

## Background Paper – Climate

### Issue No 003

**Context: Climate Change (Scotland) Act 2009, NPF Spatial Strategy, NPF 4 Policy 1, 2, 5, 6, 9, 10, 11, 12, 14, 15, 19, 20, 22, 23, 33**

This section is the main section covering climate change mitigation, adaptation and sequestration. The climate and biodiversity crises are intertwined, and together drive NPF4’s key vision and aims for Scotland. The data on climate and the linked paper on Natural Environment show that urgent action is necessary to address these crises. All other parts of the plan will pull together to achieve climate change mitigation and adaptation whilst at the same time making steadfast progress in nature restoration.

### LINKS TO EVIDENCE

	<b>Data to be used and those responsible for its production.</b>
ELC 063	GHG emissions by local authority UK local authority and regional greenhouse gas emissions national statistics, 2005 to 2021 - GOV.UK ( <a href="http://www.gov.uk">www.gov.uk</a> )
ELC 064	UK Emissions Interactive Map <a href="https://naei.beis.gov.uk/emissionsapp/">https://naei.beis.gov.uk/emissionsapp/</a> and <a href="https://naei.beis.gov.uk/laghgapp/">https://naei.beis.gov.uk/laghgapp/</a>
ELC 065	Scotland Reports and UK matters – Climate Change Committee (including: Adapting to climate change – Progress in Scotland, November 2023; Progress in Reducing Emissions in Scotland, December 2022)
ELC 066	Climate trends and projections – Adaptation Scotland (East Scotland)
ELC 067	Scotland’s Climate Change Plan – Scottish Government
ELC 068	Climate Change Risk Assessment 3 Summary for Scotland Technical Report
ELC 069	A Guide to Climate Change Impacts on Scotland’s Historic Environment – HES
ELC 070	Developing with Nature Guidance – NatureScot
ELC 071	Scottish Water Climate Change Adaptation Plan 2024

ELC 072	Climate Change Allowances for flood risk assessment in land use Planning – SEPA
ELC 073	Potentially Vulnerable Areas GIS layer: <a href="https://www.data.gov.uk/dataset/36c7c693-03fb-4c9b-ab47-de2a796e60d8/potentially-vulnerable-areas-pvas">https://www.data.gov.uk/dataset/36c7c693-03fb-4c9b-ab47-de2a796e60d8/potentially-vulnerable-areas-pvas</a>
ELC 074	Consultation on Potentially Vulnerable Areas (PVAs) for Flood Risk Management in Scotland 2024 - Scottish Environment Protection Agency - Citizen Space ( <a href="http://sepa.org.uk">sepa.org.uk</a> ).
ELC 075	Scotland’s Climate Change Adaptation Programme Adaptation Scotland
ELC 076	Climate Projections for Edinburgh and south East Scotland and Climate Change Projections Summary at <a href="https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections">https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections</a>
ELC 038	East Lothian Climate Change Strategy and 2024 Update
ELC 078	East Lothian Coastal Change Adaptation Plan (forthcoming)
ELC 079	East Lothian Local Heat and Energy Strategy – East Lothian Council (forthcoming)
ELC 080	Climate Action Plan 2020-25 Historic Environment Scotland
ELC 081	ESPON – Quantitative Greenhouse Gas Assessment tool for Spatial Planning
ELC 082	East Lothian’s Corporate Risk Register 2023
ELC 083	East Lothian’s Shoreline Management Plan 2002
ELC 084	East Lothian Tree and Woodland Strategy – East Lothian Council
ELC 085	Sequestration – CSGN habitat maps, TWSEL layers, Peatland Action
ELC 086	EPC data (maps available via Earthlight)
ELC 093	Strategic Flood Risk Assessment of LDP1
ELC 027	Strategic Flood Risk Assessment to be prepared for LDP2.
ELC 085	Get involved   Climate Ready South East Scotland ( <a href="http://climatereadyses.org.uk">climatereadyses.org.uk</a> ) – interactive map showing climate vulnerability in the SES Region still to be developed

## SUMMARY OF EVIDENCE

**IPCC** – there is a wealth of evidence produced by IPCC that clearly demonstrates that the climate is changing due to human influence and there is an urgent need to act now to prevent the global temperature rise of 1.5C.

### CLIMATE CHANGE COMMITTEE:

*“We remain concerned about the likelihood of achieving the UK’s future targets, especially the substantial policy gap to the UK’s 2030 goal. Around a fifth of the required emissions reductions to 2030 are covered by plans that we assess as insufficient.”*

The next LDP will have to include policies and projects to support reduction in CO2 and GHG emissions.

NPF4 requires that the LDP spatial strategy should be designed to reduce, minimise or avoid greenhouse gas emissions. The six spatial principles (please see the Spatial Strategy Paper) should form the basis of the spatial strategy, helping to guide development to, and create, sustainable locations. The strategy should be informed by an understanding of the impacts of the proposals on greenhouse gas emissions. LDPs should support adaptation to the current and future impacts of climate change by taking into account climate risks, guiding development away from vulnerable areas, and enabling places to adapt to those risks.

Since the adoption of the current LDP there has been some progress in reducing overall GHG emissions in East Lothian (For instance, approx. 11% reduction in the domestic sector between 2017 and 2021).

**ADAPTATION** – flooding remains a key risk associated with climate change. The issue of flooding is covered in a number of papers of the Evidence Report, including the Spatial Strategy and Infrastructure.

Urban heat is likely to become more of an issue, in particular in more densely populated urban areas and will affect the aging and more vulnerable groups within our population. Some existing buildings and green spaces in East Lothian were not designed for warmer temperatures.

### **CCRA (Climate Change Risk Assessment) Evidence Report Scotland: Summary of climate risks and opportunities for Scotland**

The above report identifies the main risks relevant to land-use planning as:

- **Flooding;**
- **Spread of pests and pathogens, and invasive species;**
- **Risk of damage to infrastructure – energy, transport, water and ICT from climate impacts, including cascading failures;**
- **The impact of extreme temperatures, high winds and lightning on the transport network.**
- **Impact of increasing high temperatures on health and well-being and changes in household energy demand due to seasonal temperature changes;**
- **The viability of coastal communities and the impact on coastal businesses due to sea level rise, coastal flooding and coastal erosion.** Coastal erosion risk is increasing and may affect our area in a number of ways including infrastructure, transport and power. It is anticipated that a Coastal Change Adaptation Plan (CCAP) will be developed to supersede the current Shoreline Management Plan in the near future;
- **Damage to cultural heritage assets as a result of temperature, precipitation, groundwater and landscape changes;**
- **International impacts with consequent effects here including risks to food availability, safety and security, and others including multiplication of risks across systems and geographies.**

## **SUMMARY OF STAKEHOLDER CONSULTATION**

- ELC's Climate Change Strategy should be central to the LDP so developers have to meet its objectives;
- Encourage local renewable energy provision;

- Decarbonising energy partnership working with Midlothian for heat capture from the waste plant;
- Use more brownfield sites for new development;
- Denser housing development means 20 min neighbourhoods are needed to support local services;  
The LDP should focus on compact growth around existing communities and place-based;  
infrastructure-first development as per NPF4. Also, denser development means less land area;  
needed for buildings and infrastructure which means more agricultural land;
- Need for more energy efficient social housing;
- Quality cycle lanes and secure bike parking needed;
- Better public transport needed eg build rapid transit bus routes, more frequent bus and train services;
- There is no joined up public transport options;
- Park and ride schemes should be provided for those who are not able to live and work locally;
- New estates to have car club spaces;
- Keep village schools open, to reduce required car transport, so children can walk to school;
- Put recycling bins on streets;
- East Lothian farmland was always protected, we should value productive land and go back to being as self-sufficient as possible by growing food;
- What assessment is being made about how many additional homes can be realistically built in relation to expected future water stocks which will be affected by climate change;
- Protect woodland and focus on planting more trees, meadows etc – nature benefits and carbon storage;
- Protecting green space and encouraging nature corridors;
- Musselburgh Flood Protection scheme – opportunity for nature based-solutions/opportunities;
- Climate planning should not overlook the needs of residents here and now;
- The LDP needs to raise awareness of how one individual’s small change can add up to a significant impact.

