of materials and resources during construction of the flood scheme, but a future reduction due to reduced flood risk.

Mitigation:
The Environmental Impact Assessment and eventual Construction Environmental Management Plan will consider energy consumption and waste management practices during construction.

Legal and Governance

3.9 The Head of Legal and Governance has been consulted on this report.

3.10 The legal basis for the proposals set out in this report in the Flood Risk management (Scotland) Act 2009.

Risk

3.11 Flooding is a natural phenomenon that can never be entirely prevented. However, the Council is required to manage and, where possible, reduce flood risk.

3.12 The flood scheme proposed in this report will reduce flood risk from the Craigie Burn in Perth. The risks associated with the proposals set out in this report will be identified and managed through this individual project.

4. Consultation

Internal

4.1 The Head of Legal and Governance and the Head of Finance have been consulted in the preparation of this report.

External

4.2 SEPA, Scottish Water and all relevant landowners and occupiers were consulted on the development of the proposals.

4.3 In June 2023, a letter was issued to the local elected members, and 585 letters were sent to residents and businesses within the local community. This letter directed residents to the Council's consultation hub, invited them to the drop-in sessions, and outlined an opportunity to record their views and questions on comment forms. Social media posts were also arranged through the Council's communications team.

4.4 A summary of the draft outputs from the flood study was placed on the Council's consultation hub at https://consult.pkc.gov.uk/communities/craigieburn from 16 June to 16 July 2023 to allow the community to view and comment on the study findings. This provided detail on:

- the risk of flooding from the Craigie Burn in Perth;
- the outcome of the Council's flood study;
- work to raise awareness of flooding and to help the local community to become more prepared and resilient to deal with flooding.

4.5 Community drop-in sessions were held at the Dewars Centre, Perth from 2pm to 8pm on 20 June and 28 June 2023. These events offered residents the opportunity to view and comment on the draft outputs from the flood study. Representatives from the Council's Flooding Team and Amey were available at the events to answer questions and provide further information. SEPA, Scottish Water and the Scottish Flood Forum also attended the first community drop-in session held on 20 June 2023. A total of 60 residents recorded their attendance at the drop-in sessions.

4.6 A total of 50 responses were provided as a mixture of e-mails and completed comment forms.

4.7 Understandably, the community expressed frustration that it is not possible to implement more actions to manage the flood risk across the catchment. A wide range of comments were received covering different concerns. Queries were received regarding the study process, including the hydrology and modelling work, as well as the options appraisal. Comments were also received regarding the existing Perth Flood Protection Scheme and on-going maintenance within the catchment. Comments were also received regarding development within the catchment, and its perceived impact on flood risk.

4.8 The Council has collated all comments and will issue a response to the community answering all questions raised during the online consultation period. The Council's consultation hub will also be updated to confirm the outcome of this process. Unfortunately, the conclusion of this work has been delayed due to widespread flooding across the Council area in recent weeks.

5. Communication

5.1 The communication arrangements to date were as noted in Section 4 above.

5.2 The Council will continue to communicate with the local community, statutory consultees, local landowners and other stakeholders as the scheme proposals are developed.

2. BACKGROUND PAPERS

2.1 The following background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (and not containing confidential or exempt information) were relied on to a material extent in the preparation of the above report;

- PKC – Environment Committee – 9 September 2015, The Flood Risk Management (Scotland) Act 2008, Selected Actions and Prioritisation (Report No 15/359)
- PKC – Environment Committee – 1 June 2016, The Flood Risk Management (Scotland) Act 2008, Publication of Local Flood Risk Management Plans (Report No 16/241)
- PKC - Environment and Infrastructure Committee – 23 January 2019, The Flood Risk Management (Scotland) Act 2009, Publication of Interim Report (Report No 19/16)
- PKC - Environment and Infrastructure Committee – 19 May 2021, The Flood Risk Management (Scotland) Act 2009, Second Cycle of Flood Risk Management Plans (Report No 21/60)
- PKC - Climate Change & Sustainability Committee – 19 December 2022, The Flood Risk Management (Scotland) Act 2009, Publication of Final Reports (Cycle 1) & Local Flood Risk Management Plans (Cycle 2) (Report No 22/307)

