

ClimatEvolution

A VISION FOR A PLACE-BASED TRANSITION TO
CLIMATE RESILIENCE IN EAST LoTHIAN

MAY 2020



*“ When we try to pick out
anything by itself, we find
it hitched to everything
else in the universe. ”*

John Muir, 1911



An aerial photograph showing a coastal town on the left, with a large body of water and a sandy beach. The town is surrounded by a patchwork of green agricultural fields and some industrial or commercial buildings. The text is overlaid on the right side of the image.

“ For those saying this is too much, and too expensive, the evidence shows that the global cost of inaction far outweighs the cost of action. Future generations will end up paying even more if we fail to take action now”

Roseanna Cunningham

Cabinet Secretary for Environment, Climate Change and Land Reform

Statement to the Scottish Parliament, 14 May 2019

> contents

1. Executive Summary	pg. 1	5. The Climate Resilience Zone Strategy	pg. 19	8. The Action Plan	pg. 53
2. Introduction	pg. 3	5.1 The Strategic Plan	pg. 19	8.1 Phased Delivery	pg. 53
2.1 Background	pg. 3	5.2 Theme 1: Access and Movement	pg. 21	8.2 Funding Overview	pg. 53
2.1.1 Introduction	pg. 3	5.2.1 Vision and Approach	pg. 21	8.3 The Action Plan	pg. 54
2.1.2 The Strategy Area	pg. 3	5.2.2 Strategy	pg. 21	8.4 First Steps: Priority Projects	pg. 67
2.1.3 A Fresh National Development Area	pg. 3	5.2.3 Meeting the Vision Objectives	pg. 23	9. Benchmarking	pg. 68
2.1.4 Place Identity	pg. 5	5.3 Theme 2: Managing Water	pg. 25	9.1 Precedent Study	pg. 68
2.2 The Brief	pg. 7	5.3.1 Vision and Approach	pg. 25	10. Reflection	pg. 73
2.2.1 The Client Group	pg. 7	5.3.2 Strategy	pg. 25		
2.2.2 Summary of the Brief	pg. 7	5.3.3 Meeting the Vision Objectives	pg. 29		
2.3 Climate Change	pg. 7	5.4 Theme 3: Culture, Heritage and Leisure	pg. 31		
2.3.1 Overview	pg. 7	5.4.1 Vision and Approach	pg. 31		
2.3.2 Scotland and East Lothian Climate Emergency	pg. 8	5.4.2 Strategy	pg. 31		
2.3.3 Mitigation, adaptation and sequestration	pg. 8	5.4.3 Meeting the Vision Objectives	pg. 34		
3. Vision	pg. 9	5.5 Theme 4: Greenspace and Biodiversity	pg. 37		
3.1 Testing the brief	pg. 9	5.5.1 Vision and Approach	pg. 37		
3.1.1 Thinking Strategically	pg. 9	5.5.2 Strategy	pg. 37		
3.1.2 Workshop	pg. 9	5.5.3 Meeting the Vision Objectives	pg. 39		
3.1.3 The Vision	pg. 10	5.6 Theme 5: Strong Communities, Regeneration and Enterprise	pg. 41		
4. Place Analysis	pg. 11	5.6.1 Vision and Approach	pg. 41		
4.1 Overview	pg. 11	5.6.2 Strategy	pg. 41		
4.2 Assets	pg. 11	5.6.3 Meeting the Vision Objectives	pg. 43		
4.3 Constraints	pg. 13	6. Challenges	pg. 45		
4.4 Socio-economic profile	pg. 15	6.1 Setting a boundary	pg. 45		
4.4.1 Population Structure and Predicted Change	pg. 15	6.2 Naming the Zone and Branding	pg. 45		
4.4.2 Labour Market and Commuting Patterns	pg. 15	6.3 Land Ownership and Partnership	pg. 45		
4.4.3 Deprivation	pg. 15	6.4 Timings	pg. 48		
4.4.4 Trends	pg. 15	6.5 Management of the Climate Resilience Zone	pg. 48		
4.5 Land ownership	pg. 17	7. The Core Area	pg. 49		
4.6 Current proposals	pg. 17	7.5.1 Baseline	pg. 49		
4.6.1 Allocated Land	pg. 17	7.5.2 Strategy	pg. 49		
4.6.2 Transportation studies	pg. 17				

> figures

fig. 1:	The Strategic Plan	pg. 2
fig. 2:	Area of Study	pg. 4
fig. 3:	Place Plan	pg. 6
fig. 4:	Plan issued with brief	pg. 7
fig. 5:	Core themes diagram	pg. 10
fig. 6:	Assets plan	pg. 12
fig. 7:	Constraints plan	pg. 14
fig. 8:	Composite SIMD Plan	pg. 16
fig. 9:	Land ownership and allocated land	pg. 18
fig. 10:	Strategic Plan	pg. 20
fig. 11:	Theme 1: Access and Movement Strategy	pg. 22
fig. 12:	Theme 2: Managing Water Strategy	pg. 26
fig. 13:	Montage representation of watersports	pg. 28
fig. 14:	Water constraints and opportunities	pg. 29
fig. 15:	Theme 3: Culture, heritage and leisure strategy	pg. 32
fig. 16:	Existing cultural attractors	pg. 33
fig. 17:	Proposals for a re-opened Bankton Adit	pg. 35
fig. 18:	Theme 4: Existing Habitat Opportunities and Constraints	pg. 38
fig. 19:	Theme 4: Greenspace and Biodiversity Strategy	pg. 40
fig. 20:	Theme 5: Strong Communities, Regeneration and Enterprise Strategy	pg. 42
fig. 21:	Typical image of open space encompassing large areas of grass	pg. 43
fig. 22:	Open Space: After	pg. 44
fig. 23:	Boundary considerations	pg. 46
fig. 24:	Proposals for a geothermally heated Lido within Greater Blindwells	pg. 47
fig. 25:	Greater Blindwells preliminary testing	pg. 48
fig. 26:	Healthy places approach underpinning proposals for Greater Blindwells	pg. 48
fig. 27:	Baseline	pg. 50
fig. 28:	Core Plan	pg. 51
fig. 29:	Action Plan Timeline	pg. 56
fig. 30:	Benchmarking Summary	pg. 69
fig. 31:	Benchmarking Consultation Boards	pg. 70
fig. 32:	Benchmarking Consultation Boards	pg. 71
fig. 33:	Benchmarking Consultation Boards	pg. 72
fig. 34:	Timeline Extract	pg. 74

1. Executive Summary

OPEN (Optimised Environments Ltd) and PBA Stantec were commissioned in September 2019 by a multi-agency steering group, led by East Lothian Council, to produce a strategy and action plan for the creation of a “Climate Resilience Zone” within the western part of East Lothian. This area has seen economic decline through the demise of traditional industry. Increased patterns of commuting haven’t supported vibrant places.

This strategy is intended to set out a vision for the potential future use and development of land in the area. It is not intended to be a fixed masterplan, setting out firm projects for delivery. However, the outcome of the consultation on this document and future engagement around the finalised version, may clarify where there are clear opportunities across the area that can be pursued in line with the vision to deliver multiple benefits for people, places the environment and economy in this place.

This is a vision for a place-based transition to climate resilience within East Lothian. The proposal covers a sub-regional area and contains a range of measures supporting mitigation, adaptation and sequestration of climate change impacts.

Tackling climate change impact is the central focus of this strategy; proposals which will change habits and so significantly reduce emissions have been set out alongside those proposals which address the impacts of climate change. There are other issues to consider; this part of East Lothian faces socio-economic challenges within the existing towns as well as future significant change, including the opportunities to redevelop the former Cockenzie Power Station site and the potential to deliver a larger new settlement at Blindwells. These can offer regeneration, and improved placemaking across the whole area. Designing for better health and well-being through the lens of climate change has also been an important part of this strategy; as a nation we are facing levels of poor health arising from poor diets and a lack of activity which are unprecedented. The communities surrounding this area (Tranent, Prestonpans, Cockenzie/Port Seton, Wallyford and western Musselburgh) contain most of the areas lowest in the Scottish Index of Multiple Deprivation health rankings within East Lothian.

These three issues of climate change, placemaking and health and well-being have been applied to a series of themes within the Zone: active travel, water management, culture, heritage and leisure, greenspace and biodiversity, and

robust resilient communities. A considerable amount of Place Analysis has been undertaken and this is summarised within this study together with an overarching “Climate Resilient Zone” strategy which has then been distilled into the key themes, setting out the projects within each category which are then assessed against the three overarching principles. The projects are then tabulated into an Action Plan together with a review of potential funding sources and partners for Project Delivery. Several other strategies were assessed as a benchmark review for this study and these are included, together with a summary of some of the challenges there will be to deliver such an ambitious plan over a long time frame.

This is not a detailed masterplan; it is a high-level strategy with many ideas that will help stimulate further debate and guide future decision-making.

The strategies within the Zone offer opportunities to repair a damaged landscape through the remediation of brownfield land, the restoration of water courses and the reuse of buildings where possible; these are sound objectives in valuing our land and places and being sustainable in how we regenerate the existing and develop new communities.

Some of the most radical and exciting opportunities lie within those outlined for energy, within the water management strategy within section 5.3.

A combination of geothermal energy from mine water, heat from the sewers combined with micro-hydro could combine with the water management strategy to allow environmental clean-up and give carbon neutral energy supplies. In addition, there are opportunities to raise capital on a continuous long-term basis through owning the apparatus which connects the heat sources to housing and business. If this was done by a not for profit organisation, then significant sums can be raised and used to provide life-changing regeneration benefits for those who live locally.

This turns the legacy of mining history into a positive force for a clean energy future and will be a unique selling point for the Climate Resilient Zone; it will offer an exciting transition from coal to carbon neutral.