**WHAT THIS MEANS FOR THE PROPOSED PLAN? WHAT ARE THE KEY ISSUES FOR THE LDP TO ADDRESS, FROM POLICY ANALYSIS?**

**Spatial Strategy** – location, not just housing, employment etc but also infrastructure e.g. substations, battery energy storage systems (BESSs), **active travel routes, public transport connectivity**

**Energy efficient layouts** – passive solar gain, but also appropriate landscaping that shelters the buildings from winds and overheating

**Liveable Neighbourhoods** – **new residential developments should be located and designed with pedestrians and cyclists’ accessibility as a primary consideration. The context of the site and its surroundings as important factor as it will influence any final design. It needs to be remembered that new residential developments can support existing as well as new services such as retail, hospitality and leisure but can also put pressure on other existing services and infrastructure such as schools, health, or transport.**

**Building lifecycle considerations** – we need to ensure that buildings be reused, and where this is not possible that materials from the demolition process should be reused and recycled.

Can future LDP include requirements for developers to design buildings in a way that makes it easy to use them for different purposes (flexible design), and enable a maximum disassembly / recycling at the end of their life. In practice this means avoiding the use of composite materials, putting together buildings with simplified and standardised fittings, which can be taken apart easily, and finally maintain good records of the building so a future contractor knows what to do when it comes to taking it apart.

**Resilient buildings – climate change effects need to be considered by designers, developers and planners. We can expect:**

More frequent and intense rain, leading to pressure on drainage, and a higher risk of flooding;

More frequent ‘extreme weather’ such as storms, which may damage buildings... etc (provide full list);

Buildings and the site layouts including trees and general landscape will need to be designed to mitigate these climate effects. Elaborate but in principle focus on overheating, reducing the urban heat island effect, reducing the risk of flooding by using green roofs and walls, which capture water, and using sustainable drainage systems (SuDS) etc;

### **Retrofit**

As well as thinking about how new buildings can reduce carbon emissions and be resilient against climate change, we also need to think about how our existing buildings can be upgraded to make them more efficient. This is known as ‘retrofit’.

**Food availability.** NPF4 gives greater emphasis on the protection of agricultural land. However, much of the land around settlement in East Lothian is prime agricultural land. Locations close to existing settlement, especially that with good facilities and transport links, may be the best for climate change mitigation in terms of local living and availability of public transport. The LDP will have to consider how to balance this. Could more personal growing space be provided (gardens) which could be used in times of need? Or would that be outweighed by reduction in density that would be likely to increase transport emissions?

**Just transition** – how can active travel be encouraged for those who can without excluding those who cant?

**AREAS WHERE THERE IS AGREEMENT OR DISPUTE ON ISSUES AND POSSIBLE APPROACHES.**

No areas of disagreement noted.

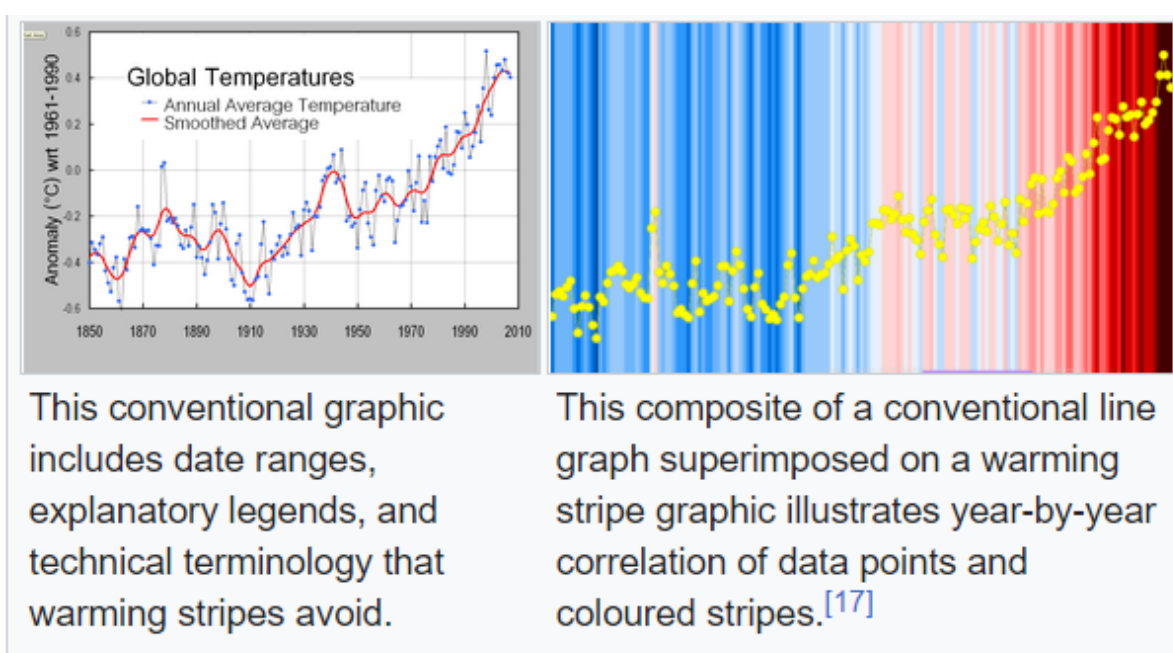
## Links to Evidence

All the links provided in the cover sheet are to national, regional or local climate strategies and their associated action plans. Collectively these actions will help to address the challenges associated with climate change. Through the site assessment methodology, spatial strategy and policy the LDP will look to deliver these actions.

### What is the issue?

Scientists agree that the world is warming. The Intergovernmental Panel on Climate Change (IPCC) say

*"It is unequivocal that human influence has warmed the atmosphere, ocean and land"<sup>i</sup>.*



IPCC: *"Global warming of 1.5°C and 2°C will be exceeded during the 21<sup>st</sup> century unless deep reductions in CO<sub>2</sub> and other greenhouse gas emissions occur in the coming decades."*

In October 2023, Professor Piers Forster, Chair of the Climate Change Committee, said:

*"We remain concerned about the likelihood of achieving the UK's future targets, especially the substantial policy gap to the UK's 2030 goal. Around a fifth of the required emissions reductions to 2030 are covered by plans that we assess as insufficient."*

Scotland currently has a target of reaching net zero by 2045 with interim targets of a 75% reduction by 2030. However, a recent Ministerial announcement suggests this will be replaced by five yearly carbon budgets.

As greenhouse gas emissions are building up extreme weather events may occur more often. These weather events can become more impactful to our local and global economies, our society and the natural environment.

Risks for food and water security, health, ecosystems and economic development increase as global temperatures rise.