Appendix 1 - Short-listed Options

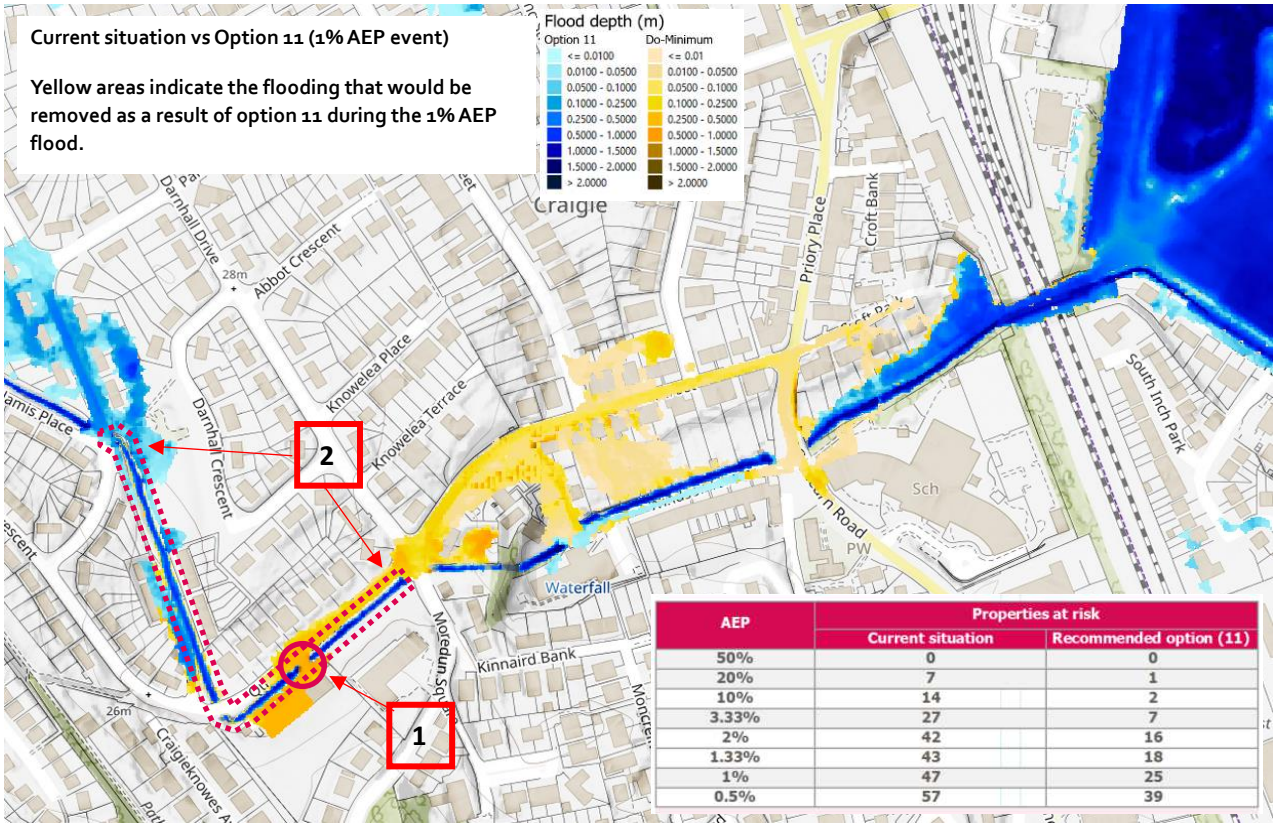
	Option Description	Progress to Modelling?	Progress to Further Evaluation?	Capital Cost (£M)	Benefit/Cost Ratio (BCR)
1	Upstream flood storage and natural flood management south of M90	Yes	Yes	Not fully costed as required land take (10% of upper catchment) to achieve benefit would take BCR significantly below 1.	
2	Improve drainage on M90 and Broxden area	Ruled out prior to modelling as no data available from Trunk Road operator. To be investigated further as part of the Perth Surface Water Management Plan.			
3	Increase flood storage at existing Perth Flood Scheme 'wet' ponds, Glasgow Road	Yes	Yes	£0.47M	0.66
4	Increase flood storage at existing Perth Flood Scheme 'dry' pond, Glasgow Road	Yes	Ruled out due to increased flood risk in more frequent flood events (1 in 5-year and 1 in 10-year floods)		
5	Culvert upsizing and flood storage area, Necessity Brae (Cherrybank)	Yes	Ruled out as only provides limited localised benefit at high cost		
6	Culvert upgrade, Buckie Brae	Ruled out prior to modelling – would increase flood risk; main issue is blockage, not capacity			
7	Channel modification (dredging) Buckie Braes to South Inch	Yes	Yes	£0.21M	1.0 (was found to be of limited benefit; additional costs for culvert upgrades and bank stabilisation would reduce BCR well below 1.0)
8	Flood storage area, Low Road to Orchard Place	Yes	Yes	£0.55M	0.60
9	New flood defences, Orchard Place	Yes	Ruled out due to limited benefit		

10	Improve culvert capacity, Queen's Avenue	Yes	Yes	£0.27M	1.39
11	Improve culvert capacity, Queens Avenue and modify adjacent river channel	Yes	Yes	£0.31M	1.42
12	New flood defences, Croft Park & improve Craigie Burn to South Inch reservoir spill mechanism	Yes	Ruled out due to high cost and increased flood risk from reservoir in extreme flood events		
13	Improve Craigie Burn to South Inch reservoir spill mechanism	Yes	Yes	£0.31M	0.88
14	Options 11+13 combined	Yes	Yes	£0.62M	1.0 (not considered a robust enough economic case at this stage).

Location Plan of Short-Listed Actions

Appendix 2 – Recommended Option

Recommended Option –
Culvert upgrade and channel modification (Balmoral Place & Queen's Avenue).



AEP	Properties at risk	
	Current situation	Recommended option (11)
50%	0	0
20%	7	1
10%	14	2
3.33%	27	7
2%	42	16
1.33%	43	18
1%	47	25
0.5%	57	39

The flood study recommends Option 6 (Option 11 in the flood study report) which consists of the following two actions:

1. Upgrading the culvert on the Craigie Burn beneath the road access to Queen's Court. This will involve replacing the existing culvert (which consists of twin 800mm diameter pipes) with a new larger box culvert (2.65m x 1.4m in size) to increase its flow capacity.

2. Localised channel modifications on the Craigie Burn. This will involve removing 200mm of riverbed material (extending from downstream of Murray Crescent to the culvert at Craigie Knowes Road) to increase channel flow capacity.

The recommended option will increase the estimated channel flow capacity at Queen's Avenue from the current 1 in 5-year flood to the predicted 1 in 100-year flood event. This will remove the area of flooding shown in yellow on the above 1 in 100-year flood map.

The estimated capital cost is **£0.314m**, with a benefit/cost ratio of **1.42**.