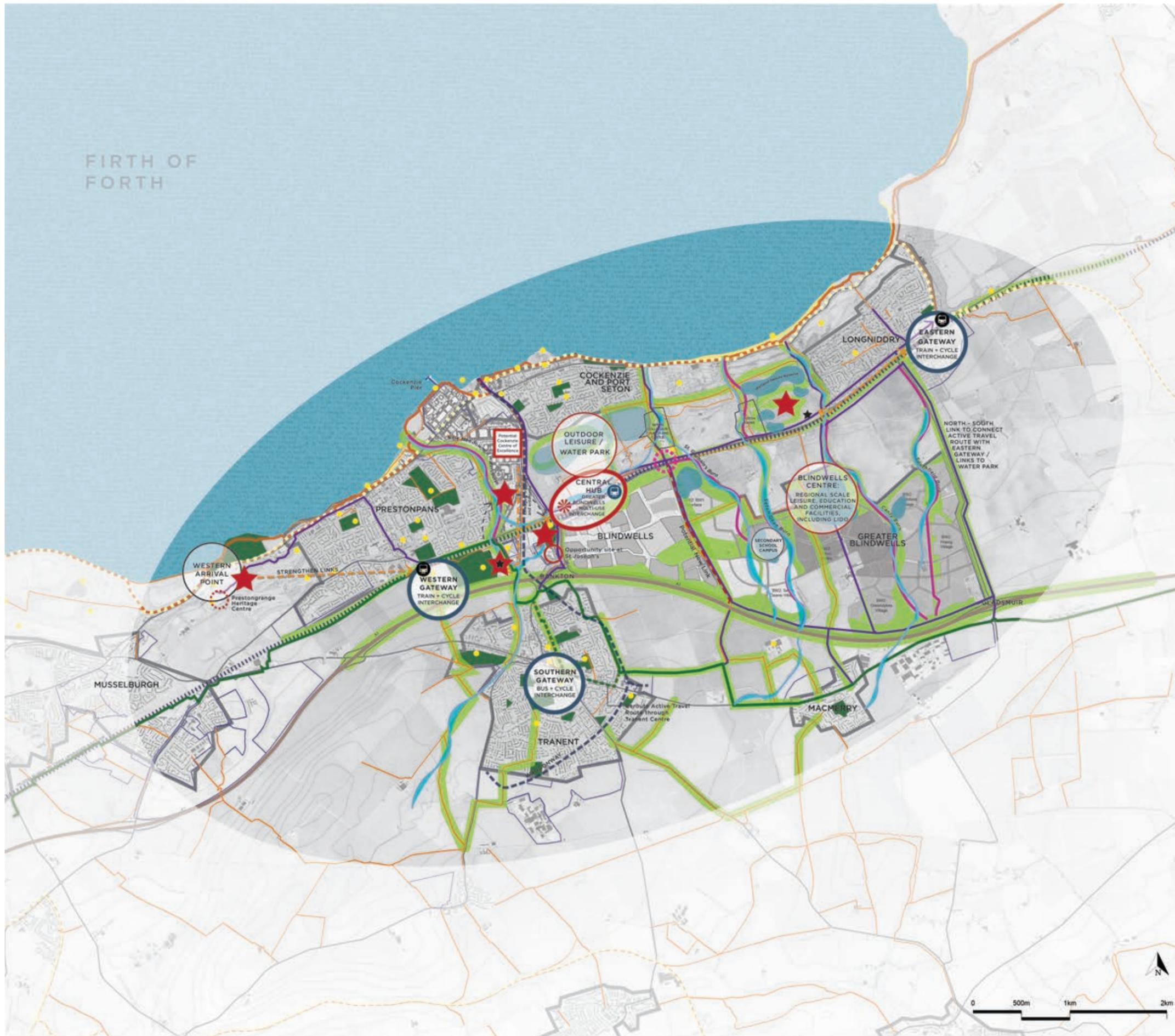
There also needs to be significant change around the use of the private car and addressing means of encouraging sustainable transport use is also considered. Active travel through increased cycling and walking gives added benefits for health but in an aging society other means of sustainable movement will also need to be provided for. Fundamental to the changing pattern of car use is the encouragement of enterprise and the creation of jobs; being able to live and work locally encourages active and sustainable travel and an increase in supporting local facilities.

Some of the ideas within this strategy are new, and other parts of the strategy includes projects or studies which are already under scrutiny and places them within the context of the Climate Resilience Zone and recalibrated against climate change principles. The project area is complex, as is the process and understanding for meeting the climate change objectives. Some fundamental decisions will be required at all political levels in order to allow many of the projects to come forward.

This approach could be transformational, giving increased parity to everyone that lives here. Partnership working, a clear focus and a collective impact will all be required to deliver the vision of creating:

“A destination with a green and blue infrastructure network* that responds positively to place, resonating with its natural, cultural and historic assets and traditions, reinforcing local identity with a vision that best serves future generations and stimulates social, economic, and environmental regeneration.”

[*Defined by the Scottish Government within “Green Infrastructure: Design and Placemaking” as: “the use of ecosystems, green spaces and water in strategic land use planning to deliver environmental and quality of life benefits]



- CENTRAL HUB**
 Proposed multi-use interchange
 All transport modes: Main arrival point
 New train station located along upgraded National Rail Line
 Possibility of infrastructure changes connecting to the Bankton adit
 Reconsideration of the A198 corridor, with active travel and planting opportunities
- New connection from the A1 to A198 removes existing level crossing and encourages north-south movement. Opportunity to review A198 corridor for improved connectivity, and reduced speeds
- WESTERN GATEWAY**
 Including active travel and public transport hub
- SOUTHERN GATEWAY**
 Bus/cycle/pedestrian connections
 (Relocate the Active Travel Route through Tranent)
 Cycle hire station and Active Travel Bike Park allowing pick-up to buses offering safe, secure storage allowing for enhanced e-bike facilities-coffee, maintenance, etc
- EASTERN GATEWAY**
 Including active travel and public transport hub
- WESTERN ARRIVAL POINT**
 Important arrival point on the coastal tourist route and vis the John Muir Way, linked with regenerated Prestongrange Heritage Centre
- Regenerated Prestongrange Heritage Centre
- OUTDOOR LEISURE / WATER PARK**
 (Indicative Location) Subject to further study
 Including: Lido; kayak/sailing; spa; and use of geothermal to heat water
- GREATER BLINDWELLS**
 Manage water through Blindwells
 Open up watercourses
 Differing character and local ecosystems
- Potential geothermal 'attractor'/opportunity site**
 Potential site for 'attractor' harnessing the potential source of geothermal energy.
- Existing railway station
 - Potential new railway station
 - Proposed blue-green infrastructure
 - Proposed waterbodies
 - Proposed renaturalised water courses
 - Council owned green space
 - Path network (existing and currently proposed)
 - Proposed additional paths with cycle infrastructure
 - National Cycle Route
 - Historic Waggonway
 - Proposed Active Travel Corridor
 - Proposed realigned Active Travel section
 - Proposed leisure routes along realigned waterways
 - John Muir Way
 - Railway line
 - Strategic Road Network
 - Proposed Road Link
 - Other geothermal opportunities
 - Existing assets / cultural & leisure destinations
 - St Joseph's School
Owned by the council: opportunity site
 - Centre of Excellence
Training School and exemplar development in modular manufacture and construction
 - LDP Allocations
 - Battle of Prestonpans Visitor Centre

2. Introduction

2.1 Background

2.1.1 Introduction

OPEN (Optimised Environments Ltd) and PBA Stantec were commissioned in September 2019 by a multi-agency steering group, led by East Lothian Council, to produce a strategy and action plan for the creation of a “Climate Resilience Zone” within the western part of East Lothian. A broad area of study was identified within the brief and is shown on the accompanying aerial photograph.

This strategy is intended to set out a vision for the potential future use and development of land in the area. It is not intended to be a fixed masterplan, setting out firm projects for delivery. However, the outcome of the consultation on this document and future engagement around the finalised version, may clarify where there are clear opportunities across the area that can be pursued in line with the vision to deliver multiple benefits for people, places the environment and economy in this place.

The strategy has been a process of evolution. This document seeks to robustly set out the context for the proposal, the vision for what the strategy and action plan seeks to achieve, a summary of the data collation and ideas which have generated the strategy and finally the strategy itself.

This is not a detailed masterplan; it is a high-level strategy with many ideas that will help stimulate further debate and guide future decision-making. Some of the ideas are new, and other parts of the strategy bring in projects or strategies which are already under scrutiny and places them within the context of the Climate Resilience Zone strategy as seen through the lens of climate change. The project area is complex, as is the process and understanding for reducing climate change impacts. Some fundamental decisions will be required at all political levels in order to allow many of the projects to come forward. These are set out within the strategy along with some ideas for projects that can come forward more quickly, including potential pilot projects.

2.1.2 The Strategy Area

East Lothian lies to the east of the City of Edinburgh and also bounds Midlothian and the Scottish Borders. The area is known for the quality of its environment. Much of the East Lothian agricultural land is Prime, and proportionally the area has some of the highest numbers of Scheduled Ancient Monuments, Listed Buildings, Conservation Areas and Historic Gardens and Designed Landscapes in the country. Some of the lowest rainfalls and highest sunshine hours in the country can also be claimed by East Lothian. It is also predicted as being one of the Council areas that will undergo the highest population growth in Scotland by 2035.

The western area of the Council is set to undergo the most change. Part of the Lothian coalfields, it has traditionally formed the industrial face of East Lothian. This has created a very different character to the eastern towns, villages and landscape of the east. Regeneration of settlements is ongoing following industrial decline but has also left behind a rich and largely untapped heritage; the “Place Plan” (see figure 3) seeks to set this out graphically.

This also gives rise to opportunity. A new settlement at Blindwells has started on site on land that was used for opencast mining within living memory; there is potential to expand this eastward and create Greater Blindwells New Town on more historic disturbed land hence also requiring remediation. The closure of Cockenzie Power Station in 2013, with the loss of 100 jobs, left a large brownfield site behind; the Council has acquired the site and proposals for its future are being explored. The site’s strategic location next to a jetty, close to a railway line, and the A1 make it an attractive site for inward investment.

Proximity to Edinburgh has led to significant housing allocations in the western area of East Lothian, including at Blindwells, Craighall, Wallyford, Tranent and Musselburgh. These developments will add significantly to the population within the western part of East Lothian; making the most of these opportunities through proper planning, allowing regeneration of the existing communities, and offering attractive lifestyles through living and working locally and thus reducing car borne travel is, alongside managing climate change, at the heart of this proposal.

2.1.3 A Fresh National Development Area

The overall emerging vision for the Climate Resilient Zone is for an influential, innovative, healthy and carbon neutral place that is a vibrant destination and attractor. The Blindwells Development Area and former Cockenzie Power Station site, taken together, are 625 hectares, the vast majority of which is previously developed land. Over time, these strategic projects could deliver significant new employment and economic development opportunities, a substantial quantum of new homes including affordable homes, as well as a new regional town centre and new infrastructure, including low carbon infrastructure, as well as new education, community, healthcare, cultural, leisure and tourism facilities.

Blindwells new settlement is an Edinburgh and South East Scotland City Deal project. The initial phase of the new town is underway; the allocation of its safeguarded expansion land is subject to demonstrable collective landowner willingness to promote a single comprehensive solution for the Blindwells Development Area, the satisfactory outcome of ongoing technical work, the formation of a public-private partnership, the development of a viable business case led by East Lothian Council focusing on up-front land remediation and the up-front and early delivery of shared enabling and supporting infrastructure, and a comprehensive solution and delivery vehicle that will ensure the completion of a single new town. The former Cockenzie

Power Station site is adjacent to the new town site and is currently allocated for energy related uses, but offers considerable potential for a wider range of land use. The Countryside Around Town designation of the East Lothian Local Development Plan 2018 aims to balance built development with the enhancement of green and blue networks. It seeks to knit neighbouring communities and sites together with shared multifunctional infrastructure, and to create an attractive setting for investment and job creation, on-going regeneration and the delivery of strategic sites. The former Cockenzie Power Station site is currently allocated for energy related uses, but offers considerable potential for a wider range of land use.

Strategic infrastructure projects are being considered in the area. These include potential interventions on the East Coast Main Railway line that could lead to shorter inter-city journeys, a new regional multi-modal transport hub, and an increase in the frequency / capacity of local train and other public transport services. There is scope to improve strategic and local road and active travel links, and to enhance digital connectivity. Decentralised energy and heat networks could develop within existing communities and new development sites. There is considerable potential for environmental, biodiversity and habitat improvement, and to make best use of water assets, and to provide opportunities to enhance health and well-being. This could enable innovation and enterprise, education and skills development as well as training and employment opportunities.