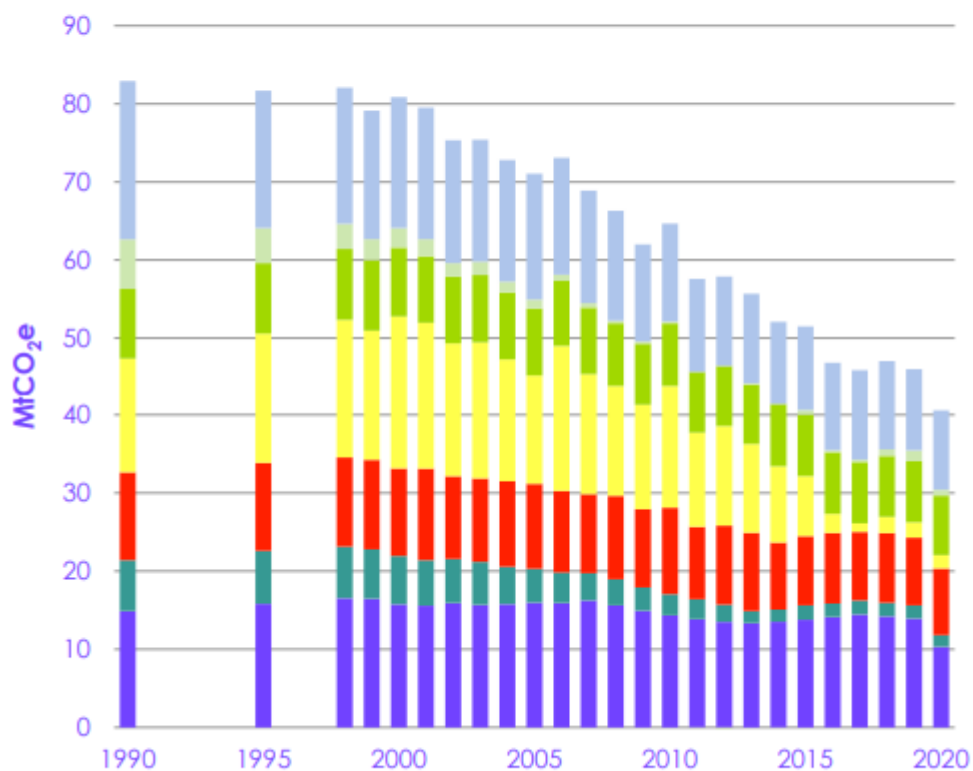
### What is causing climate change?

Some gases trap the heat from the sun in the atmosphere, instead of reflecting it back out to space. The main ones are;

- carbon dioxide (CO<sub>2</sub>) which comes from burning fossil fuels like oil, coal or natural gas, mostly for electricity, heat and transport, and cement manufacture;
- methane, which comes from oil and gas production, landfill sites and cows digestion systems;
- nitrous oxide, emitted agriculture, fossil fuel use, biomass burning; and
- fluorinated gases from refrigeration, air conditioning, and some foams and aerosols.

The UK and Scottish Governments have taken action to reduce emissions, including through planning policy. Emissions have reduced a lot, mainly due to a change in how we make electricity, moving from coal, gas and oil to renewables and nuclear. In 2020, East Lothian's largest emissions source were large industrial emissions followed by transport and domestic uses.

Figure 5 Scotland's historical emissions (1990-2020) and the Scottish Government's pathway (2020-2032) by sector

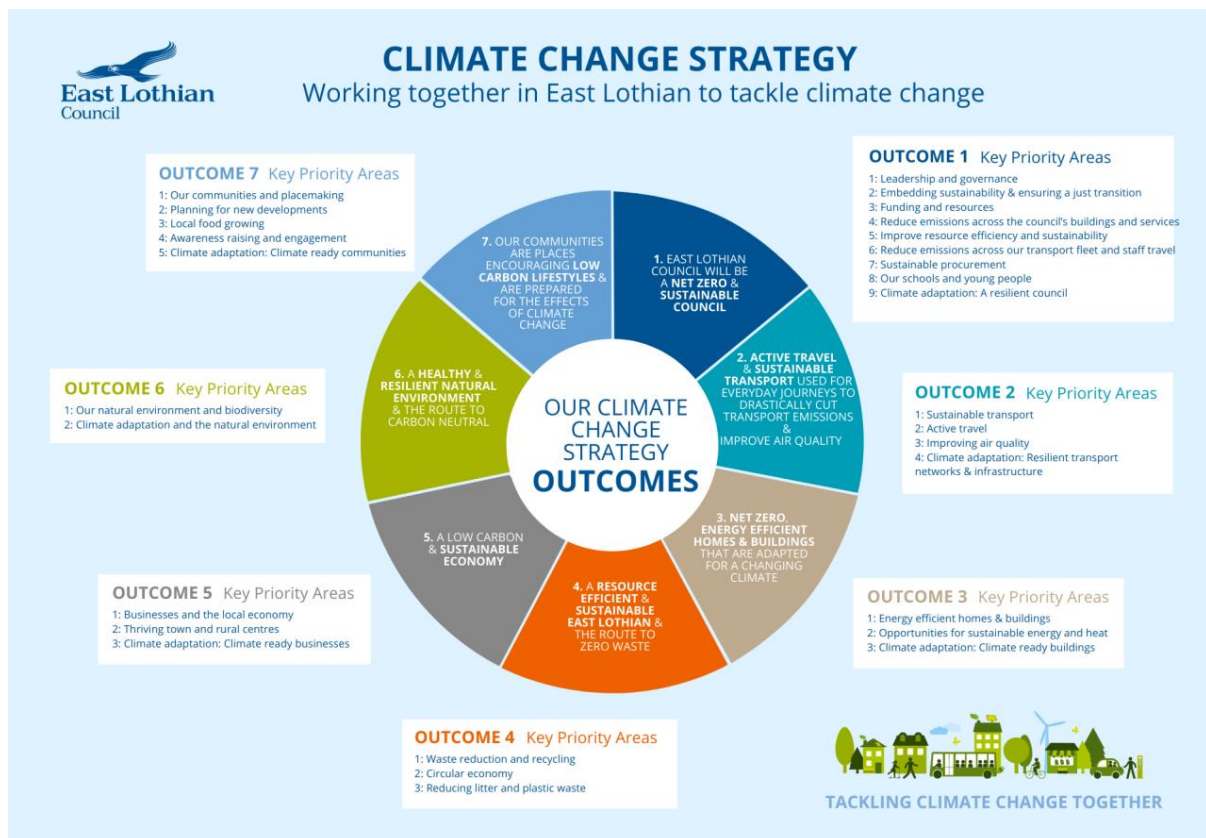






## East Lothian Climate Change Strategy 2020-2025 (update January 2023)

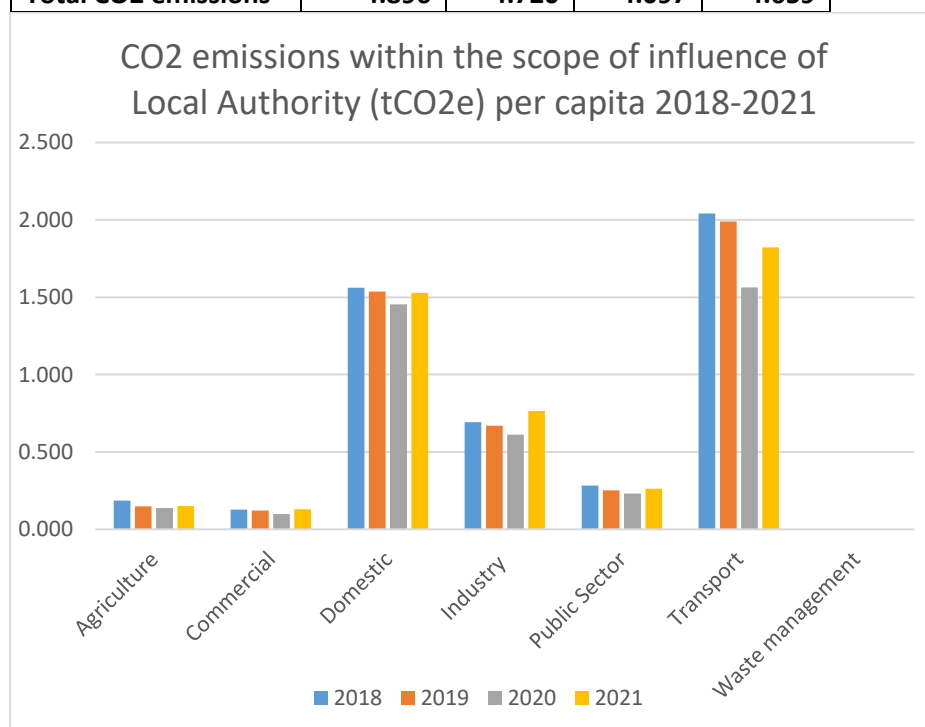
The ELC Climate Change Strategy Annual Update Report highlights that whilst the Council is making good progress in respect of its Climate Change Strategy and Action Plan there are significant increases in the Council’s estate through new schools and community centres which are coming forward which may lead to the increase in East Lothian’s overall carbon footprint. This must be seen in the context of the achievements that have contributed to reduced carbon output in a number of other areas across the Council’s operations and also in the context of a growing population in East Lothian. The ELC Climate Change Strategy includes seven outcomes which are directly relevant to planning and our next LDP.