PERTH AND KINROSS COUNCIL

Climate Change & Sustainability Committee

27 November 2023

SOUTH KINROSS FLOOD PROTECTION SCHEME

Report by Head of Environmental & Consumer Services
(Report No. 23/332)

1. PURPOSE

1.1 This report provides an update on the progress of the Council's investigations into a potential flood protection scheme in Kinross. The report proposes that the Committee approves the preferred scheme, and that it is developed further through the statutory process, detailed design and eventual construction.

2. RECOMMENDATIONS

2.1 It is recommended that Committee:

(i) notes that the development of a flood protection scheme for South Kinross is consistent with the published Forth Estuary Flood Risk Management Plan and Local Flood Risk Management Plan.

(ii) notes the progress on the development of the proposed South Kinross Flood Protection Scheme.

(iii) notes that the flood scheme proposals were put to public consultation in September and October 2023.

(iv) approves that the recommended proposals are adopted as the Council's preferred flood scheme.

(v) agrees that the recommended scheme be published under the Flood Risk Management (Scotland) Act and, subject to obtaining statutory approval and funding remaining in place, progress to detailed design and construction.

(vi) notes the 31 March 2024 deadline for the publication of the South Kinross Flood Protection Scheme under the Flood Risk Management (Scotland) Act, to comply with current capital flood grant requirements.

(vii) notes that, subject to the scheme being confirmed under the 2009 Act, the same legislation ensures that planning consent will be deemed to have been granted.

3. STRUCTURE OF REPORT

3.1 This report is structured over the following sections:

- Section 4: Background/Main Issues
- Section 5: Proposals
- Section 6: Conclusion
- Appendices

4. BACKGROUND / MAIN ISSUES

4.1 The approach to tackling flooding in Scotland has changed in recent years. Under the Flood Risk Management (Scotland) Act 2009, SEPA and lead local authorities have published Flood Risk Management (FRM) Plans and Local FRM Plans. These documents set out a range of actions that SEPA and responsible authorities will take to manage and, where possible, reduce the risk of flooding over a six-year period.

4.2 Although public authorities are expected to take a proactive role in managing and, where achievable, lowering flood risk, the primary responsibility for avoiding or managing flood risk still remains with land and property owners. The 2009 Act does not alter this. Individuals, businesses and communities must, therefore, play a critical role in making themselves more resilient and helping to reduce the impact of flooding.

4.3 The Climate Change and Sustainability Committee approved the publication of the updated Forth Estuary Local FRM Plan on 19 December 2022 (Report 22/302 refers). The Committee also approved the publication of a Final Report, which provided an update on progress on the South Kinross flood protection Scheme at that time. The published documents can be viewed at the following link: http://www.pkc.gov.uk/frmplans.

4.4 Since the publication of the FRM Plans and Local FRM Plans, the Council has been progressing with the implementation of the actions set out therein.

4.5 The 2009 Act provides local authorities with discretionary powers to promote new flood protection schemes. Only those flood schemes which have been included in the published FRM Plans, the Local FRM Plans, and the national priority list will be taken forward in the six-year period.

4.6 One of the key actions included within the Forth Estuary Local FRM Plan is to implement a flood protection scheme in South Kinross. The flood scheme was originally included as the 28th highest priority scheme on the national priority list.

4.7 This scheme, therefore, attracts capital grant assistance. In general, the Scottish Government will provide 80% of the project cost (at tender stage) with the Council contributing the remaining 20%.

4.8 Recent changes to the Scottish Government and COSLA funding arrangements have introduced deadlines for flood protection schemes. All Cycle 1 flood schemes must be published under the Flood Risk Management (Scotland) Act by 31 March 2024 in order to continue to attract capital grant assistance.

Flood Risk Management in Kinross

4.9 Kinross is located in the River Leven catchment within Potentially Vulnerable Area (PVA) 02/10/03. There are three watercourses in this area - the South Queich, the Gelly Burn and the Clash Burn – which all flow into Loch Leven to the east.

4.10 There has been a history of flooding in the town. It is estimated that 194 businesses and residential properties are currently at risk of flooding.

4.11 Consulting engineers, Mouchel, were previously engaged to carry out a flood study for South Kinross. The flood study considered various potential options for a flood scheme including:

- the use of flow controls (at the M90 motorway) and managed flooding on upstream farmland.
- flood defences (flood walls and embankments, river channel widening, etc).
- a new river channel to divert the South Queich and Gelly Burn directly to Loch Leven (bypassing the town).
- flood storage.
- catchment land management
- partial diversion of the Clash Burn to the South Queich
- various combinations of the above.

The flood study concluded that a flood scheme involving walls and embankments would be economically viable.

4.12 The flood scheme was, therefore, included in the original Forth Estuary FRM Strategy and Local FRM Plan for Cycle 1 (2016-2022) and the national priority list of flood schemes.

4.13 Consulting engineers, RPS, were engaged in February 2019 to develop the proposals set out in the existing flood study and to deliver a flood scheme for the area. Extensive investigations have been undertaken, including data gathering and analysis, consultations, topographic surveys, a hydrological assessment, the development of a new hydraulic model and further hydraulic modelling work, ground investigations, public utility investigations, outline design work, an environmental impact assessment, an economic appraisal and the production of reports.

4.14 The original flood study focussed on the flood risk from the South Queich and the Gelly Burn. However, further flood modelling work confirmed the need to manage flooding on the Clash Burn and the risk to the M90 services at Turfhills from further upstream on the South Queich.

4.15 RPS considered several options for managing flood risk within Kinross. These options were appraised on technical, environmental and economic grounds. The flood risk management options considered are summarised in Appendix A.