There would therefore be significant national, regional as well as local benefit in the designation of a new National Development that centres on this area within the Scottish Government’s National Planning Framework 4 (NPF4). The purpose of such a designation would be to identify and promote:

- the area as nationally important exemplar of how to enable a just transition to net zero carbon through sustainable inclusive growth over the short, medium and longer term;
- the need to align and co-ordinate the delivery of a package of national, regional and local infrastructure that is required to enable and support this growth, while ensuring it addresses the inter-relationships and dependencies between challenges and opportunities – i.e. delivers multi-functional shared solutions and multiple shared benefits; and
- the need for alignment at national, regional and local level as well as organisational and sectoral alignment to provide co-ordinated action and collective impact to maximise positive outcomes and long term benefits.

The Council wants to consider the future of this place and these strategic development sites synergistically for the benefit of people, places, the environment and economy. The Council is focused on how this development strategy can be enabled in a sustainable and inclusive way while enabling a just transition to net zero carbon.

2.1.4 Place Identity

The plan graphic illustrates a snapshot of the Climate Resilience Zone area. The area is diverse in cultural heritage as a result of a range of events and industries which have influenced the growth of the traditional settlements.

Mining has – from the 13th century to the end of the 20th century- been a major influence across most of the area, although greater in some areas than others. There is an invisible line somewhere immediately west of Longniddry, cutting through the potential new Greater Blindwells area, at which the landscape subtly changes from the industrial west to the rural east. This is reflected by Longniddry having a very different character to the other settlements; it is a planned settlement, and despite weaving and quarrying origins has for the last 100 years been a desirable commuter settlement.

Prestonpans has its origins in salt panning (from where it takes its name) and mining. It has strong connections with the Newbattle monks who came here and established some of these early industries which included brewing and soap making; all of these are gone now. The town has an arts community, evident in the murals which tell the stories of past places and famous events. There is also a Prestonpans Tapestry which has been widely exhibited and tells the story of the Battle of Prestonpans, a victory for the Jacobites on 21 September 1745.

Cockenzie and Port Seton were primarily fishing villages. Now a united settlement, Cockenzie was originally a royal burgh. The settlement has a historic character especially toward the coastal edge. The fishing industry has declined although some smaller boats are still operational from Port Seton.

Tranent is a coal town; coal was first mined in the early 13th century; Tranent was connected with the salt pans at Cockenzie and the harbour at Port Seton via the historic Tranent to Cockenzie Waggonway, dating back to 1722.

Tranent also had connections with the Battle of Prestonpans - the Parish Church served as a triage centre, and is also known for the Massacre of Tranent in 1797, when local people were killed by soldiers after protesting against conscription into the British Army to fight the Napoleonic wars.

Remnants of all of these are visible in interpretation boards, architecture, paths, and statues.

Agriculture has also been important in the development of this area, and there is significant prime land within the area despite its industrial economy. One of the biggest market gardens (David Lowe and Sons or Stoneyhill Market Gardens Ltd) was once near here at Musselburgh consisting of 2000 acres under production. During the war many Prisoners worked here, Germans and Ukrainians mainly. State of the art methods were used to sterilise the soil and extend the growing season using steam, powered by coal.

This history and present production of crop production in East Lothian gave it the name as the “Garden County” however the area has several destination names. The area is also known for its high levels of sunshine hence is also the “sunshine county”.

East Lothian is well-known for golf and sandy beaches. The history of the western area of the Council is rich and often overlooked, and whilst many of these aspects are already promoted, more could be done to build on this and link these together in order to create a unique destination.



Prestonpans Murals



John Fowler & Co. Brewery Prestonpans
One of 16 breweries in Prestonpans between the 1700s and 1960



Prestonpans Salt Works
Salt panning began here in 1100s



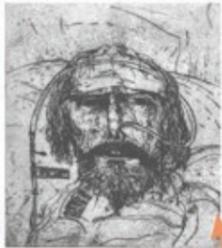
Jackie Crookston: Tranent heroine in Napoleonic times



Tranent Parish Church
Triage centre for the Battle of Prestonpans



John Bellany born in Port Seton, 1942



Oyster Dredging at Cockenzie - 1700s



Boatyard at Cockenzie Harbour - Closed 1990s



Gosford House

East Lothian:
"Sunshine County"
The sunniest and warmest region in Scotland

IDENTITY

- 'Garden County'
- Go East Lothian
- 'Scotland's Golf Coast'
- 'Edinburgh's Coast and Countryside'
- 'Home of the Flag'



The harbours of Prestonpans, Cockenzie and Port Seton were used for fishing historically



The area was populated by mines from the 13th Century until the year 2000



Brussels sprouts growing in East Lothian



Potato picking girls



Land Girls

Prime Agricultural Land
-Major UK supplier of Brussels Sprouts
-Market garden tradition
-History and innovation

fig. 3: Place Plan

2.2 The Brief

2.2.1 The Client Group

This strategy has been led by East Lothian Council (ELC) working in partnership with the following agencies and statutory bodies:

Scottish Government, and

Scottish Natural Heritage (SNH) | Scotland's environmental agency are interested in connecting communities, better placemaking, protection of the environment and extending biodiversity, and access to greenspace.

Together with the Edinburgh and Lothian Drainage Partnership consisting of:

Scottish Water | Scottish Water supply drinking water and manage wastewater. Their pledge is to become a zero-carbon user of electricity by 2040 – five years before the net zero target. Their interest is on the management of surface water and flooding to enable them to reduce the current system of combined sewers along the coast hence cleaning up the coastline. They are also keen to explore the use of their resources for alternative technology-driven energy supplies e.g. heat arising from sewage and recovering energy from wastewater.

SEPA | Their interest lies in being responsible for environmental regulation and national flood forecasting, flood warning and as the strategic flood risk management authority. The management of water is complex within this area: surface water, mine water, and drainage. Air quality will also be an issue if behaviour patterns don't change and will be exacerbated by increased population.

2.2.2 Summary of the Brief

The study area established by the brief is shown here.

The brief was originally for a Vision and Action programme for a Destination Parkland between the existing settlements of Tranent, Prestonpans, Cockenzie, Port Seton and Longniddry accounting for plans for the Cockenzie Power Station site and Greater Blindwells New Town. The core of the area is defined by the Countryside Around Towns designation of the East Lothian Local Development Plan 2018, which seeks to enable the enhancement of the green and blue network here to balance the significant built development proposed.

This was to encompass hard/ soft/ blue/ green infrastructure to connect communities and support delivery of nearby strategic development sites with shared infrastructure. The Vision was to help stimulate social, economic and environmental regeneration, being inspirational in how the Parkland can respond to the climate emergency in terms of both mitigation and adaptation.

The emphasis changed from Destination Parkland to Climate Resilience Zone during the first stages of the commission; this responds to ELC also declaring a Climate Change Emergency and shifted the vision into thinking more strategically in order to properly assess how this area could respond to the needs for adaptation, mitigation and sequestration.

2.3 Climate Change

2.3.1 Overview

'Climate change' refers to systematic, large-scale, long-term shift in the planet's weather patterns and average temperatures. There is significant evidence that the climate is changing, and that the signs and impacts of global warming are speeding up. Global temperatures are rising and have reached unprecedented levels compared to the last millennium. This creates warmer winters which are much wetter, and summers which are drier. In summer this gives increased risk of fires, whilst in winter- combined with rising sea levels as the polar cap melts- this gives increased levels of flooding.

In their most recent report, the International Panel for Climate Change states that human activity is 'extremely likely' to be the main cause of climate change. The Met Office's "State of the UK Climate" report for 2018 shows that the ten hottest years in the UK since 1884 have all happened in the last 17 years.

Evidence has shown that the high levels of greenhouse gases in the atmosphere are the leading cause of increasing global temperatures. Scientists have been able to rule out natural events as causes of climate change, such as volcanic activity, changes in solar activity, or natural sources of CO2 although they may have a small effect, on top of human contributions.

The main sources of greenhouse gas emissions for 2017 in Scotland were as shown on Table B1 on the opposite page.

The result of this, according to the Met Office UKCP18 Climate Projections, is that by 2070 East Lothian will experience:

Warmer, Drier Summers: up to 2.6°C warmer by 2070 with around 11-14% less rainfall, bringing the potential for extended periods of drought; by the end of this century hot summers are predicted to become more likely;

Milder, Wetter Winters: up to 2.2°C warmer by 2070, with up to 18% more winter rainfall, increasing the risks of storms and flooding; more frequent winter rainfall could bring increased flooding from rivers and increased damage to buildings;

Rising Sea Levels: Sea levels around East Lothian's coast are projected to rise by up to 90cm by 2100; increased frequency of storm surges could lead to more widespread coastal flooding and erosion;

Severe Weather Events: The predicted trend is for greater frequency and intensity of extreme events, including storms and floods, as well as heatwaves and droughts.

Source: <https://www.metoffice.gov.uk/research/collaboration/ukcp>



fig. 4: Plan issued with brief

2.3.2 Scotland and East Lothian Climate Emergency

The Scottish Government passed the “Climate Change (Emissions Reduction Targets) (Scotland) Act 2019” in September 2019, and it received Royal Assent on 31 October 2019.

This commits Scotland to becoming a net-zero society by 2045 – five years before the rest of the UK and in line with the advice from the government’s independent expert advisors, the UK Committee on Climate Change. The Scottish Government has also responded to the global climate emergency by adopting a target reduction in emissions by 75% by 2030. To ensure we continue to take an evidence-based approach the Scottish Government will commission new advice from the Committee on Climate Change on the UK wide pathway to 2030.

In order to achieve this target measures for accountability for meeting the targets will be set, with Ministers now required to report on progress to tackle climate change in every sector, every year.

ELC declared a Climate Emergency at the end of August 2019. The Council has resolved to take “urgent action to make all our Council Services net Zero

Carbon as soon as reasonably practicable or in any case by 2045 and to lobby, support and work with all relevant agencies, partners and communities to fulfil this commitment. ELC will also commit to work with our communities and partners towards making East Lothian a carbon neutral county as well as enabling the county to deliver its part of wider national and international commitments.”

East Lothian Council has a “Climate Change Strategy 2020–2025” which was approved at the Cabinet meeting on 21 January 2020. The Climate Change Strategy sets out East Lothian Council’s commitment to tackling the Climate Emergency at a local level, leading by example and working with our partners to achieve emissions reduction targets, improve sustainability and equality across East Lothian, and contribute to the national and international efforts to tackle climate change. It sets out the vision and overall aims for a Net Zero Council and a Carbon Neutral East Lothian, with specific outcomes, key priority areas and actions over the next five years towards achieving these overall aims.

It can be viewed in full here:

<https://www.eastlothian.gov.uk/climatechangestrategy>

2.3.3 Mitigation, adaptation and sequestration

The key tenets for tackling climate change and bringing down carbon emissions lie in taking action to mitigate, adapt or sequester. What this means can broadly be explained as follows:

Mitigation

- action which mitigates will reduce the effects of climate change through reduction and limitation of greenhouse gases. Mitigation addresses the root causes, by reducing greenhouse gas emissions, and will include action such as replacement of car travel by active travel, or gas heating by geothermal heating;

Adaptation

- adaptation accepts we need to adapt to living with climate change and seeks to lower the risks posed by the consequences of climatic changes. This may include large-scale infrastructure changes – such as building defences to protect against sea-level rise – as well as behavioural shifts such as individuals eating less meat and using less water, farmers planting different crops and less use of the car;

Sequestration

- sequestration is a solution for reducing carbon levels through terrestrial or geological storage of carbon for the long term, often through nature based infrastructure incorporating tree planting, peatland protection and restoration or water bodies.