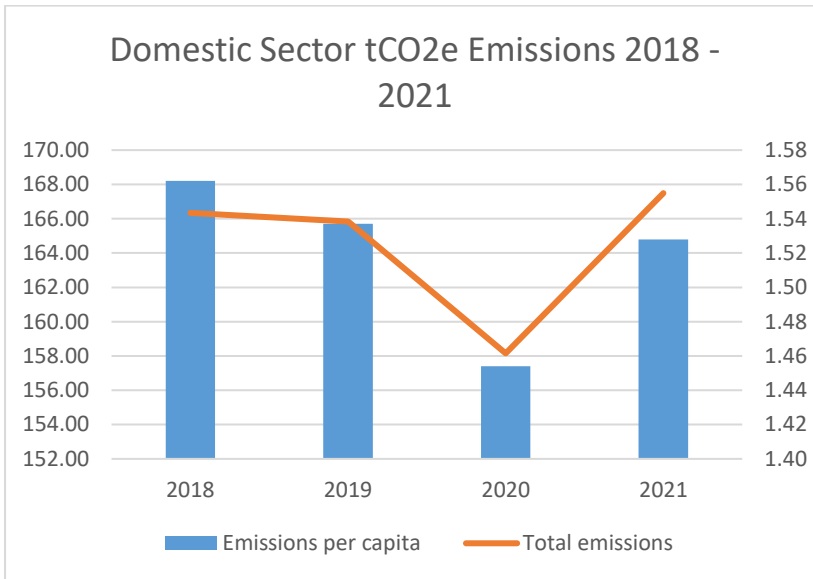
East Lothian remains one of the fastest growing areas in Scotland and this is reflected in the growth of its population and the provision of record numbers of new homes in East Lothian. This may present a challenge to East Lothian in meeting its obligations of reducing our impact on natural environment and climate change. The figure overleaf shows CO<sub>2</sub> emissions in East Lothian per capita between 2018 and 2021. The largest CO<sub>2</sub> emissions in East Lothian are from the transportation and domestic sectors, both accounting for nearly 72% of emissions in 2021. It is important to be aware

that local authorities have relatively little influence over some types of emissions eg in 2021, CO2 emissions from large industrial installations in East Lothian (emissions outwith the scope of influence of Local Authorities) were higher than the combined emissions from the transportation, domestic and industry sectors (4.2 tCO2e vs 4.1tCO2e per capita).

<b>CO2 emissions within the scope of influence of East Lothian Local Authority (tCO2e) per capita</b>				
	2018	2019	2020	2021
Agriculture	0.186	0.148	0.138	0.151
Commercial	0.128	0.122	0.098	0.130
Domestic	1.562	1.537	1.454	1.528
Industry	0.693	0.670	0.612	0.766
Public Sector	0.283	0.251	0.232	0.261
Transport	2.041	1.991	1.563	1.822
Waste management	0.001	0.001	0.001	0.001
<b>Total CO2 emissions</b>	<b>4.896</b>	<b>4.720</b>	<b>4.097</b>	<b>4.659</b>



The domestic sector is the second greatest contributor to end-use emissions in East Lothian (please note that only emissions within the scope of influence of LAs are taken into account here). Emissions within this sector can be influenced by a number of factors e.g. the fuel types used, the type and condition of the housing (including its insulation), the average temperature (urban areas can be much warmer and therefore easier to heat than rural areas), average household size, type of household and the income and preferences of the occupiers. The figure below shows a general decreasing trend in CO2 emissions in the domestic sector in East Lothian



Greenhouse gas emissions have fallen in East Lothian since 2005. However, the biggest driver of the trend is changes in the ‘industrial’ category. This includes large installations which often serve national or international markets and therefore have a disproportionately large impact on the overall figure for an area.

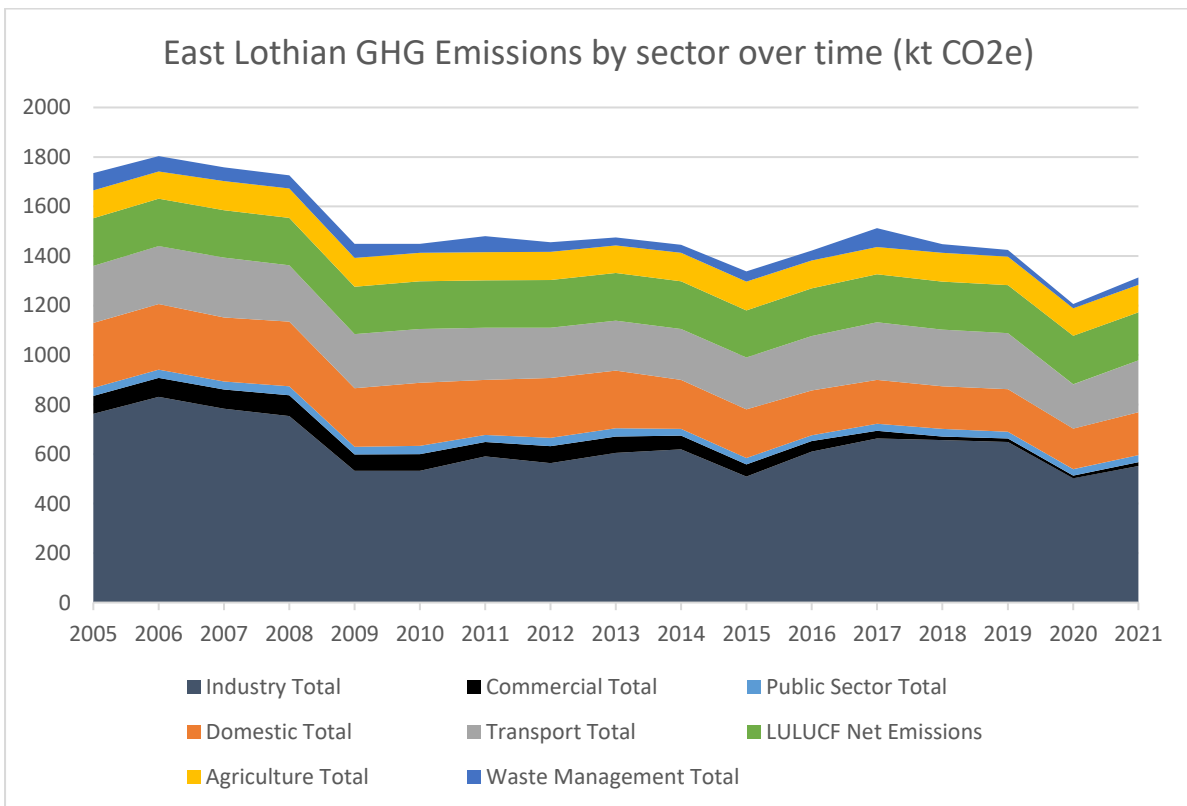


Figure 1 East Lothian’s greenhouse gas emissions by kt CO2e, 2005 – 2023: source UK National Statistics at <https://www.gov.uk/government/statistics/uk-local-authority-and-regional-greenhouse-gas-emissions-national-statistics-2005-to-2021>

Action to reduce greenhouse gas emissions must increase. In recognition of this, in 2019 the Scottish Government and East Lothian Council and others declared a Climate Emergency.