4.16 The flood scheme recommended by RPS involves the construction of flood walls and embankments along the South Queich, culvert improvements on the Clash Burn and a flood storage embankment adjacent to the M90 motorway services at Turfhills. Property flood resilience measures will be adopted for a small number of properties next to Loch Leven.

4.17 The proposed scheme has been designed to protect properties up to the predicted 1 in 200-year flood event (the flood that has a 0.5% chance of occurring in any one year).

4.18 In order to make the scheme adaptable to the effects of future climate change, the foundations for the proposed flood defences will be designed to allow them to be raised in the future. The proposed improvements to the Clash Burn culverts will also be designed to allow for future climate change.

4.19 The estimated cost of the scheme has increased considerably due to the need for more extensive flood defences and recent construction cost inflation. The scheme is now estimated to have a capital cost over the financial years to 2025/2026 of £15.3M.

4.20 As noted in 4.7, the Scottish Government normally provides capital grant of up to 80% of the costs of the scheme (at tender stage) and the Council's contribution is expected to be 20%. As such, consideration of funding for the Scheme will need to be undertaken by both the Scottish Government and the Council, as part of its capital budget discussions.

4.21 The Benefit Cost Ratio (BCR) of the Scheme at this cost is 1.1. This value estimates that the economic benefits accrued over the lifetime of the Scheme, through the avoidance of flood damages, is greater than the estimated cost of the Scheme.

4.22 The recommended flood scheme, and the alternative options that were considered, were put to public consultation in September and October 2023. The details can be viewed at the following link:- https://consult.pkc.gov.uk/communities/southkinrossfloodscheme/

4.23 In general, the response from the community and key stakeholders to the recommended scheme was positive. Their responses will continue to inform the future design and development of the proposals for the flood protection scheme.

5. PROPOSALS

5.1 The consulting engineers have recommended a flood scheme involving flood walls, embankments and culvert upgrades. It is proposed that this is adopted as the Council's preferred flood scheme. This will allow the Council to focus on this option and to promote it as the South Kinross Flood Protection Scheme.

5.2 The preferred flood scheme is shown in Appendix B. The proposed scheme includes the provision of approximately 1,019m of new flood walls and 365m of flood embankments along the South Queich, Gelly Burn and Clash Burn.

Next Steps

5.3 It is proposed that the flood scheme be published under the Flood Risk Management (Scotland) Act 2009. This will require to be undertaken prior to the deadline of 31 March 2024, to meet recent changes in capital grant requirements. This will provide the Council with the legal powers to construct the flood scheme.

5.4 Subject to the scheme being confirmed under the 2009 Act, the same legislation ensures that planning consent will be deemed to have been granted.

5.5 It is proposed that the scheme will then be designed in detail, put out to tender and eventually constructed.

5.6 The recent changes to the Scottish Government and COSLA funding arrangements have introduced a further deadline for flood protection schemes. All Cycle 1 flood schemes must have a works contractor appointed by 31 March 2026 to continue to attract capital grant assistance.

6. CONCLUSION

6.1 This report provides an update on the development of the proposals for the South Kinross Flood Protection Scheme.

6.2 The Council's consulting engineers have recommended a flood protection scheme consisting of flood walls, embankments, culvert improvements and property resilience measures. This form of scheme is economically viable.

6.3 The report seeks the Committee's approval that the consulting engineer's recommended proposal be adopted as the Council's preferred scheme, and that the preferred scheme be published under the Flood Risk Mangement (Scotland) Act.

Authors

Name	Designation	Contact Details
Peter Dickson	Flooding Manager	01738 475000 ComCommitteeReports@pkc.gov.uk
Rory Stuart	Engineer, Flooding Team	

Approved

Name	Designation	Date
Barbara Renton	Executive Director (Communities)	20 November 2023

APPENDICES

- Appendix A – Summary of Potential Flood Scheme Options Considered
- Appendix B – Plan of Recommended Flood Scheme

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You can also send us a text message on 07824 498145.

All Council Services can offer a telephone translation facility.

ANNEX

1. IMPLICATIONS, ASSESSMENTS, CONSULTATION AND COMMUNICATION

Strategic Implications	**Yes / None**
Community Plan / Single Outcome Agreement	**Yes**
Corporate Plan	**Yes**
Resource Implications	
Financial	**Yes**
Workforce	**None**
Asset Management (land, property, IST)	**None**
Assessments	
Equality Impact Assessment	**Yes**
Strategic Environmental Assessment	**Yes**
Sustainability (community, economic, environmental)	**Yes**
Legal and Governance	**Yes**
Risk	**Yes**
Consultation	
Internal	**Yes**
External	**Yes**
Communication	
Communications Plan	**Yes**

1. Strategic Implications

Community Plan/Single Outcome Agreement

1.1 This report supports the following priorities within the Community Plan 2022-27.

(ii) Mental and physical wellbeing
(v) Employability

Corporate Plan

1.2 This report supports the objectives within the Corporate Plan:-

(i) Children and young people grow up safe, respected, well-educated, and confident in their ability to realise their full potential;
(ii) People and businesses are increasingly able to prosper in a local economy which support low carbon ambitions and offers opportunities for all;
(iii) People can achieve their best physical and mental health and have access to quality care and support when they need it;
(iv) Communities are resilient and physically, digital and socially connected;
(v) Perth and Kinross is a safe and vibrant place, mitigating the impact of climate and environmental change for this and future generations.