	TOTAL	Percentage share by sector	Carbon dioxide		Nitrous oxide	Fluorinated gases	
				Methane			
TOTAL	40.5	100.0%	29.6	6.4	3.2	1.3	
Transport (including International Aviation and Shipping)	14.9	36.8%	14.7	0.0	0.2	0.0	
<i>Transport (excluding IA&S)</i>	13.0	32.1%	12.9	0.0	0.1	0.0	
<i>International Aviation and Shipping (IA&S)</i>	1.9	4.6%	1.9	0.0	0.0	0.0	
Agriculture and Related Land Use	9.7	23.9%	2.8	4.3	2.6	0.0	
Business and Industrial Process	8.7	21.4%	7.4	0.0	0.1	1.2	
Residential	6.0	14.9%	5.8	0.1	0.0	0.1	
Energy Supply	6.0	14.9%	5.6	0.4	0.1	0.0	
Development	2.0	4.9%	1.8	0.0	0.1	0.0	
Waste Management	1.7	4.2%	0.0	1.6	0.1	0.0	
Public Sector Buildings	1.1	2.7%	1.1	0.0	0.0	0.0	
Forestry	-9.5	-23.6%	-9.6	0.0	0.1	0.0	

Table B1: Scottish Greenhouse Gas Emissions by Gas and by Scottish Government Source Sector, 2017. Values in MtCO₂e (Source: “Scottish Greenhouse Gas Emissions 2017”, published by the Scottish Government)

3. Vision

3.1 Testing the brief

3.1.1 Thinking Strategically

The brief has been developed through the course of this commission, although the outcomes still align with the original brief specification. Taking climate change as the overarching priority, rather than blue-green infrastructure or destination Parkland, together with an encouragement at the outset to think strategically and with vision, changed the course of how the boundary for the study area was established and how the action plan was structured. By thinking strategically, on a sub-regional scale, bringing in major infrastructure ideas which are already circulating (such as improvements to the east coast rail line), and linking them to other constraints and opportunities there can be proper planning for meaningful climate change measures to be implemented that will make a difference at a local and national level.

This became apparent early on in the process during the course of defining benchmarks and carrying out sieve mapping as part of the information and analysis process. Sieve mapping is a term describing the overlaying of different mapping layers in order to reveal opportunities and constraints. At this stage a boundary was suggested which encompassed the settlements themselves as well as the greenspace in between in order to ensure that the targets of using climate change adaptation, mitigation and sequestration as a means of regeneration and addressing inequalities could properly be addressed. Key targets for the study were fine-tuned from the brief in order to be able to give a coherent structure to the outcomes. Themes around the following subjects were all assessed against these priorities and the degree to which they meet the governments targets.

- the water environment;
- access and movement;
- strong communities, regeneration and enterprise;
- greenspace and biodiversity and
- culture, heritage and leisure

Further information on the analysis process is described within the following section 4 (Place Analysis).

Benchmarking was an important early stage; learning from examples

elsewhere. A number of different projects were examined on the themes “Destination Parks”, “National Parks and Regional Strategies”, “Routes and Trails”, “Sustainable Use of Resources” and “Community Regeneration”. They were assessed on relevance to this study and common elements of success identified. The findings have been applied to this strategy; the Benchmarking information is within section 9 of this document.

3.1.2 Workshop

Potential projects were drawn up and set out on strategic plans; the ideas were tested through an all-day stakeholder workshop held on 24 October 2019 in Musselburgh. This was attended by members of the steering group, several officers from different departments of ELC, as well as representatives from Scottish Enterprise, Sustrans, the National Health Service, Network Rail, Transport Scotland, the Coal Authority, Architecture and Design Scotland and the Greater Blindwells developers: Hargreaves and Taylor Wimpey.

The concept of a Climate Resilience Zone was widely supported, and comments from the workshop have, where possible, been included within the action plan. The extent of the opportunity around geothermal energy was the most unexpected part of the day; the scale of how much heat generation can be supported, means of enhancing this further, and how this can positively enable regeneration- to make housing stock in income deprived areas including Council housing stock more resilient- was all touched upon and a further feasibility and delivery programme is a first priority project arising from this strategy.

Some invitees couldn't attend the workshop and there have been other individual discussions with those people and departments namely the officers representing the ELC economic and tourism development, the active business unit, countryside and amenity as well as Central Scotland Green Network Trust (CSGNT) and VisitScotland. Their observations have been incorporated into the strategy and action plan.

Key Influences arising directly from stakeholder consultation:

(i) Boundary

Setting the boundary was tasked to the consultant team at the inception meeting. This was altered following the progress meeting with the steering group before being presented to the workshop. Opinion was divided as to whether there should be a boundary at all and if there was one, where

should it fall. The version within this consultation report is a softer “edge”. Arguments for a softer edge are based on allowing inclusivity of a wider area for the implementation of the principles of the Zone, sending a signal that this is to be the “norm” for how we think about place and climate change.

Benefits for an alternative fixed boundary are that the Zone would have a clear identity which makes it easy to promote and brand, and which can possibly make some funding applications easier in that the “Zone” is defined. A fixed boundary can be functional, relating to geographical management, such as water catchment systems. This would allow for easier climate resilient decision making as opposed to more traditional boundaries such as road alignments or policy constrained areas.

(ii) Land Ownership

Climate change effects do not recognise ownership boundaries and therefore the strategy has been developed more or less ownership “blind”. It is recognised however that this will lead to other discussion, opportunities and concerns, and so where possible, early action or “big” ideas which can be flexible in their location. Opening up the Bankton adit culvert and creating a new watercourse which also creates opportunities for energy supply could be an early action and is located on Council land.

(iii) Timing

Making sure the regeneration of the existing communities: Prestonpans, Cockenzie, Port Seton and Tranent is addressed within this strategy was strongly supported. However, it is also seen as essential that it happens and in tandem with new development to avoid disparity. This could create resilient communities, address fuel poverty and housing which is contributing to emissions, give local opportunities for employment, encourage local pride, and create easy routes for walking and cycling which promote better mental and physical wellbeing.

(iv) Resilient communities

The importance of local employment was emphasised. Sectors looking to locate are the skilled creative industries and horticulture industries including food growing and pharmaceutical. The untapped opportunity of geothermal energy is a very powerful story rooted in the identity of this place, which provided coal to the nation, now benefitting from the legacy with clean energy.

3.1.3 The Vision

The vision was set out within the brief and has been adjusted as described above leading to a revised description as:

“The Climate Resilience Zone will be a destination with a green and blue infrastructure network that responds positively to place, resonating with its natural, cultural and historic assets and traditions, reinforcing local identity with a vision that best serves future generations. At the core of this vision must be a positive response to the challenges and opportunities of the area which addresses the issues of climate change, health and wellbeing and sustainable placemaking with opportunities around:

- *The management of water;*
- *Access and movement;*
- *Culture heritage and leisure;*
- *Greenspace and biodiversity;*
- *Strong communities, regeneration and enterprise.”*

“The Vision produced is intended to help stimulate social, economic, and environmental regeneration.”



fig. 5: Core themes diagram

4. Place Analysis

4.1 Overview

The strategy is underpinned by detailed analysis of the existing situation in the Climate Resilience Zone study area. This analysis includes a variety of physical, social and cultural factors which, when considered together, combine to create place and denote a sense of identity within the area. The analysis includes identifying the existing assets and constraints via mapping of:

- infrastructure;
- nature conservation and habitat;
- cultural and natural heritage;
- woodland designations;
- Council ownership and LDP land opportunities;
- water and geothermal locations and opportunities.

The socio-economic profile of the area is also considered alongside the assets and constraints mapping and focuses on levels of deprivation and the current population makeup in relation to the employment, qualifications and commuting patterns.

Central to the successful application of any strategic proposals for the area is the land ownership. Therefore this was also mapped with respect to areas of land, which are currently under East Lothian Council ownership, as well as sites which have been allocated or safeguarded in the East Lothian Local Development Plan 2018.

4.2 Assets

The Zone is very well located close to the vibrant city of Edinburgh and within a growing area of East Lothian. These centres of population potentially provide a sufficient market to support the development of attractions here. The Firth of Forth coast has internationally important bird life, recognised through designation as a Site of Special Scientific Interest, Special Protection Area and Ramsar Site and also has considerable landscape value, with parts of the Zone enjoying very good views across the Forth. The area contains a significant amount of prime agricultural land, geothermal resource and a rich cultural heritage. Existing or potential tourism assets include Prestongrange museum, Cockenzie and Port Seton Harbour, the Waggonway and Prestonpans Battlefield. Transport links to the area are good. In addition the Heugh Meadowmill Local Biodiversity Site is a community asset allowing residents of Tranent and Prestonpans to have access to nature near their homes.

There are several Special Landscape Areas (SLAs) which play an important role in denoting the qualities which make this area of East Lothian unique and distinctive. It is of particular note that these SLAs cover a wide range of landscape types, from coast to agricultural land to inland lowland ridges and elevated woodland, over a relatively small geographical area.

Located within the Climate Resilience Zone boundary is the Prestonpans Coast SLA which provides the narrow, rocky, foreshore setting for Prestonpans and which is also designated for its geological importance, as well as containing established woodlands and Preston Links. The John Muir Way and Prestongrange Museum are important existing cultural and leisure assets which run through/are located within this SLA and the area has strong links with the sea as well as mining and salt panning. The views, both east and west along the coastline are another important asset in the area of Prestonpans.

To the east, the North Berwick to Seton Sands Coast SLA is known as the heart of East Lothian's recreational coast. It includes Seton Sands and an area of Gosford Sands and forms part of the iconic, highly scenic seascape which is bounded by the traditional fishing villages and settlements including Port Seton. The John Muir Way continues along the coast providing a connecting recreational route along the changing coastline.