#### What can planning do – mitigation

There are lots of ways planning can help reduce emissions. For example we can:

- reduce the need to travel by locating work, education, retail and leisure destinations close to each other, and to where people live
- make travel by foot or cycle or public transport easier
- support renewable energy production
- reduce the amount of greenhouse gas emissions through choice of materials and techniques of construction
- encourage energy efficiency in our homes and other buildings
- Protect woodland, peatland and other habitat that absorbs CO<sub>2</sub> from development
- Integrate habitat creation with development and promote creation of new habitat

#### What can planning do – adaptation

We can also help adapt our places to climate changes that cannot now be avoided. Climate trends and projections are explained by Adaption Scotland. They report that Scotland's 10 warmest years on record have all occurred since 1997. The average temperature for the last decade (2014-2023) was 1.02°C warmer than the 1961-1990 average, and the warmest year on record was 2022. There has been an increase in rainfall over Scotland in the past few decades. The annual average rainfall in the last decade (2014-2023) was 10% wetter than the 1961-1990 average, with winters 29% wetter.

Predictions from CCRA3 Evidence Report reports that temperatures in Scotland are expected to rise by about 1.1 °C by the 2050's, and between 1.1 and 2.0 degrees by the 1980s from a 1981-2000 baseline. Associated risks, such as more extreme heatwave events are likely to become more prevalent. Winter rainfall is expected to increase by around 7% by the 2050's, and 7-13% by the 2080s on a 1981-2000 baseline. This is expected to lead to an increase in the likelihood of flooding of infrastructure, businesses and homes. Summer rainfall is expected to decrease by 6-7% by the 2050s and by 12-16% by the 2080s. Periods of water scarcity are expected to become more prevalent. The frequency and intensity of extreme temperatures and rainfall events is also likely to increase in future. Sea levels are also predicted to rise.

Mean sea level around the UK has risen by approximately 18.5cm from the start of the 20th century and the rate of sea level rise has increased over the last 30 years.

CCRA (Climate Change Risk Assessment) Evidence Report Scotland: Summary of climate risks and opportunities for Scotland

Climate Projections for Edinburgh and south East Scotland and Climate Change Projections Summary at <https://www.adaptationscotland.org.uk/why-adapt/climate-trends-and-projections>

The main risks relevant to land-use planning were:

Flooding: overall in Scotland this remains a key risk to people, communities and businesses. Flooding is a risk for East Lothian from rain, rivers and seawater. The most severe one of the key areas of risk is at Musselburgh, where a flood protection scheme is under consideration. SEPA has developed mapping to allow identification identify of areas of land at different levels of risk of flooding. For planning purposes, the 1:200 year flood, with an allowance for climate change, is generally usually considered the maximum level of acceptable flood risk for vulnerable uses, including homes. SEPA have updated guidance on allowance for climate change in their revised guidance.

SEPA have also identified Potentially Vulnerable Areas designated for flood risk management where actions could provide the most benefit [<https://www.data.gov.uk/dataset/36c7c693-03fb-4c9b-ab47-de2a796e60d8/potentially-vulnerable-areas-pvas>]. An update to the Potentially Vulnerable Areas is currently out for consultation (consultation closes on 24<sup>th</sup> June 2024) In addition to built development, flooding can also affect agriculture, forestry, roads, landscapes and habitat.

Spread of pests and pathogens, and invasive species: this is relevant as changes to blue/green infrastructure can inadvertently support the spread and so needs to be carefully planned.

Risk of damage to infrastructure – energy, transport, water and ICT from climate impacts, including cascading failures: some of our infrastructure was designed and sited before climate change risks were well known and/or is reaching end of life. East Lothian hosts electricity infrastructure including high voltage lines and, currently, Scotland’s largest single electricity generating plant at Torness.

There are at least 274 bridges maintained by East Lothian’s Roads Services, about two thirds of which are over watercourses. About half of them in total are masonry arches.

The impact of extreme temperatures, high winds and lightening on the transport network. Local living can help mitigate the effects of loss of transport capacity to some extent however some systems such as food distribution are national/international.

Impact of increasing high temperatures on health and well being and changes in household energy demand due to seasonal temperature changes. Planning can support the creation of climate resilient green infrastructure to allow people to find shade outdoors. Attention to siting and layout design can help avoid creating inhabited buildings that are too hot in summer or too cold in winter.

The viability of coastal communities and the impact on coastal businesses due to sea level rise, coastal flooding and coastal erosion. Recent storms have led to damage along our coastline, including to infrastructure such as at North Berwick and Dunbar harbours and to

natural features such as sand dunes on beaches. Musselburgh is at risk of both coastal and river flooding, exacerbated by sea level rise. Coastal erosion risk is increasing and may affect our area in a number of ways including infrastructure, transport and power. East Lothian's Shoreline Management Plan 2002 identifies infrastructure at risk from coastal erosion and existing sea defences. It makes recommendations for an appropriate response along the coastline. Although this work would benefit from revisiting it contains much relevant information. It is anticipated that a Coastal Change Adaptation Plan (CCAP) will be developed to supersede the SMP in the near future.

Damage to cultural heritage assets as a result of temperature, precipitation, groundwater and landscape changes.

International impacts with consequent effects here including risks to food availability, safety and security, and others including multiplication of risks across systems and geographies. NPF4 seeks greater protection of prime agricultural land. There could be changes to migration patterns however the levels of this could vary widely depending on the policy response and it is not feasible to plan for this at local level without a national steer. Key messages from [Adapting to climate change - Progress in Scotland - Climate Change Committee \(theccc.org.uk\)](#)

- Overall progress on adapting to climate change in Scotland remains slow, particularly on delivery and implementation. For only one out of the 33 outcomes identified by the Committee for climate resilience across devolved areas do we find good progress on adaptation delivery. For four outcomes we find clearly insufficient progress; 16 show mixed progress; and for 12 there are insufficient data to meaningfully evaluate progress.
- Monitoring and evaluation of adaptation is slowly improving but remains limited. Since our last report in 2022, more analysis of public body reporting on adaptation has become available and data on wildfire incidents are now being recorded, but in many areas insufficient data collection is hampering adaptation efforts.
- The next national adaptation plan must embed adaptation in upcoming legislation and drive delivery. SNAP3, coming in 2024, must build on SCCAP2. It needs to ensure that there are quantified targets for climate resilience, that there are clear linkages between activities and outcomes, with clear ownership of delivery, and must finally address the long-standing absence of an effective monitoring and evaluation system. For it to address the current shortfall in adaptation delivery it must seek to unlock public and private investment in adaptation, and be fully integrated with upcoming legislation and cross-Government objectives on decarbonisation, health and nature.