2. Resource Implications

Financial

2.1 The 2009 Act requires the Scottish Government to have regard to the FRM Plans and Local FRM Plans when allocating funds to SEPA and responsible authorities. The Scottish Government, CoSLA and SEPA agreed the distribution of capital funding to the actions identified nationally in the Cycle 1 FRM Strategies and Local FRM Plans. The following general arrangements currently apply:

1. Only works and schemes that are prioritised in the FRM Plans and Local FRM Plans are eligible for capital funding.
2. Flood protection schemes attract capital grant assistance of up to 80% of their estimated project cost at tender stage from the Scottish Government. Local authorities are required to fund the remainder of the cost of flood schemes.
3. The Scottish Government allocates capital funding to local authorities engaged in flood risk management across Scotland. 80% of this capital funding will continue to be allocated to flood protection schemes with the remaining 20% to other actions within the FRM Plans, as detailed in the Local FRM Plans. This 20% is distributed to the 32 Scottish local authorities based on the number of properties at risk of flooding and the estimated annual average flood damages.

2.2 At present, the allocated capital grant is adjusted as flood scheme proposals are developed. The estimated costs of flood schemes across Scotland will therefore continue to be reported to the Scottish Government by local authorities on an annual basis.

2.3 These arrangements will come to an end in 2026/27 and are currently under on-going review by the Scottish Government and CoSLA, due to the current projected costs of Cycle 1 flood schemes across the country, and the available funding.

2.4 In the meantime, the Scottish Government and COSLA Leaders have recently introduced two new deadlines to this process :

- Any Cycle 1 schemes not published by 31 March 2024 will no longer be funded.
- Any Cycle 1 schemes that haven't appointed a main works contractor by 31 March 2026 will no longer be funded.

2.5 The Council currently has four flood protection schemes that had been included in the national priority list for Cycle 1 from 2016-2022 and work on them continues. However, as a result of the above review, the 4th priority flood scheme, on the Annaty Burn in Scone, has been paused. While this scheme may still progress in the future, it is likely to take longer to implement due to these funding limitations.

2.6 The conclusion of the national review into capital funding for flood schemes is awaited. In the meantime, COSLA leaders have confirmed that it is expected that the Local Government General Capital Grant will continue to include resources allocated for flooding projects, and decisions on quantum and distribution will be taken by Scottish Ministers and COSLA Leaders nearer the time.

2.7 The South Kinross Flood Protection Scheme has been prioritised in the published Forth Estuary Flood Risk Management (FRM) Plan and Local FRM Plan. The flood scheme is therefore receiving Scottish Government capital grant assistance, and this will continue up to 80% of its value at tender stage (provided the above deadlines are met). The Council is required to fund the remainder of the cost of the scheme, assuming it remains economically viable.

2.8 Although some funding for the scheme is in place, this is no longer sufficient to meet the current cost estimate. Additional funding is being sought for the scheme from the Scottish Government and the Council's Capital Programme. This is discussed further in 2.9 - 2.11 below.

2.9 It should also be noted that the implementation of the flood scheme will be some time away. The current outline design for the proposed scheme requires further development as part of the detailed design process and statutory consents require to be obtained. Construction is anticipated to commence in 2025, assuming no further delay to the statutory process and the detailed design programme.

Capital

2.10 The estimated capital cost of the flood scheme over the financial years to 2025/26 has increased to £15.3m. The current funding in place of £3.7m is insufficient to meet this and so additional funding of £11.6m is being sought from the Scottish Government and within the Council's Capital Programme.

2.11 Clearly the issue of funding support from central government will continue to have a significant bearing on when the Council will be able to deliver the flood scheme. The scheme can only be implemented if sufficient capital funding is made available and remains in place.

2.12 In the meantime, the estimated costs of flood schemes across Scotland continue to be reported to the Scottish Government by local authorities on an annual basis.

Revenue

2.13 The on-going maintenance costs for the scheme are estimated at £38,000 per annum. This additional cost will need to be considered through the Council's budget process once the scheme has been completed.

Workforce

2.14 The project management of the flood scheme will be undertaken by the Council's Flooding Team. There will be an on-going resource implication for Legal and Property Services for technical assistance required throughout the remaining duration of the project.

Asset Management (land, property, IT)

2.15 In order to construct the proposed scheme there will be a requirement to purchase land and/or provide compensation to relevant landowners. Property Services have been consulted on the scheme and a landownership plan has been produced to inform on-going negotiations with relevant landowners.

3. Assessments

Equality Impact Assessment

3.1 Under the Equality Act 2010, the Council is required to eliminate discrimination, advance equality of opportunity, and foster good relations between equality groups. Carrying out Equality Impact Assessments for plans and policies allows the Council to demonstrate that it is meeting these duties. The Equality Impact Assessment undertaken in relation to this report can be viewed clicking here.

3.2 The proposals in this report have been considered under the Corporate Equalities Impact Assessment process (EqIA) with the following outcome:

(i) It was determined that the proposals be assessed as relevant with the following actions taken to reduce or remove the following negative impacts:

- The construction works for the proposed flood scheme could temporarily have a greater impact on mobility impaired, sight impaired, blind people or disabled people, on children and the elderly and infirm, and on pregnant women or nursing mothers, in relation to adverse psychological, physical and health impacts. Appropriate mitigation measures will be adopted to minimise disruption, noise, dust and vibration and to ensure adequate safe access throughout the construction works.

(ii) The proposals be assessed as **relevant** and the following positive outcomes expected following implementation:

- The proposed flood scheme will have the same positive impact for all equality groups as the reduction in flood risk to South Kinross will provide benefits for all (improved safety, health & wellbeing through avoidance of flood impacts and damages) in the long-term.