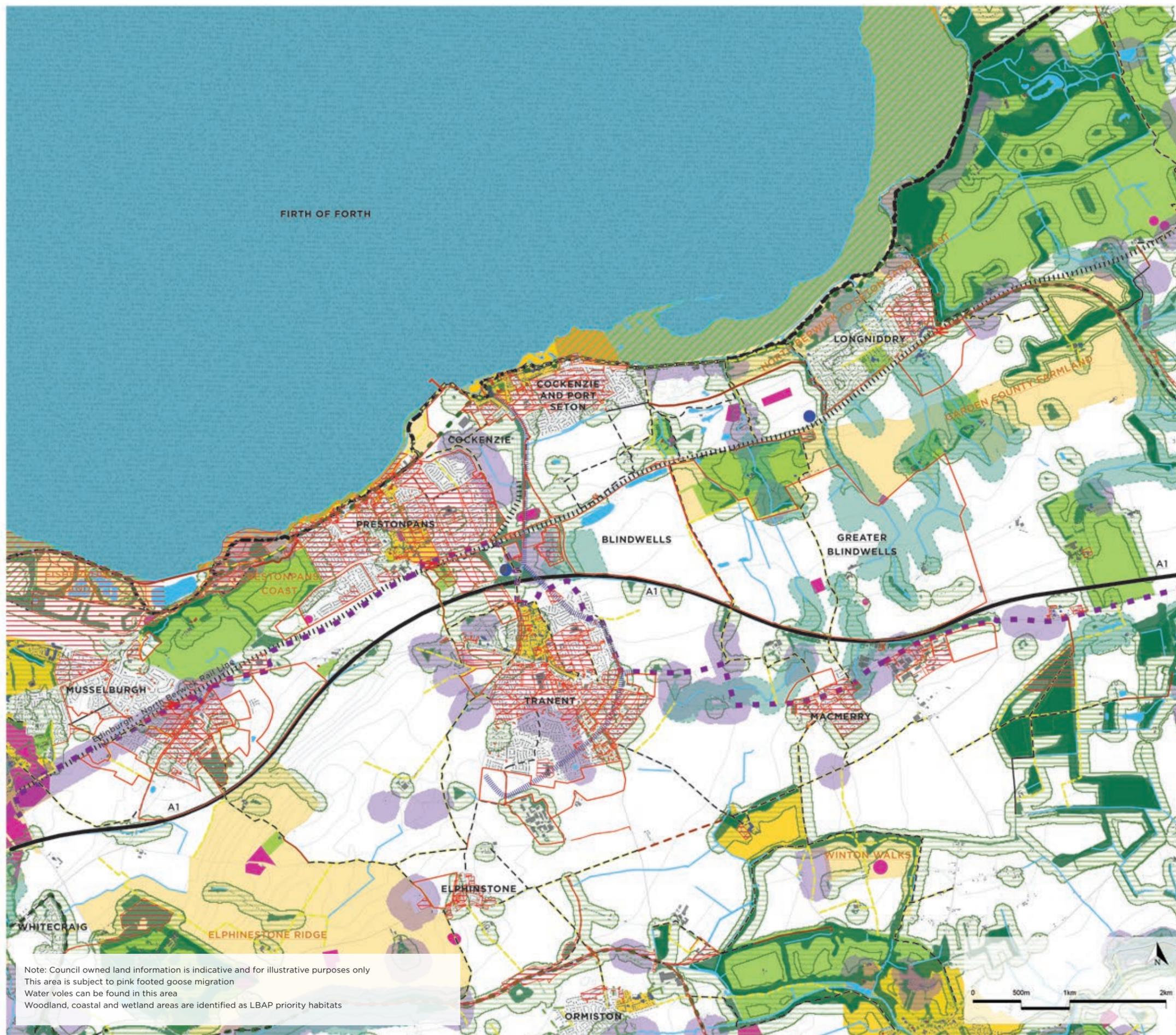
Further inland, still within the Zone, is the Garden County Farmland SLA which epitomises the agricultural landscapes of small estates based around grand estate houses including Seton House, Bankton House and St. Germain's

,steadings and small rows of estate cottages. This rich, prime agricultural landscape is some of the best in Scotland and has led to East Lothian having a reputation as the Garden County. This area includes attractive small watercourses running north-south and connecting with the coast, which form part of its character. The traffic free National Cycle Route 76 runs through this landscape along the Longniddry railway path and the area is reasonably well accessed via a network of rights of way and core paths.

Moving further inland, outwith the Zone, the topography changes and the wide rolling ridges of Elphinstone Ridge SLA and Winton Walks SLA provide important views over the Climate Resilience Zone area towards the sea as well as providing the backdrop to the wider coastal plain, which forms much of the Climate Resilience Zone site.

A series of Gardens and Designed Landscapes are located in or adjacent to the Zone, and there are some areas of ancient woodland, and woodland core areas. These are not extensive, reflecting the dominant land use as prime agricultural land, and are located in relation to designed landscapes, waterways and the A1 corridor with larger areas within the Gosford House estate. Set amongst these landscape assets are historic settlements, each with its own rich history and distinctive identity. Several, including Prestonpans, Tranent and Cockenzie, contain Conservation Areas and Listed Buildings. Scheduled Ancient Monuments are present throughout the area.

Herein lies an opportunity for the Climate Resilience Zone strategic proposals to enhance and promote the multitude of rich existing landscape and cultural assets. The existing resource is the starting point from which the subsequent proposals for a connected landscape framework flow. They are also the starting point for achieving the Zone's climate change, wellbeing and sustainability objectives.



- INFRASTRUCTURE**
- Rail Stations
 - Proposed Active Travel Corridor
 - National Cycle Route
 - Historic Waggonway
 - John Muir Way
 - Right of Way
 - Existing Core Path
 - New Core Path
 - Link Road
 - Future Link
- NATURE CONSERVATION AND HABITAT**
- SSSI / RAMSAR / SPA / NATURA 2000
 - Geodiversity Site
 - Wetland Habitat Network (source: SNH Integrated Habitat Network)
 - Woodland Habitat Network (source: SNH Integrated Habitat Network)
 - Grassland Habitat Network (Neutral and Acid) (source: SNH Integrated Habitat Network)
 - Outer Firth of Forth and St Andrews Bay Complex proposed Marine SPA
- DEVELOPMENT OPPORTUNITIES / LAND**
- Council Land Ownership
 - LDP development site opportunities
 - LDP Safeguarded development site opportunity
- CULTURAL AND NATURAL HERITAGE**
- Special Landscape Area
 - Scheduled Monument
 - Cultural Heritage Site
 - Conservation Area
 - Listed Buildings (A,B,C)
 - Gardens and Designed Landscapes including Local Gardens
- WOODLAND DESIGNATIONS**
- Ancient woodland, broadleaved and yew habitat woodland core areas
 - Tree Preservation Order point/area
- WATER AND GEOTHERMAL**
- Surface water courses and water bodies
 - Geothermal opportunities

Note: Council owned land information is indicative and for illustrative purposes only
 This area is subject to pink footed goose migration
 Water voles can be found in this area
 Woodland, coastal and wetland areas are identified as LBAP priority habitats

fig. 6: Assets plan

4.3 Constraints

In many cases, constraints may also be seen as opportunities and this is reflected in the overlap between the Assets and Constraints plans. Many of the assets described above, although providing the starting point for a rich cultural and physical landscape framework, also pose limits to development. When taken together with the full extent of constraints, there is very little 'white space' or constraint free areas within the Zone. Central to the strategic proposals for the Climate Resilience Zone is the concept that constraints may in fact lead to creative opportunities or become opportunities in and of themselves.

One of the major constraints identified, is the vast extent of historical mining activity, represented by the surface mining risk plan and Coal Authority High Risk Area, shown as pink and red areas on the Constraints map respectively with black dots representing former coal mining shafts. The mining history is integral to the cultural identity of the area and has shaped the landscape and settlements which remain today. Beneath the surface and not immediately visible is an extensive network of water filled mining tunnels which are currently managed via pumping systems to prevent surface collapse or flooding. There is an opportunity here to use the water within the underground tunnels as a source of geothermal energy which could provide a sustainable energy source for the Zone.

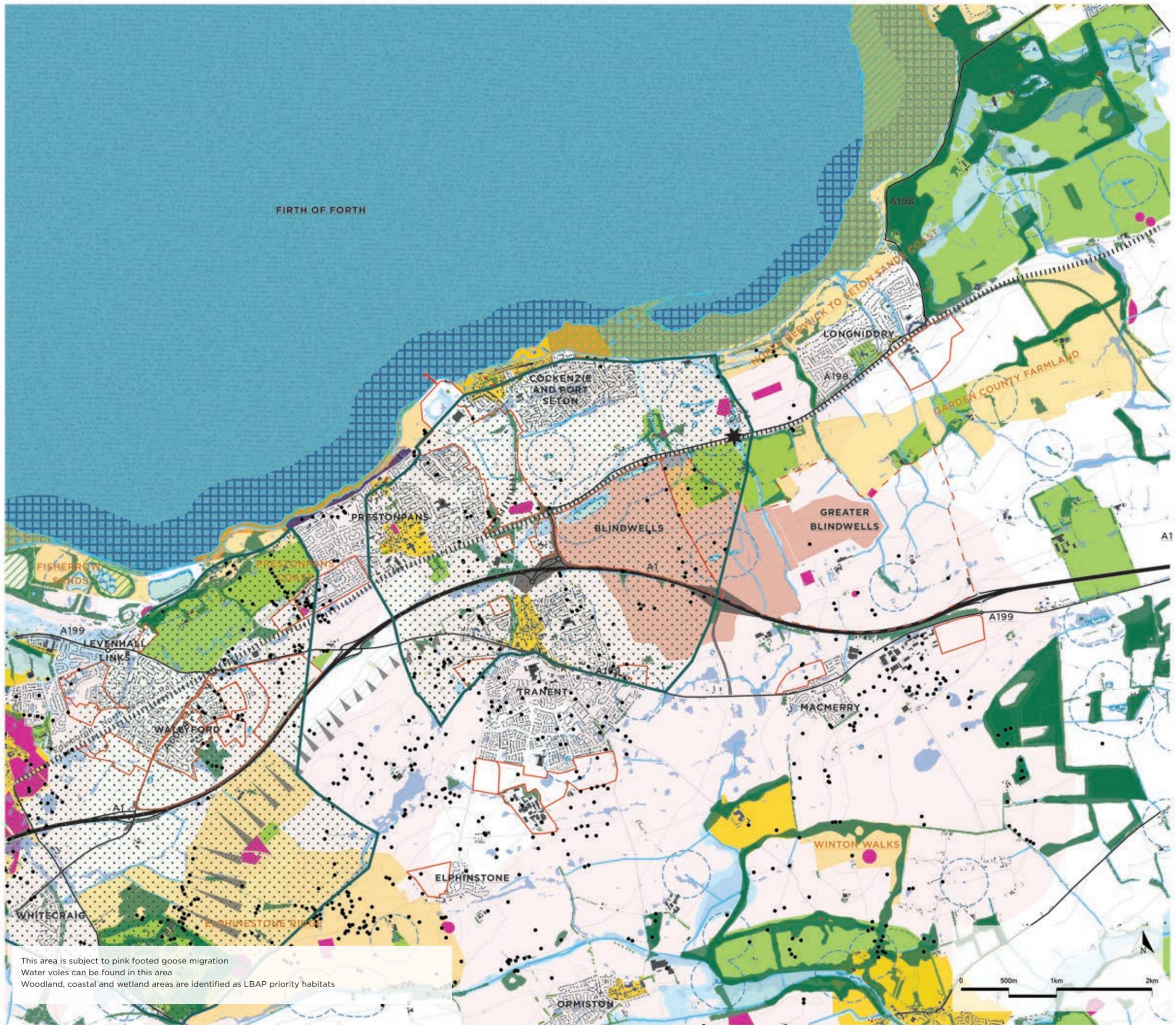
A further constraint is the extent of surface water, river and coastal flooding. Sea level rise is a concern for many coastal areas across Scotland and here potential sea level changes may need to be managed in order to protect the coastal settlements and designated Special Landscape Areas. In addition, watercourses throughout this area could be better managed to prevent river flooding and there is an opportunity to deal with surface water flooding, particularly within settlements via a holistic water management strategy.

The A1 and the Edinburgh to North Berwick rail line represent two major physical constraints within the Zone. They cut through the landscape in an east-west direction and currently restrict north-south movements through the Zone, constituting a physical separation of the coast from the inland areas. They also sever natural north-south drainage systems, which are then engineered in order to compensate. Crossing points are limited and often exist in the form of major infrastructure not conducive to active travel or walking. There is potential to improve this situation by rethinking the number, type and location of crossing points as well as the existing character of the A1 and the rail line. In addition, the rail stations present an opportunity as key access points to the Zone.