NatureScot’s ‘Developing with Nature’ Guidance notes that climate change is one of a number of pressures on biodiversity. Pressures on biodiversity can impact species dispersal and genetic mixing, reducing the ability of species to adapt to climate change. Well designed development integrating nature based solutions can address the causes of climate change but also help biodiversity adapt to climate change. Solutions such as SUDS, green roofs and walls, street trees and biodiverse green space can provide a cost effective and climate resilient solution to issues such as extreme temperatures, high energy use, noise, water quality and quantity, and poor amenity.

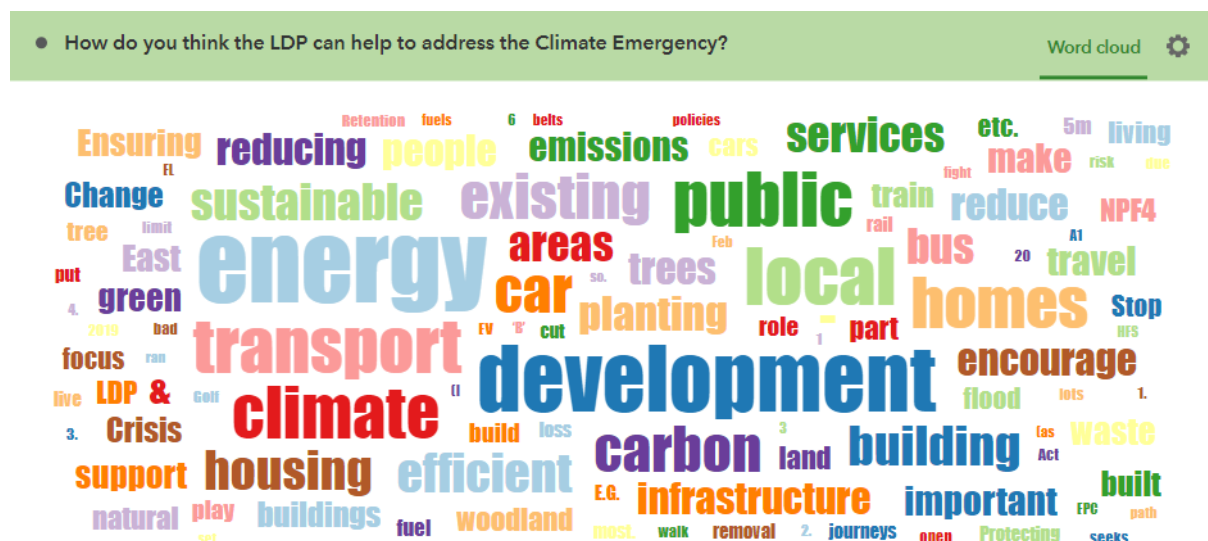
## STAKEHOLDER CONSULTATION

### 1. Online Survey

There was no dispute about the importance of tackling climate change but there was a wide range of opinions on the best course of action. The main issues raised by respondents in terms of mitigating climate change were improving **public and active transport**, encouraging **local renewable energy generation**, the **density of housing development and its location** vis-à-vis services, and **energy efficiency in housing**, particularly social house.

In terms of adaption, the need to respond to flood risk, water scarcity and food security were the main issues noted. Sequestration was mentioned by a number of respondents, mainly protection woodland. Issues around the Just Transition were also raised.

In response to the question ‘**How do you think the LDP can help to address the Climate Emergency?**’ respondents mentioned a wide variety of issues as shown by the word cloud created from the answers:



Respondents mentioned the following in particular:

### **Mitigation**

- Encourage local renewable energy provision
- Quality cycle lanes and secure bike parking needed
- Better public transport would limit car use and better shops in local areas
- There is no joined up public transport options
- Build rapid transit bus routes - see STPR2; encourage community buses - make buses great again.
- 20mph limit has resulted in the bus journey taking 1hr30 mins to Edinburgh
- Have a more frequent bus service from Dunbar to Musselburgh
- More frequent public transport eg trains should ran half hourly
- A train station at Blindwells would not only benefit the new settlement, but provide a rail link from nearby towns such as Tranent and Cockenzie/Port Seton. Re-opening the Haddington line would also be beneficial.
- Park and ride schemes should be provided For those who are not able to live and work locally.
- New estates to have car club spaces
- Denser housing development means 20 min neighbourhoods are needed to support local services. The LDP should focus on compact growth around existing communities and place-based, infrastructure-first development as per NPF4
- Keep village schools open, to reduce required car transport, so children can walk to school
- ELC's Climate Change Strategy should be central to the LDP so developers have to meet its objectives
- Reduce ELC carbon footprint by refusing to allow concrete hard engineering flood defences from being built in Musselburgh; create a flood scheme inspired by the Eddleston Project
- Put recycling bins on streets
- Build local authority affordable and social housing to higher norms
- Energy efficient social housing.
- Housebuilding in East Lothian is progressing too quickly and should be slowed down. Making those houses more energy efficient won't reduce the impact of the building works, nor will it reduce the use of cars.



## **Adaptation**

- Denser development means less land area needed for buildings and infrastructure which means more agricultural land.
- LDP must identify areas that are at rising risk of flooding due to climate change
- East Lothian farm land was always protected, we should value productive land and go back to being as self sufficient as possible by growing food.
- What assessment is being made about how many additional homes can be realistically built in relation to expected future water stocks which will be affected by climate change?

## **Sequestration**

- Protect woodland and focus on planting more trees, meadows etc – nature benefits and carbon storage
- Denser development means less land area needed for buildings and infrastructure which means more woodland.

## **Just transition**

- NPF4 explains that an important part of addressing the Climate Crisis is ensuring a just transition
- Climate planning should not overlook the needs of residents here and now
- The LDP needs to raise awareness of how one individual's small change can add up to a significant impact.

## **2. Public Events**

A number of drop-in events were held as part of the Evidence Report public engagement in 2023 and below comments represent the most frequently raised issues relevant to climate change:











- Concerns about climate change and how its managed;
- Use of minewater as source of low carbon energy;
- Use more brownfield sites for new development;
- Protecting green space and encouraging nature corridors;
- Importance of green spaces;
- Impact of climate change on coastal paths (disappearing);
- Water have we got enough for more houses? In such a dry climate? Grey water for toilets, gardens;
- Aim towards complete self-sufficiency. Energy Food. East Lothian was the breadbasket of Scotland;
- Climate Forest Tree Planting;









- Musselburgh Flood Protection scheme – opportunity for nature based-solutions/opportunities;
- Park power opportunities for low carbon energy;
- Consideration of how to use this the site at Carberry for renewable energy (fewer land fill);
- Biodiversity net gain – combination of on-site delivery and off site/in local area e.g. climate forest [Crookston]
- Decarbonising energy partnership working with Midlothian for heat capture from the waste plant
- Use the Climate Change Strategy - it should be considered in every decision.

### Children and Young People’s consultation

#### Secondary Schools

Children and young people were asked what they would like to see done to help tackle climate change by questionnaire. Their suggestions were:

	Waste less food		Limit new building
	Better education on climate change		Protect nature and green areas
	Street lighting to encourage walking		Plant trees
	Bike to school scheme Bike shelters and rentals		Promote walking and cycling
	Limit flights		More buses / trains and cycle lanes

	More bins – especially recycling bins		More green energy
	Litter picking / beach cleans  Volunteer groups		More env friendly packaging
	Encourage use of local products versus imported goods		Less reliance on palm oil and pesticides
	more Electric cars and chargers		More green spaces

### Primary schools

One of the key findings of the engagement with Primary Schools were that children care about the world around them. Through the consultation process they showed an interest in engaging with discussions about housing and climate change. With regard to climate change, children recognised the role of trees, flowers and bees in looking after the planet. There is a lot of concern about this and a crossover with the theme of nature crisis. Creating diverse habitats is described as beneficial for wildlife and humans. For the future of East Lothian children would like to see more trees, ponds, flowers and animals. Trees are often mentioned as children are concerned that trees are being cut down, and there is a desire from children to plant more trees, ensure they are looked after and protected. Children describe this as important for wildlife, for us and to help address climate change.