Strategic Environmental Assessment

3.3 The Environmental Assessment (Scotland) Act 2005 places a duty on the Council to identify and assess the environmental consequences of its proposals.

3.4 The matters presented in this report were considered under the Environmental Assessment (Scotland) Act 2005 and no further action is required as it does not qualify as a PPS as defined by the Act and is therefore exempt.

3.5 As outlined in this report, an Environmental Impact Assessment Report (EIAR) was produced for the Scheme. The EIAR identified that the Scheme has some associated impacts that would arise as a result of its construction and future use. Mitigation measures have been identified with a view to reducing, managing and minimising those impacts.

Sustainability

3.6 Under the provisions of the Local Government in Scotland Act 2003 the Council has to discharge its duties in a way which contributes to the achievement of sustainable development. Under the Climate Change (Scotland) Act 2009 the Council also has a duty relating to climate change and, in exercising its functions must act:

- in the way best calculated to delivery of the Act's emissions reduction targets;
- in the way best calculated to deliver any statutory adaptation programmes; and
- in a way that it considers most sustainable.

3.7 Following an assessment using the Integrated Appraisal Toolkit, it has been determined that the proposal is likely to contribute positively to the following corporate sustainable development principles:

(i) Climate Change

Efficient use of resources now and in the future in the built environment and service provision (e.g. energy efficiency, land, water resources, flood defence, waste minimisation) *(Principle 2)*
Mitigation and adaptation to manage the impact of climate change & reduce the production of greenhouse gases *(Principle 3)*

Justification:
The flood scheme proposed in this report will significantly reduce flood risk in South Kinross and will therefore help in tackling the effects of climate change.

(ii) Community

Creating a sense of place (e.g. a place with a positive 'feeling' for people, and local distinctiveness) *(Principle 22)*

Justification:
The flood scheme will help to make the local community safer and more sustainable for residents, through a reduction in flood risk. This will help the community to thrive in the longer term despite the temporary construction impacts.

3.8 Following an assessment using the Integrated Appraisal Toolkit, it has been determined that the proposal is likely to contribute negatively to the following corporate sustainable development principles:

(iii) Consumption and Resources
Efficient use of resources now and in the future in the built environment and service provision (e.g. energy efficiency, land, water resources, flood defence, waste minimisation) *(Principle 2)*
Mitigation and adaptation to manage the impact of climate change & reduce the production of greenhouse gases *(Principle 3)*

Justification:
There will be a short term increase in the use of materials and resources during construction of the flood scheme, but a future reduction due to reduced flood risk.

Mitigation:
The Environmental Impact Assessment and eventual Construction Environmental Management Plan will consider energy consumption and waste management practices during construction.

<u>Legal and Governance</u>

3.9 The Head of Legal and Governance has been consulted on this report.

3.10 The Scheme of Administration authorises the Climate Change & Sustainability Committee delegated powers to exercise the Council's functions in relation to matters concerning The Flood Risk Management (Scotland) Act 2009 for which this report is applicable. However, given the current circumstances this matter is brought to the Council for consideration.

Risk

3.11 Flooding is a natural phenomenon that can never be entirely prevented. However, the Council is required to manage and, where possible, reduce overall flood risk.

3.12 The flood scheme proposed in this report will reduce flood risk from the South Queich, the Gelly Burn and the Clash Burn in South Kinross. The risks associated with the proposal will be managed through appropriate communication and project management.

4. Consultation

Internal

4.1 The Head of Legal and Governance and the Head of Finance have been consulted in the preparation of this report.

4.2 The local elected members, Planning, Estates, Land Quality, Environmental Health, Structures Team and the Council's Biodiversity Officer were consulted during the development of the proposals.

External

4.3 Kinross Community Council, Kinross Flooding Resilience Group, SEPA, Scottish Water, NatureScot, Historic Environment Scotland and all relevant landowners and occupiers were consulted during the development of the proposals.

4.4 Two community drop-in sessions were held in Kinross on 28 September and 5 October 2023. The aim of these events was to provide the local community with further information on:-

- the risk of flooding in South Kinross;
- the Council's proposals for a flood scheme;
- work to raise awareness of flooding and to help the local community to become more prepared and resilient to deal with flooding.

4.5 A letter was issued to elected members, the Community Council and the Kinross Flood Resilience Group summarising the work carried out by the consulting engineers and how flood risk will be managed in the future. 352

letters were sent to local residents and businesses within the community to advertise the events. Approximately 41 people attended the community drop-in sessions.

4.6 The drop-in sessions included a central display, a presentation and a series of plans of the scheme options. Representatives from the Council's flooding team, RPS, and the Scottish Flood Forum were available to answer questions and provide further information. Those attending were given an opportunity to record their views and questions on comment forms. 12 comment forms were returned to the Council after the sessions.

4.7 In general, the impression received from the drop-in sessions was that the local community where in favour of the preferred flood scheme (walls, embankments and culvert improvements). The majority of the returned comment forms also indicated general approval for this option.

4.8 The Council will issue a response to the community to answer any questions raised during the drop-in sessions or on comment forms.

4.9 The public consultation materials used at the drop-in sessions can still be viewed on the Council's website and on the Council's consultation hub:

http://www.pkc.gov.uk/southkinrossfloodscheme
https://consult.pkc.gov.uk/communities/southkinrossfloodscheme/

The written response to the community (to answer any questions raised) will be uploaded to this webpage as well.

5. Communication

5.1 The communication arrangements to date were as noted in Section 4 above

5.2 The Council will continue to communicate with the local community, statutory consultees, local landowners and other stakeholders as the scheme proposals are developed. The above noted website will continue to be updated and further letters and newsletters will be issued to the local community as appropriate.