The wayleave for the high voltage line which crosses through the zone is a constraint in terms of its visual effect and a potential constraint to connectivity.

The proposals set out within this vision therefore seek to work with the existing constraints, maximising their potential for opportunity wherever possible, and combining these, in a cohesive spatial framework, with the existing assets.

Natura sites are protected by legislation; most plans or projects which could have an adverse effect on the integrity of such a site cannot be approved. The Firth of Forth SPA is such a site. Its interest is in its bird life. The potential pressures on this site include recreational pressure at the coast, loss of habitat and supporting habitat, and changes to water quality. Projects included within this plan will be subject to Habitat Regulations Appraisal and where necessary Appropriate Assessment, and are subject to the result of these assessments



- INFRASTRUCTURE**
 - A Road
 - Railway
 - Transport Safeguard
 - Level Crossing
- NATURE CONSERVATION**
 - SSSI / RAMSAR / SPA / NATURA 2000
 - Geodiversity Site
 - Outer Firth of Forth and St Andrews Bay Complex proposed Marine SPA
- MINING**
 - Coal Authority Development High Risk Area
 - Surface Mining Risk Plan
 - Former Coal Mine Shaft
- CULTURAL AND NATURAL HERITAGE**
 - Special Landscape Area
 - Battlefields
 - Scheduled Monument
 - Cultural Heritage Site
 - Conservation Area
 - Listed Buildings (A,B,C)
 - Gardens and Designed Landscapes including Local Gardens
- WATER**
 - watercourses
 - Extent of surface water flooding
 - Extent of river flooding
 - Pond Buffer
 - Extent of coastal flooding
- WOODLAND**
 - Ancient woodland, broadleaved and Yew habitat woodland core areas and Tree Preservation Orders
 - Tree Preservation order point/area
- DEVELOPMENT**
 - LDP development site
 - LDP safeguarded development site

This area is subject to pink footed goose migration
 Water voles can be found in this area
 Woodland, coastal and wetland areas are identified as LBAP priority habitats

fig. 7: Constraints plan

4.4 Socio-economic profile

4.4.1 Population Structure and Predicted Change

Within East Lothian there is a much higher proportion of younger and older people than the Scottish average, and the number of people aged over 65 is forecast to grow by 72% between 2012 and 2037, with the number of 0-15 year olds predicted to increase by 28% in the same period. Overall, the population is predicted to grow at one of the fastest rates of all 32 local authorities in Scotland and over the last 10 years there has been a steady net migration to the area (Source: “East Lothian by Numbers”, 2016).

This population structure presents challenges and opportunities for the area in the need for provision of suitable jobs, services and amenities to support the changing population. The picture here is somewhat different from the national average and this will necessitate a different approach. A major opportunity is present in the development of Greater Blindwells New Town and the Former Cockenzie Power Station proposals, both of which are situated in the Zone, and may allow for the creation of new jobs, housing, services and leisure facilities to support the specific needs of the growing population.

4.4.2 Labour Market and Commuting Patterns

Currently the general trend shows an inverse relationship between population density and job density. Job density sits at 0.5 - i.e. there are twice as many people of working age as there are available jobs. Populations are concentrated within the settlements of Cockenzie and Port Seton, Prestonpans and Tranent whilst jobs are located within agricultural and industrial areas surrounding these settlements as well as the larger city of Edinburgh to the west (source: ONS. 2017 and BRES ONS 2017). As a result people commute from the area to access the wider range of jobs (often higher value), amenities and services available elsewhere. This is reflected in the commuting patterns within East Lothian whereby there is a net outflow of circa 14,000 workers from the area, primarily to the city of Edinburgh and secondarily to Midlothian (Source: Census, 2011). This manifests in the need for affordable housing, in the capacity in local services and facilities and in transport services and network capacity issues

Within the wider East Lothian county there is a high economic activity rate. Unemployment is in line with the national and UK average at 4% which is slightly lower than Edinburgh but almost twice the rate of neighbouring Midlothian. This is reflected in the high proportion of people qualified at degree level and above. However, this average picture may not be reflected in the Climate Resilience Zone area which contains some of the greatest areas of deprivation within East Lothian and within Scotland. In addition, predictions show that by 2034 the greatest declines will occur within the manufacturing, public administration, agriculture and utility sectors (source: Oxford Economics for Skills Development Scotland), those which typically employ people in the most deprived sectors of society.

4.4.3 Deprivation

The Scottish Indices of Multiple Deprivation (SIMD) (2016) indicate that the western area of East Lothian, where the Climate Resilience Zone is centred, contains five of the most deprived 20% of areas in the whole of Scotland. This western area is the only part of East Lothian which contains SIMD areas falling within the most deprived quintile, with the remainder of the Council area consistently containing some of the least deprived populations in Scotland.

These areas of high deprivation are located within the Climate Resilience Zone boundary and include parts of the settlements of Tranent and Prestonpans, as well as Elphinstone located immediately to the south of the Zone. Moreover, when disaggregating the overall deprivation indicator to its component domains, the areas in Prestonpans are within the 10% most deprived in Scotland with respect to education and housing, Tranent with respect to income and Elphinstone with respect to income and education.

There is a clear west/east split within the East Lothian Council area with respect to levels of deprivation and there is much potential for this picture to change over time with a strategic focus on implementing positive change within the western area which is proportionate to its level of disadvantage.

This approach is known as proportionate universalism (Marmot, 2010) and is promoted by NHS Health Scotland (2014) as a means of reducing inequalities. The most effective interventions are likely to target the domains of education and employment and housing (and indirectly income) for those living in the existing historic settlements within and adjacent to the Climate Resilience Zone area.

4.4.4 Trends

The East Lothian Council document “East Lothian by Numbers” examines population trends up to 2037. The population of over 75s is projected to double, and overall East Lothian will see higher increased population in both younger and older people than the national average.

Within this area, increased employment opportunities in the area, at the new settlement and at Cockenzie, and the offer of a sustainable lifestyle, is likely to retain as well as attract families moving out of the city or looking to relocate back closer to family. The combination of aging population with younger children will mean addressing needs such as:

- Consideration of the needs of dementia in how we design and connect our homes, buildings, places and open spaces;
- Provision for both formal and informal play
- Provision of attractive open spaces which are accessible to people with less mobility;
- Accessibility; encouraging people to walk more with increased and well-maintained path connections;

- Provision of well-overlooked and safe, secure routes to school to avoid the use of the car but allow children to safely make their own way from late primary school age;
- There is a national focus on cycling as alternative travel. There are cycling options for older less able people but equally this won't always be possible or appropriate; other sustainable options need to be well integrated and attractive such as shared electric car ownership or good local bus systems.

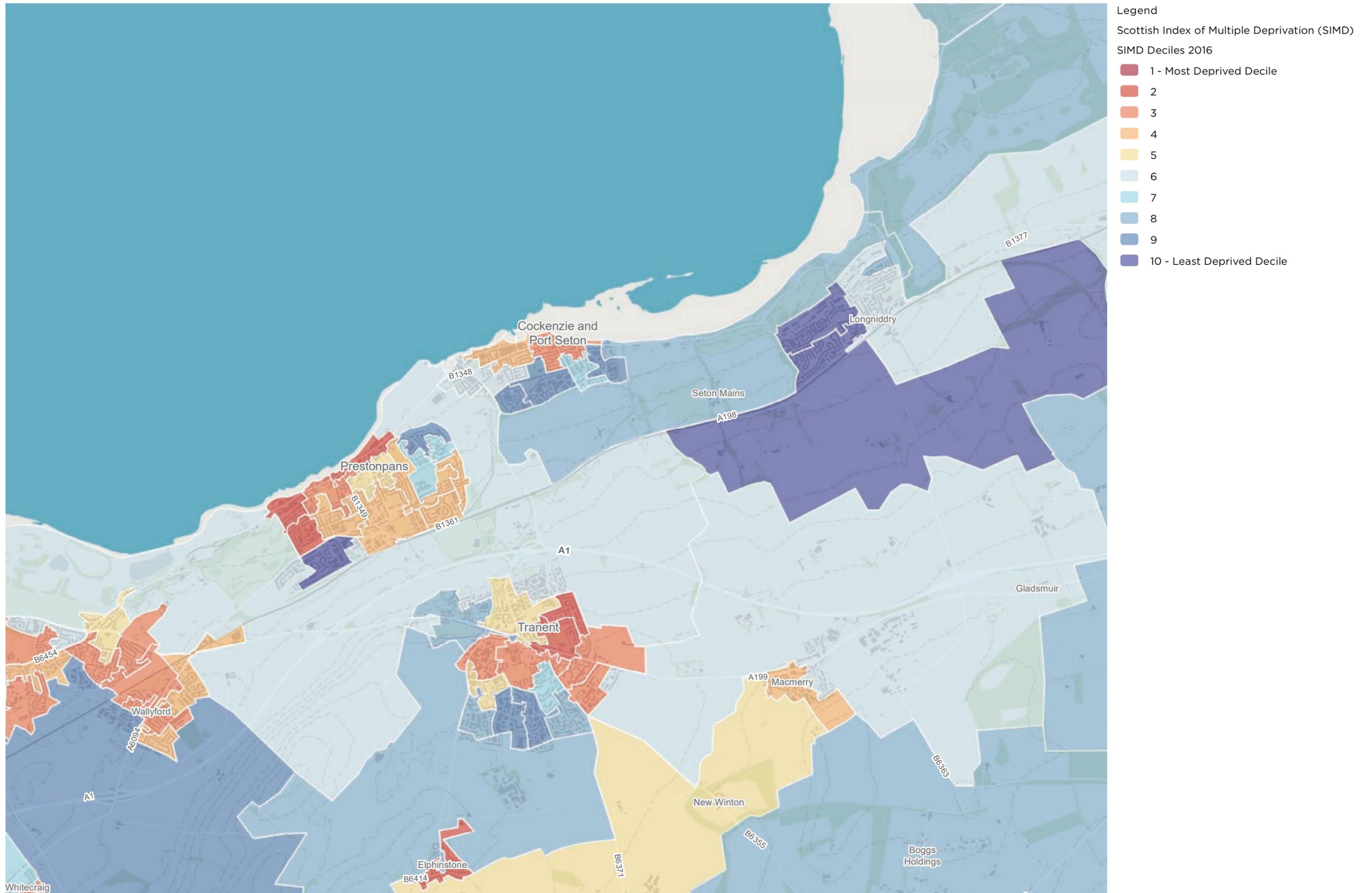


fig. 8: Composite SIMD Plan

4.5 Land ownership

The Local Development Plan (LDP) 2018 identifies a number of allocated and safeguarded sites in and adjacent to the Zone. These are illustrated as red line boundaries and coloured according to development type in the adjacent plan. In addition, an indication of Council owned land is shown as yellow areas.

Council owned land is illustrated in relation to allocated land (further details in section 4.6) on the adjacent plan. Most of the Council owned land is located within settlements whilst the majority of allocated development sites are located on the edges of existing settlements. The Council owns the allocated land in the former Cockenzie Power Station site and this presents an opportunity for appropriate proposals to be undertaken in this area at an early stage in the strategy.