Littering was mentioned in every school and was often a key concern for children. Littering was linked with concern about wildlife and climate change. While children recognised everyone’s responsibility to use bins and recycle, they felt there should be more bins available.

*“I care about the world around me. Stop littering and pollution.” Child at Dirleton Primary School*

Traffic has a significant impact on children’s daily lives, affecting their ability to play out, how they travel to school and places they can visit. Cycle paths were a frequent suggestion as fun, environmentally friendly and a way to stay healthy. Children also mentioned the need to use cars less.

*“We need fewer cars on the road and more safe crossing.” Child at Sanderson’s Wynd Primary School*



Figure 2 "Less cars more crossing" by child at Sanderson's Wynd Primary School

Nature crisis and climate change are closely connected for children. Many of the children's drawings of the future they'd like in East Lothian show trees, flowers, ponds, a clean environment. Unlike the other topics, climate change wasn't raised in all schools. When it was, children were passionate and knowledgeable about alternative energy sources.

*"Trees, because if we have trees we can breathe, we should plant more woodland" Child at Aberlady Primary School*

*"I think we need more charging points for electric cars in the future." Child at Cockenzie Primary School*

The Report of consultation with primary school children summarised what was important to the children for the next LDP. In terms of climate change this was:



Figure 3 "More trees, more bins." Child at Sanderson's Wynd Primary School

- More electric car charging points
- More use of solar and wind power
- More bins and recycling facilities.

In terms of Nature, which is linked to the climate crisis, what children identified as important to them was:

- Protect natural areas, parks and green spaces
- Create diverse habitats, including ponds
- Plant more trees and flowers
- Develop safe access to beaches, woods, parks and green spaces so children have frequent access to natural areas.

Other aspects they identified as important also have links to climate change such as cycle paths and safe walking routes, facilities for all ages and abilities.

‘Significant points’ identified in the report were that Engagement with children highlights the connections between the LDP themes of places we live, nature crisis, health and climate change.

*“Fewer cars would help with pollution and also make roads safer to walk.” Child at Sanderson’s Wynd Primary School*

## IMPLICATIONS FOR THE PROPOSED PLAN

### **Mitigation**

Climate is one of the four overarching themes of LDP2. Climate actions will take many forms and are also covered under many other parts of the Evidence Report. Climate mitigation and adaptation (and biodiversity) implications will be a major factor in policy formation, the spatial strategy and site selection. This will include considering reducing the need to travel, promoting energy efficiency, reducing flood risk, and supporting nature restoration.

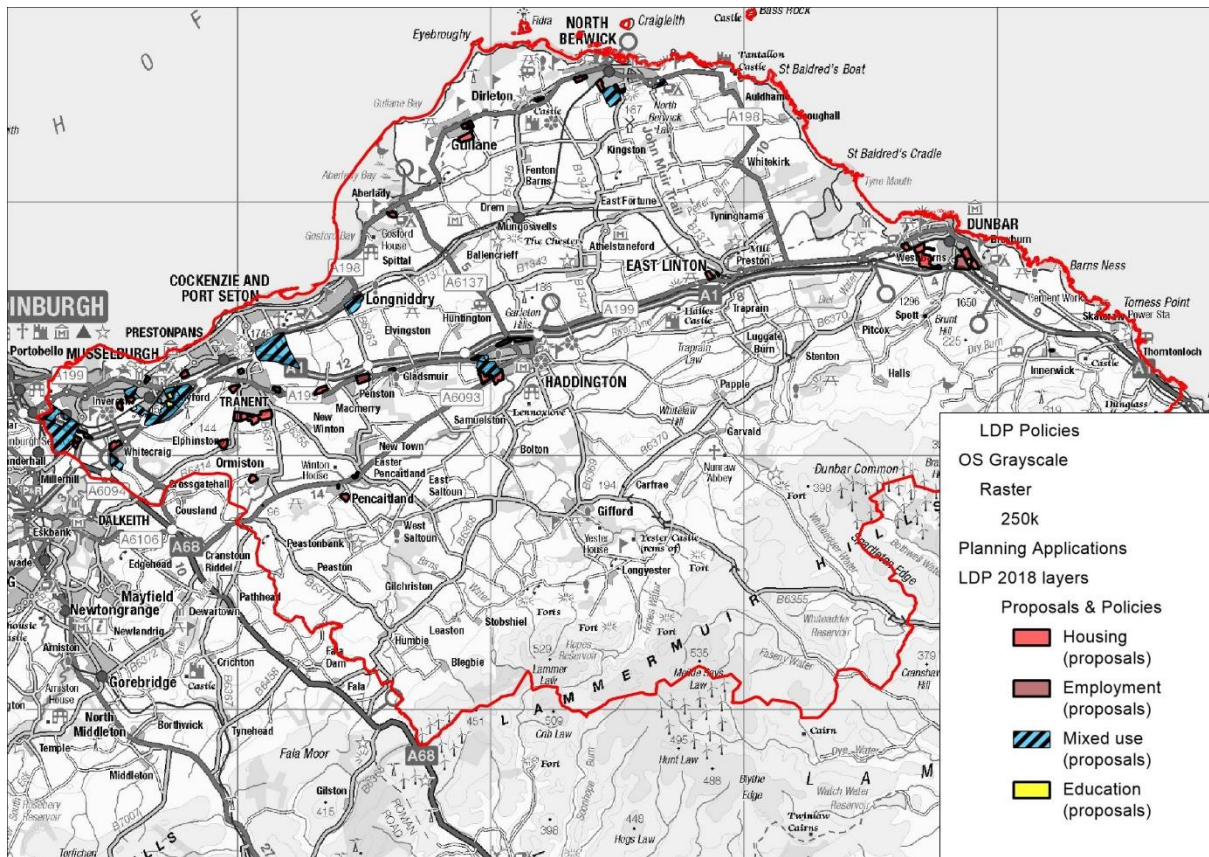
The planning process can also empower people to shape their places and ensure the transition to net zero is fair and inclusive.

### Reducing the need to travel

The Scottish Government is working towards an ambitious national target to reduce car kilometres by 20% by 2030, with means to achieve this detailed in the route map. Local living and 20 minute neighbourhoods contribute to this goal, helping to improve opportunities for walking, wheeling and cycling, improving access to local shops and services and thereby reducing the need to travel unsustainably.

The current LDP planned for new housing and employment to be focussed on the west of the county, where travel time to Edinburgh is less, and in towns where there is good public transport to Edinburgh and daily shopping needs could be met. Availability of primary and secondary education was also a major consideration. Sites were therefore chosen firstly around Musselburgh and Wallyford. An allocation was made in Haddington, which had good availability of jobs, as well as a fast bus service to Edinburgh, primary and secondary school and a good retail offer. Further housing sites were chosen at Dunbar, Longniddry and North Berwick, which have train services to Edinburgh as well as having a range of shops and high quality open spaces.

This strategy has been successful in that the chosen sites were capable of development and marketable. Most now have planning permission and many are now under construction.



This new LDP will have to consider whether there is a need to allocate more housing sites. Employment sites will still be needed. For whatever level of allocations is decided the plan will have to look at reducing the need to travel on a more local level. This will include planning to meet needs locally, in 20-minute neighbourhoods.