2. BACKGROUND PAPERS

2.1 The following background papers, as defined by Section 50D of the Local Government (Scotland) Act 1973 (and not containing confidential or exempt information) were relied on to a material extent in the preparation of the above report;

- PKC – Enterprise and Infrastructure Committee – 24 October 2007, Flood Mitigation Schemes and Flood Studies (Report No 07/681)
- PKC – Environment Committee – 30 January 2008, Biennial Report on Flood Prevention Responsibilities 2007 (Report No 08/41)
- PKC – Environment Committee – 4 November 2009, Biennial Report on Flood Prevention Responsibilities 2009 (Report No 09/504)
- PKC – Environment Committee – 21 March 2012, Biennial Report on Flood Prevention (Report No 12/135)
- PKC – Environment Committee – 20 November 2013, Progress Report Flood Risk Management (Scotland) Act 2009 (Report No 13/544)
- PKC – Environment Committee – 12 November 2014, The Flood Risk Management (Scotland) Act 2009, Short List of Potential Measures to Manage Flood Risk (Report No 14/483)
- PKC – Environment Committee – 9 September 2015, The Flood Risk Management (Scotland) Act 2009, Selected Actions and Prioritisation (Report No 15/359)
- PKC – Environment Committee – 1 June 2016, The Flood Risk Management (Scotland) Act 2009, Publication of Local Flood Risk Management Plans (Report No 16/241)
- PKC – Environment and Infrastructure Committee – 23 January 2019, The Flood Risk Management (Scotland) Act 2009 Publication of Interim Report (Report No 19/16)
- PKC – Climate Change and Sustainability Committee – 19 May 2021, The Flood Risk Management (Scotland) Act 2009: Second Cycle of Flood Risk Management Plans (Report No 21/60)
- PKC – Climate Change and Sustainability Committee – 19 December 2022, The Flood Risk Management (Scotland) Act 2009: Publication of Final Reports (Cycle 1) & Local Flood Risk Management Plans (Cycle 2) (Report No 22/307)

Appendix A - Summary of Potential Flood Scheme Options Considered

A number of potential actions have been considered to determine if they would be suitable as part of the proposed flood scheme. The actions were assessed on technical, environmental, social, and economic grounds to arrive at the recommended scheme. Some of the actions have also been assessed in combination to determine if this could provide an improved solution when compared to one action in isolation.

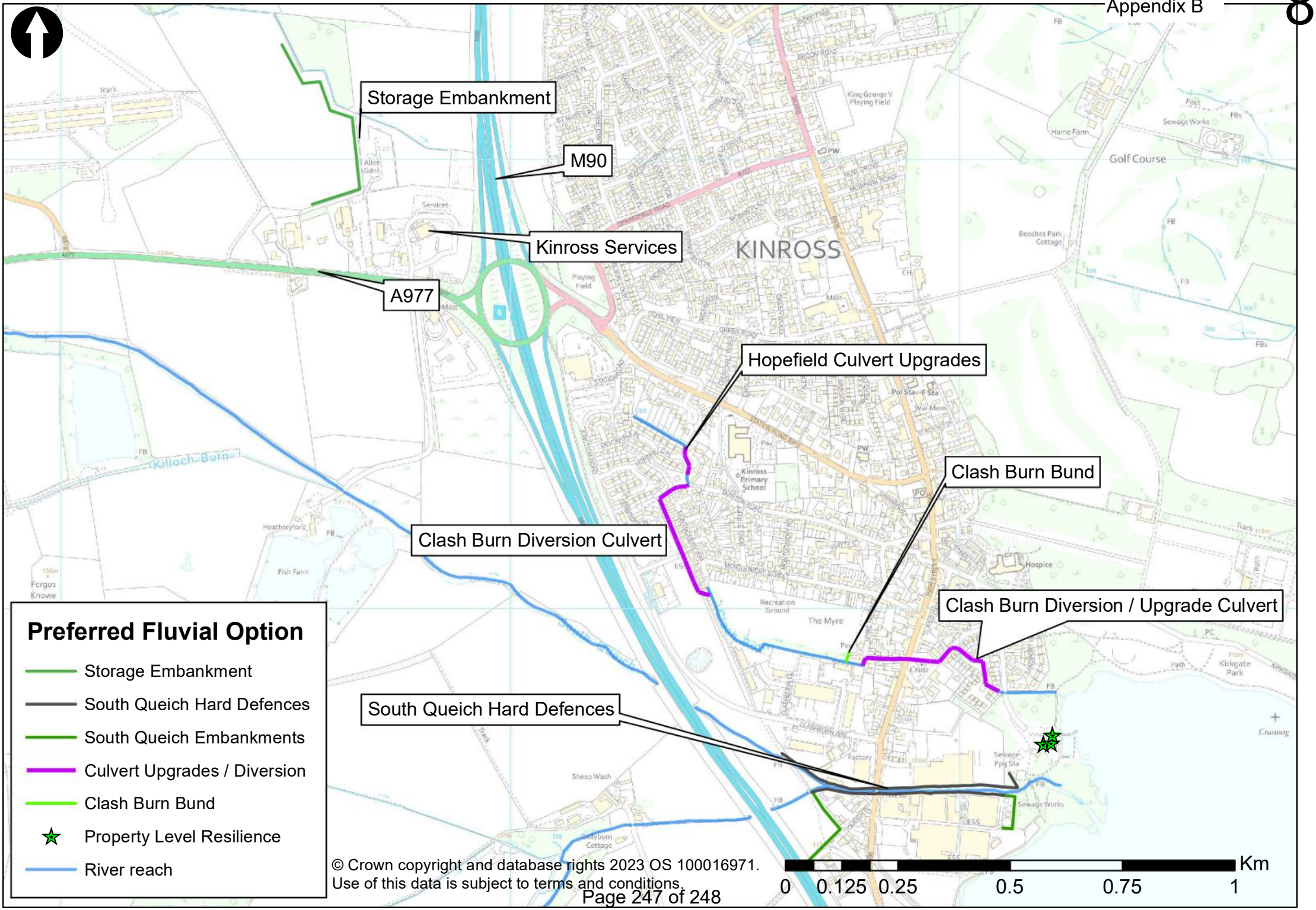
Potential Option	Description	Comment
The use of flow controls (at the M90 motorway) and managed flooding on upstream farmland.	Restricting the capacity of the existing culverts under the M90 motorway and utilising the M90 motorway embankment was considered as a possible way of alleviating flooding to South Kinross.	This option was ruled out due to doubt over the feasibility and cost of this option.
Flood walls and embankments	Flood walls and embankments built along rivers can defend properties from high water levels. The heights of the defences are determined by predicted flood levels, local ground levels and calculated freeboard (an allowance for uncertainty and a safety factor).	This action has been taken forward for the South Queich.
Improvement of Channel Conveyance	The limited capacity of river channels and culverts has been identified as contributing to flooding. Improvements would require increasing the capacity of the infrastructure to allow water to pass more freely without causing flooding.	The proposed scheme includes improvements to existing culverts to increase the flow capacity and alleviate flooding at key points on the Clash Burn.
A new river channel to divert the South Queich and Gelly Burn directly to Loch Leven (bypassing the town).	A diversion channel was considered which would have been designed to divert flood water from the Gelly Burn directly into Loch Leven, thereby bypassing Kinross and the confluence of the South Queich.	The action was ruled out based upon the flood walls and embankment options having a higher cost benefit ratio.
Online/offline flood storage	Where space is available, excess flood water can be temporarily stored upstream to reduce	While no suitably large areas were identified which could store sufficient flood water, a