4.6 Current proposals

The Climate Resilience Zone is already undergoing change. Current proposals are set out below:

4.6.1 Allocated Land

Several of the settlements are due for expansion under the allocations within the Local Development Plan. This includes employment and housing allocations around Tranent, housing and employment land around Macmerry, housing and some mixed-use development south of Longniddry, housing west of Prestonpans and mixed-use development including a local centre, employment, a primary school and sports facilities as well as residential development on the Blindwells land.

Cockenzie

The Council owns the brownfield site of the former Cockenzie Power Station and has allocated it for energy use in line with the Scottish Government's National Planning Framework 3. A masterplan was commissioned and was published in 2017. It was subject to significant local consultation, but recent planning decisions and potential future redevelopment ambitions may require this masterplan to be reviewed before it is progressed further:

- Red Rock sought land for a transmission station serving offshore windpower on the Cockenzie site which wasn't part of the original masterplan. This application was called in and approved by the Scottish Government, and the plan may be amended to reflect this call-in planning decision;
- The feasibility of a port/ cruise liner terminal is being investigated here and this too may influence the final strategy.

Greater Blindwells

Blindwells is an allocated mixed-use development site on land which was previously an opencast coal site: 10 ha of employment land and 1,600 houses are proposed. The land is currently being remediated, an ongoing process, and the first releases for housing are emerging. To the east of Blindwells lies safeguarded land which offers the opportunity to create "Greater Blindwells", with capacity for substantially more new homes and other mixed use development, including a new regional town centre, employment land and associated infrastructure and facilities. Some of this land too has been mined in the past and has been restored to Class 2 agricultural land, however the landscape lost intricacy through open cast mining and will require restoration and repair. This will have the density to create a new town centre offering sub regional level facilities. The emerging vision for the new town is that it should be "an influential, healthy, low carbon and innovative place". Managing water, repairing landscape, seeking carbon neutral and low emission energy supply along with options for sustainable travel with employment opportunities are fundamental to those principles and align with the vision for the Climate Resilience Zone.

Prestongrange Museum

A masterplan has been prepared for Prestongrange Museum which will provide significant regeneration for the site and create a new visitor centre, providing a major draw for this area. It is understood that this includes landscape restoration and better linkages with Prestongrange. The plans are undergoing approvals and funding applications so have not been available during the course of this study.

4.6.2 Transportation studies

ELC has commissioned an appraisal of transport in the area which encapsulates the Zone. The East Lothian Access Study is being undertaken using the Scottish Transport Appraisal Guidance (STAG). The Case for Change stage has been completed. Transport problems and opportunities in the study area have been researched, Transport Planning Objectives defined, and a long list of potential interventions identified for appraisal against the Objectives. Interventions cover all modes but there is emphasis on sustainable choices focussed around rail improvements and active travel. The appraisal will commence shortly.

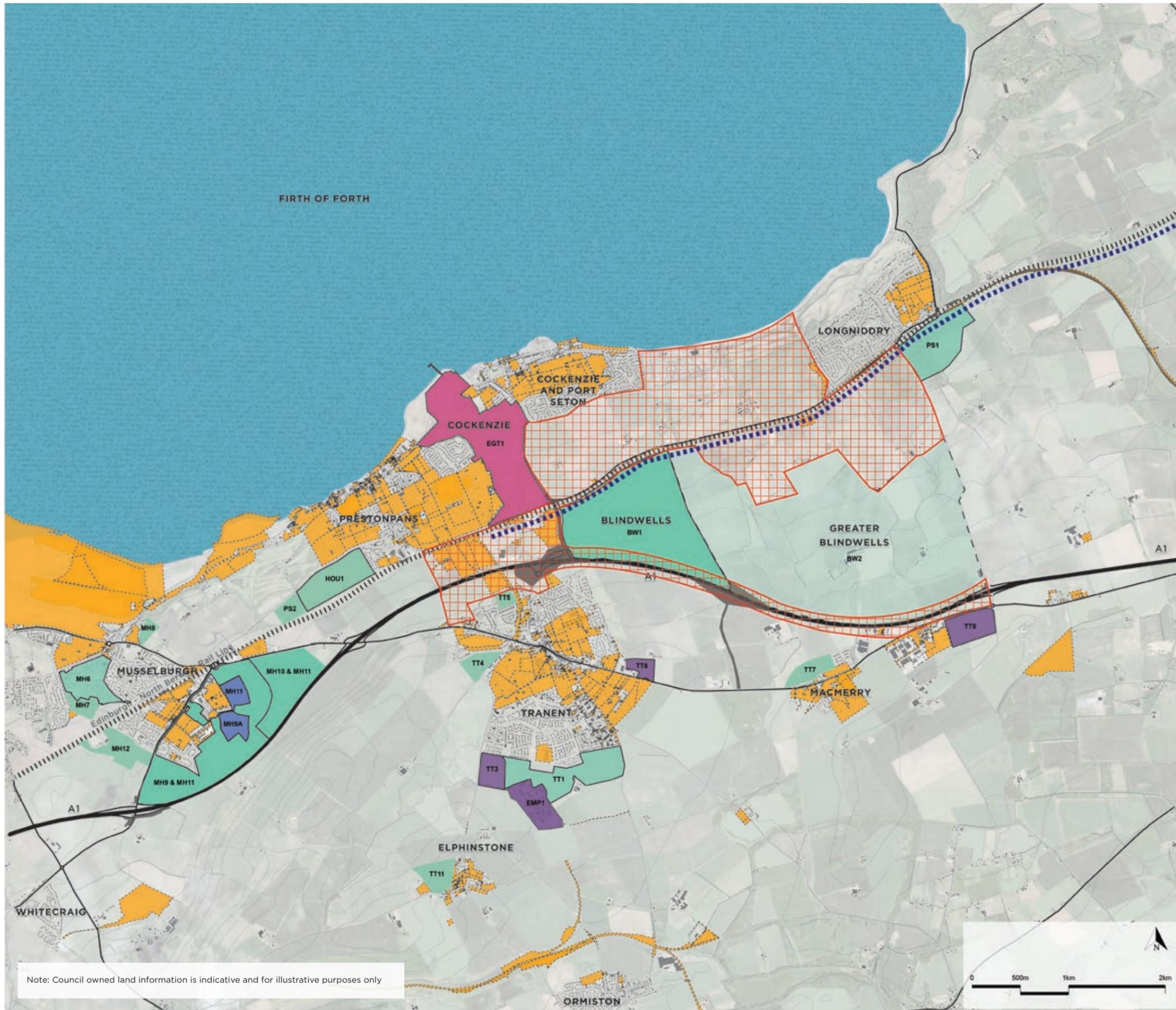
In parallel with this work, ELC continues to develop its Active Travel proposals and, in particular, its plans for the Newcraighall to Dunbar Segregated Active Travel Corridor (SATC). The SATC was proposed through the Local Development Plan (LDP). An indicative route has been developed through a Feasibility Study with the route selection focused on making best use of existing cycle routes, connections to local railway stations and minimising land take by following existing land use boundaries or corridors such as that formed by the East Coast Main Line (ECML).

The proposed route of the SATC within the study area runs south of the ECML and does not cross it at any point although there are four crossings west of the study area in Musselburgh. The route then crosses the A1 west of Bankton Junction at Meadowmill. The proposal is to use the path network around Meadowmill Sports Centre which would be upgraded. The crossing of the A1 is via an existing pedestrian underbridge.

Transport Scotland is currently exploring the potential for four tracking of the ECML links between north east England and the east of Scotland. This is considering the feasibility of new track infrastructure in East Lothian which could be either proximate to the existing ECML or non-proximate following an alternative alignment. Recommendations from this work, and from other studies being undertaken by Network Rail into the capacity of the east of Edinburgh rail network, are expected in Q1 2020 and will be considered by ELC in the next stages of the STAG project described above. Completing the STAG project and identifying the interventions required to meet the objectives will provide a firm and consistent basis for the development of the local transport proposals in the Zone.

All of the above work will also be fed into Transport Scotland's Strategic Transport Projects Review (STPR2) which is also being undertaken at this time.

Such strategic infrastructure interventions could also provide the basis to deliver synergistic benefits, such as improving water management and for delivering active travel and energy or heat networks over or under strategic transport corridors on the Zone



- Council Land Ownership
- LDP Employment Proposals
- LDP Housing and Mixed Use Proposals
- LDP Education Proposals
- EGT1 allocation as per adopted East Lothian Local Development Plan
- Transport safeguards
- LDP safeguarded housing/mixed use site
- Climate Change Park Core Area

- East Coast Railway Line
- Potential ECML 4 track railway
- A Road
- Buildings

Note: Council owned land information is indicative and for illustrative purposes only

fig. 9: Land ownership and allocated land

5. The Climate Resilience Zone Strategy

5.1 The Strategic Plan

The Strategic Plan illustrates the range of projects that has emerged from the baseline analysis work and the discussions with many stakeholders through the formulation of this strategy.

The proposals shown are supported by other softer strategies which can't be graphically depicted but which are described within the text supporting each of the strategies below. These are the projects which collectively will achieve the vision and meet the objectives for a Climate Resilience Zone.

Three arrival gateways are proposed, which each connect with existing wider transport rail and bus systems. The gateways would each encompass cycle facilities including safe storage and hire, car club pick up and local bus and bus/taxi connections. These would be busy, vibrant places with opportunities for new small businesses such as cycle hire and maintenance, and cafes. These hubs could also provide the basis of physical infrastructure to support any future programme or proposals for Mobility as a Service (MaaS) across a wider regional area.

A central arrival hub at a new Greater Blindwells station is a longer-term ambition; this is most likely to be associated with possible railway upgrade work and will act as a major interchange supporting the new settlement, business and new industry at Cockenzie as well as local transport and Climate Resilience Zone activity.