### Encouraging active travel

The LDP already contains policy (T1) requiring development to be accessible by foot, cycle and public transport as well as by car. It also requires that (T2) development does not affect how easy, safe or pleasant it is to walk or cycle in the area. The plan included proposals to support active travel including a new active travel corridor from Dunbar through to Edinburgh, and platform improvements at rail stations. Developer contributions were required for these. Transport improvements to support buses and improve air quality were promoted in Musselburgh and Tranent High Streets. Design Briefs were drawn up for the larger housing sites which included pedestrian links (see the example below).

## MH13 - Whitecraig South, Whitecraig Mixed use, including circa 300 homes



There remains a high use of the private car for many trips and future LDPs will need to add further emphasis on the sustainable accessibility of new development and the levels of parking provided. Meeting Scotland's climate change targets will need a 20% reduction in car trips by 2030. This is a challenging target and people's current travel patterns will need to change to achieve this. We need to plan for places that make it as easy as possible for people to choose to travel by active means.





## Encouraging energy efficient buildings and layouts

### New buildings

Building Standards govern the energy efficiency requirements of home construction, and are increasing. Planning can plan housing layouts which shelter or shade buildings so they use less energy, or can gain heat from the sun. Although our design policies include encouragement for energy efficient design, this is only one consideration among many. Planning policy could seek a greater emphasis on producing an energy efficient design. This would allow for more of the renewable energy produced on housing sites to be used for appliances within homes rather than heating, so reducing electricity demand overall.

In December 2022, the Minister for Zero Carbon Buildings, Active Travel and Tenants' Rights confirmed that the Scottish Government will make legislation by December 2024 to deliver "a Scottish equivalent to the Passivhaus standard". Consultation on proposals is anticipated to be launched in spring/summer 2024, followed by laying of amending regulations by mid December 2024.

There are five key principles underlying the passivhaus standard:

- High-quality insulation
- Heat control and robust windows
- Building airtightness
- Heat recovery and ventilation
- Thermal bridge free design

Section 3F of the Town and Country Planning (Scotland) Act 1997, as amended through Section 72 of the Climate Change (Scotland) Act 2009 states that:

'A planning authority, in any local development plan prepared by them, must include policies requiring all developments in the local development plan area to be designed so as to ensure that all new buildings avoid a specified and rising proportion of the projected greenhouse gas emissions from their use, calculated on the basis of the approved design and plans for the specific development, through the installation and operation of low and zero carbon generating technologies.'

Planning implications [Planning policy - section 3F: research - gov.scot \(www.gov.scot\)](https://www.gov.scot/research/publications/planning-policy-section-3f-research/)

- concerns about the strength of suspensive conditions and the subsequent ability to enforce compliance
- a need to address the underlying conflict between Planning and Building Standards over the mandatory use of LZCGT
- the above research recommends that the LZCGT contribution to CO2 emission reductions be defined as a constant and perpetual 12% of the percentage CO2 emission reduction sought through Scottish Building Standard 6.1.

## Existing buildings

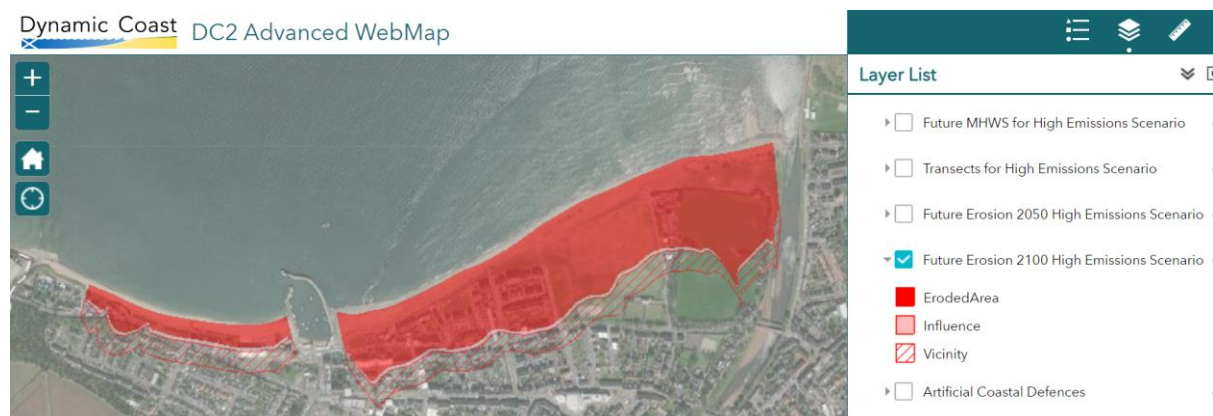
NPF4 supports the reuse of existing buildings where their suitability for conversion to other uses is acceptable. This approach recognises the need to conserve embodied energy.

## Adaptation

We will have to adapt to coming climate change and potential sea level rise. In East Lothian we can expect warmer, wetter winters, more intense rainfall, drier and warmer summers, and more chance of extreme weather.

Issues the LDP will need to consider include:

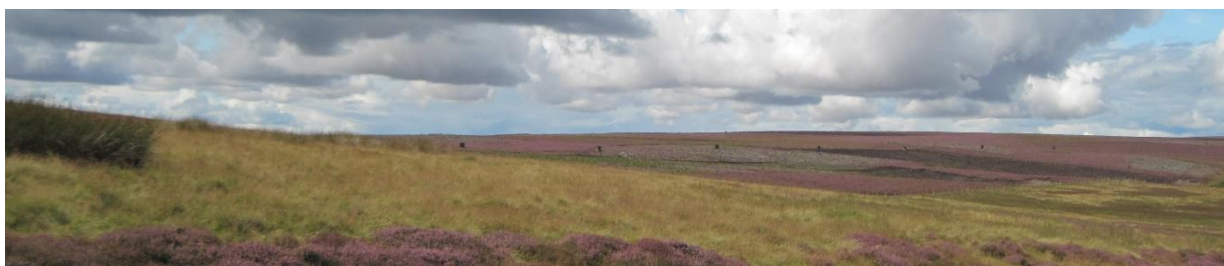
- nature based solutions to adapting our outdoors so we can enjoy being outside in heat as well as cooler weather.
- Adapting our urban environments for urban heat island effect through layout and design of buildings and open spaces as well as increasing urban tree canopy coverage
- Food security - we may also have to adapt pressures on our land that come from changes elsewhere, for example less land for growing crops globally could mean we need to be more careful with loss of our agricultural land, especially prime land. coastal erosion. Some communities may require action to adapt our coastline to this growing risk. Dynamic Coast have produced maps showing the potential future coastline, extract shown below.



Water scarcity – this could affect green networks, households, and industries that use water such as distilling.

Please note that there is a separate evidence report paper that, amongst others, covers issues of flood risk (SFRA, General Infrastructure and Spatial Strategy).

## Carbon Sequestration and Nature Based Solutions



## Protection of trees, woodland and peatland

Trees and woodland store carbon, as does peatland, saltmarsh and some grasslands. Scotland has targets for both woodland creation and peatland restoration, but is behind on both. It will be hard for Scotland to meet overall carbon targets without improvement. Peatland in particular is a concern as where it is eroding or drying out it actually causes emissions.

The Scottish Governments Control of Woodland Removal Policy restricting the circumstances and type of woodland that can be felled, and generally new replacement planting is required. It takes time however for new trees to replace the carbon value of mature ones.

Planning can help protect trees, woodland and peatland, and require and encourage new planting when development is proposed.



In 2021, our woodlands and grasslands sequestered over 70 tonnes of CO<sub>2</sub>. This equates to 600kg of CO<sub>2</sub> for every resident of the County.

Urban trees and greenspaces as well as blue infrastructure can help reduce air temperatures in urban areas in the summer therefore having a positive impact on wellbeing and human health.

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<sup>i</sup> IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3–32, doi:10.1017/9781009157896.001.