	flooding further downstream. The flood water can be released at a slower rate after the flood peak to protect properties further downstream. Areas that can typically be utilised include public parks, sports fields or agricultural land.	suitable area of upstream flood storage was identified to reduce the risk to the Kinross Services. This action has been taken forward for this area.
Partial diversion of the Clash Burn to the South Queich	The possibility of diverting the Clash Burn into the South Queich upstream of Smith Street was explored.	Although this option is technically feasible, it would only provide a partial solution to problems around Smith Street and was later ruled out in favour of culvert improvements.
Dredging	The hydraulic model was used to investigate the benefit of dredging the South Queich.	This action was ruled out as significant depths of dredging would be needed to achieve the required standard of flood protection and this was not found to be feasible. Dredging would also have to be repeated every 10 years to maintain riverbed levels and hence would require significant funding on an on-going basis.
Natural flood management	Natural flood management involves altering land management practices upstream to slow or store the flow of water into watercourses. This reduces flood risk and provides environmental and biodiversity improvements. An NFM study was carried out in the catchment to consider various measures including woodland creation, leaky barriers, floodplain reconnection, improved land management and buffer strips and hedges.	NFM measures would provide a standard of protection significantly below the 1 in 200 year flood (0.5% AEP). This action would require extensive work with upstream landowners and would not reduce flood levels sufficiently to work in isolation. This option would also take a number of years to implement fully. The use of natural flood management as an option has therefore been ruled out as part of this scheme.
Property flood resilience	Various flood products are available to protect properties or make them more resilient to the potential ingress of flood water through doors,	This action was ruled out for the majority of the area but will be taken forward for properties where there is no other viable solution, e.g. some properties adjacent to Loch Leven.

	windows, brickwork and sewage systems. While this action would not address the sources of flooding, it would help to reduce damage due to internal flooding.	
Property relocation	Where the value of a property significantly outweighs the cost to protect it from flooding, then it may be viable to purchase the property and relocate the affected parties.	Given the scale of flooding in the area, and the location in the heart of the town, this action was ruled out at an early stage as being unacceptable.
Flood storage pond	A flood storage pond at the Myre playing fields was considered to manage flooding from the Clash Burn. This pond would be dry in normal conditions.	This action has been ruled out due to unfavourable loss of amenity space and the cost associated with a large area of excavation and disposal of material.
Loch Leven flood defences	Flood walls were considered in the vicinity of the Loch Leven Boat House, to provide protection to properties from high levels on Loch Leven and the South Queich.	Flood defences would result in these properties being surrounded, or ringfenced, and cut off from the Loch. This option was therefore ruled out as the business relies on access to the loch for social and economic reasons. Property Flood Resilience measures have been recommended instead.

Recommended Scheme

Following an assessment and appraisal of the various potential actions, the proposed flood scheme includes the provision of **new flood walls and embankments, culvert improvements, a flood storage area and property flood resilience measures.**


Storage Embankment
M90
Kinross Services
A977
Hopefield Culvert Upgrades
Clash Burn Bund
Clash Burn Diversion Culvert
Clash Burn Diversion / Upgrade Culvert
South Queich Hard Defences
KINROSS
Golf Course
Killoch Burn
Preferred Fluvial Option
Storage Embankment
South Queich Hard Defences
South Queich Embankments
Culvert Upgrades / Diversion
Clash Burn Bund
Property Level Resilience
River reach
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