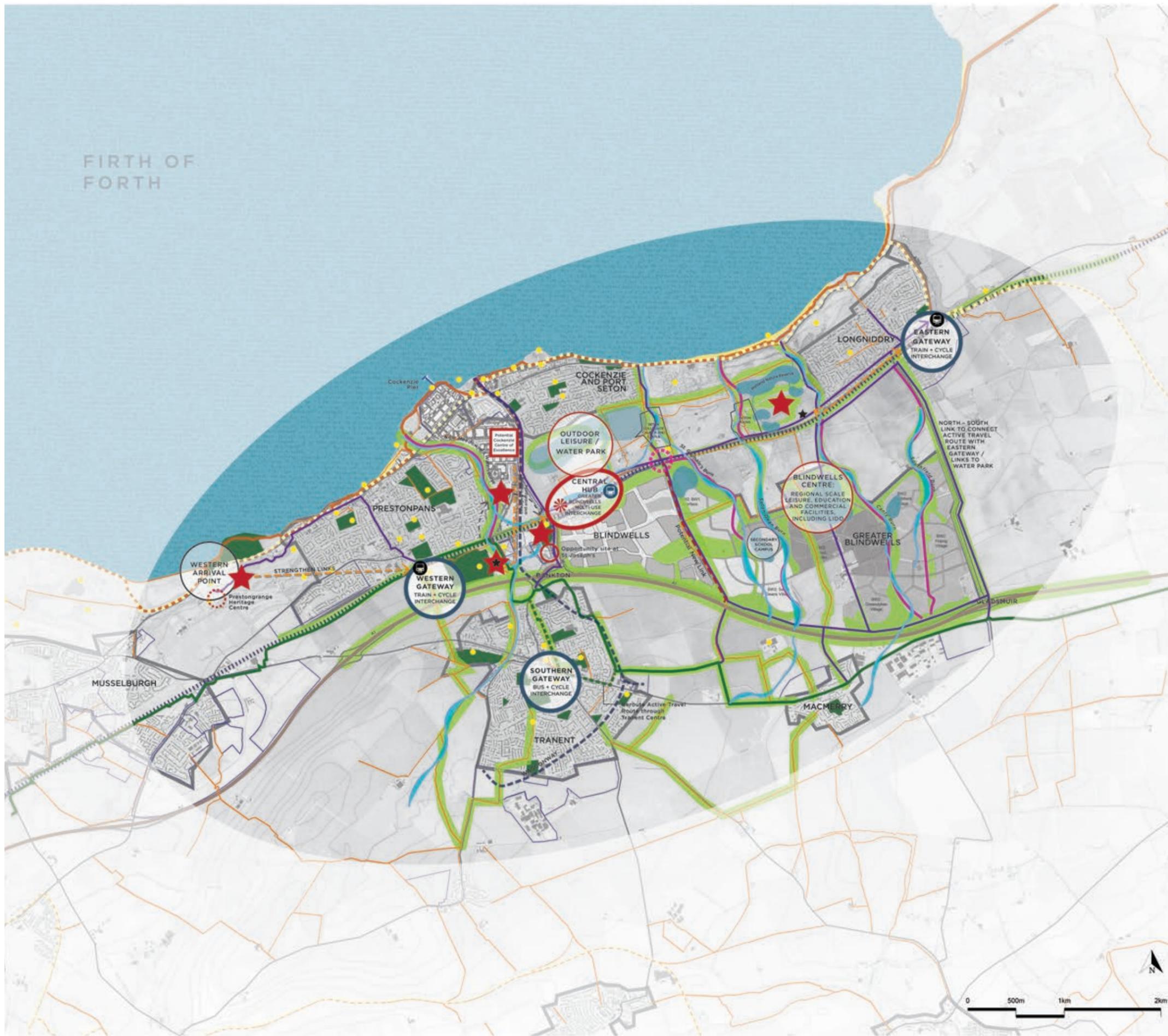
Strategies could include integrated ticketing for arrival from Edinburgh or Newcastle with incentives to then connect with sustainable transport solutions to get around.

A western arrival point at the new Prestongrange facility will accommodate car access to the zone, being on the coast road, as well as Climate Resilience Zone arrival for John Muir Way users. The John Muir Way is due for investment to increase promotion of this route as a good alternative to other, more heavily used, long distance paths.

There is the potential for a National Climate Resilience Centre to form the front welcoming face; this would be signature architecture offering the best example in sustainable design and construction and providing a visitor as well as an education resource. Education in renewable energy (geothermal, hydro, solar and heat pumps), and encouraging science-based knowledge and application of technologies, will be an important part of the building function.

Other main interventions include possible training centres; one for construction skills within Cockenzie, and one for hospitality at all levels and in all sectors based within a 5-star training hotel, models for which exist already in Europe. Including a kitchen garden extends training opportunities further and links to the history of East Lothian and sustainable targets for increased local growing and a reduction in food miles.

The management of water underpins this strategy; controlling inland water is the area of most need here and using control within a variety of measures -energy supply, a wetland nature Park, an outdoor inland water sports centre and as green corridor encompassing active travel will make these control measures work harder and successfully meet the objectives for creating a Climate Resilience Zone.



- CENTRAL HUB**
 Proposed multi-use interchange
 All transport modes: Main arrival point
 New train station located along upgraded National Rail Line
 Possibility of infrastructure changes connecting to the Bankton adit
 Reconsideration of the A198 corridor, with active travel and planting opportunities
- WESTERN GATEWAY**
 Including active travel and public transport hub
- SOUTHERN GATEWAY**
 Bus/cycle/pedestrian connections
 (Relocate the Active Travel Route through Tranent)
 Cycle hire station and Active Travel Bike Park allowing pick-up to buses offering safe, secure storage allowing for enhanced e-bike facilities-coffee, maintenance, etc
- EASTERN GATEWAY**
 Including active travel and public transport hub
- WESTERN ARRIVAL POINT**
 Important arrival point on the coastal tourist route and vis the John Muir Way, linked with regenerated Prestongrange Heritage Centre
- OUTDOOR LEISURE / WATER PARK**
 (Indicative Location) Subject to further study
 Including: Lido; kayak/sailing; spa; and use of geothermal to heat water
- GREATER BLINDWELLS**
 Manage water through Blindwells
 Open up watercourses
 Differing character and local ecosystems
- ★ **Potential geothermal 'attractor'/opportunity site**
 Potential site for 'attractor' harnessing the potential source of geothermal energy.
- 🚉 Existing railway station
 - 🚉 Potential new railway station
 - 🌿 Proposed blue-green infrastructure
 - 💧 Proposed waterbodies
 - 🌊 Proposed renaturalised water courses
 - 🌳 Council owned green space
 - 🚶 Path network (existing and currently proposed)
 - 🚲 Proposed additional paths with cycle infrastructure
 - 🛣️ National Cycle Route
 - 🚶 Historic Waggonway
 - 🚶 Proposed Active Travel Corridor
 - 🚶 Proposed realigned Active Travel section
 - 🚶 Proposed leisure routes along realigned waterways
 - 🛣️ John Muir Way
 - 🚶 Railway line
 - 🛣️ Strategic Road Network
 - 🛣️ Proposed Road Link
 - ★ Other geothermal opportunities
 - 📍 Existing assets / cultural & leisure destinations
 - 🏫 St Joseph's School
Owned by the council: opportunity site
 - 🏠 Centre of Excellence
Training School and exemplar development in modular manufacture and construction
 - 📍 LDP Allocations
 - 🌸 Battle of Prestonpans Visitor Centre

fig. 10: Strategic Plan

5.2 Theme 1: Access and Movement

5.2.1 Vision and Approach

Delivering a range of active and sustainable travel proposals to meet the requirements of a wide range of potential users and, where possible, combined with links to the rail and bus networks to facilitate longer distance access, is at the heart of the transport proposals which emerge from the study. This should increase the north-south connectivity of the area and offer choice for both work and leisure which are alternatives to the private car being the default. A transport strategy using the National Transport Strategy's recently published Transport Hierarchy walking, cycling, public transport and lastly the car will be used.

5.2.2 Strategy

Paths for All

Outdoor green space or accessible countryside should be within easy walking distance of every home. All abilities need to be considered within the pathway network. They should be suitable for aging, less able demographics, and with safe routes to school for young children, to encourage walking and cycling. Much play for children takes place when they are travelling between locations. The movement network should be designed to give a variety of informal opportunities for play where new routes should be of multiple benefit with points of interest and opportunities for relaxation, play and education along the way. Paths should have the necessary standards of maintenance and consideration of access needs, for example, lesser gradients on slopes, and seating at regular intervals. The wider area would benefit from tracks suitable for walking, cycling and running with measured loops of around 5km.

Active Travel Routes

An integrated network of paths and cycleways should be created which encourage active travel and support a wide range of leisure activities. These routes should be fully connected to existing and proposed cultural, heritage and leisure assets as well as existing and new settlements. An extensive network exists already; it's a matter of connecting up. The network should be designed to meet the wide range of needs and abilities of different user groups including commuters, residents and visitors from neighbouring towns/cities or further afield and should include:

- **Commuter routes** - fully segregated routes connecting settlements and providing direct routes to places of work/transport hubs. This is initially to follow the route of the proposed Segregated Active Travel Corridor but re-routed through Tranent and further integrated with a wider Active Travel Network developed from the current East Lothian network;
- **Leisure routes** - fully segregated routes linking cultural and leisure attractions as well as linking inland settlements (Tranent, Blindwells, Macmerry) and the coast to the coastal John Muir Way and National Cycle Route 76. Leisure routes will be designed to create interest, support biodiversity, and encourage playfulness;

- **Sporting routes** - clearly marked long distance routes (e.g. 50km, 80km, 100km) which may be shared with cars but must have a suitable high-quality signing and surfacing and space for individual or groups of road cyclists;
- **Community routes** - improving active travel routes within existing communities, and linking these to the park, particularly between relevant schools and the water park, visitor centres and other relevant attractions.

Overall, the aim is to provide for the fullest range of cyclists possible, embedding cycling culture amongst all ages and abilities. Incorporating sports cycling into the mix recognises an existing trend in East Lothian's roads being used for long distance cycling and would give another dimension to the Park's attraction – i.e. roads within the Park should be seen as different, more cycle friendly, than other roads in East Lothian and beyond.

There are many rural, high-speed, roads in East Lothian which are attractive to experienced cyclists, but which could be adapted for use by more cyclists without significant impact on the capacity available for other road users. Roads, such as the A198, could be identified as 'cycle friendly' as part of the sports routes network with signage and markings that change the impression of these roads for vehicle drivers, perhaps also incorporating a degree of segregation. It is likely that health & wellbeing benefits, as well as road safety benefits, would result as the overall look and feel of the Park road network was one of 'cyclists first'.

Gateway Hubs

Gateway hubs are proposed at Prestonpans and Longniddry Stations, the proposed Greater Blindwells Station (see below) and within the centre of Tranent. This creates arrival points to the Park area via the existing public transport network: train stations at Longniddry and Prestonpans and the Lothian Buses/ East Coast Bus Network which passes through Tranent and serves Prestonpans and coastal towns.

These are seen as well-resourced facilities which offer opportunities for sustainable inward and outward travelling and opportunities to link to existing facilities, such as sport centres, should be explored. Safe, dry, storage for bikes of all types with showers for those commuting or travelling and locker facilities. Equally important are facilities for those making onward journeys through other means especially bus, which could include electric car share hubs, local circular bus networks or shared minibus /taxi systems as modal shift begins to happen and increased facilities and footfall within the Zone area create demand. This will mean decent shelters with seating and public toilets. Other opportunities at these hubs may include bike maintenance, bike sales, cafés, workstations. These hubs could support any future programme or proposals for Mobility as a Service (MaaS) across a wider regional area.

The Gateway Hubs would be branded as being part of the Park with smart and integrated ticketing systems allowing good onward travel via a variety of options suitable for all ages and abilities. Electric bikes are essential to the

future of increased active travel. Studies show that with electric, people cycle longer distances and in more inclement weather than traditional cyclists. People who are older, or haven't cycled for some time, are more likely to take it up. In Holland last year, ebike sales outstripped traditional bikes. Electric bikes are expensive, however, and come with integrated features. Secure storage is essential if these cyclists are to be encouraged to use this as a regular way of getting around.

The Bus Network

East Lothian is currently the only local authority area in Scotland where bus patronage is increasing. Bus networks and bus connectivity are a key part of modal shift. Bus connections to Tranent and Prestonpans from Edinburgh, in particular, are good, and the strategy seeks to encourage travel by bus through improvements to infrastructure including for the new settlement.

The Rail Network

The East Lothian Access Study Case for Change has identified the requirement to link Blindwells to the rail network if it is to be a sustainable place that does not create major detrimental impacts on the road network.

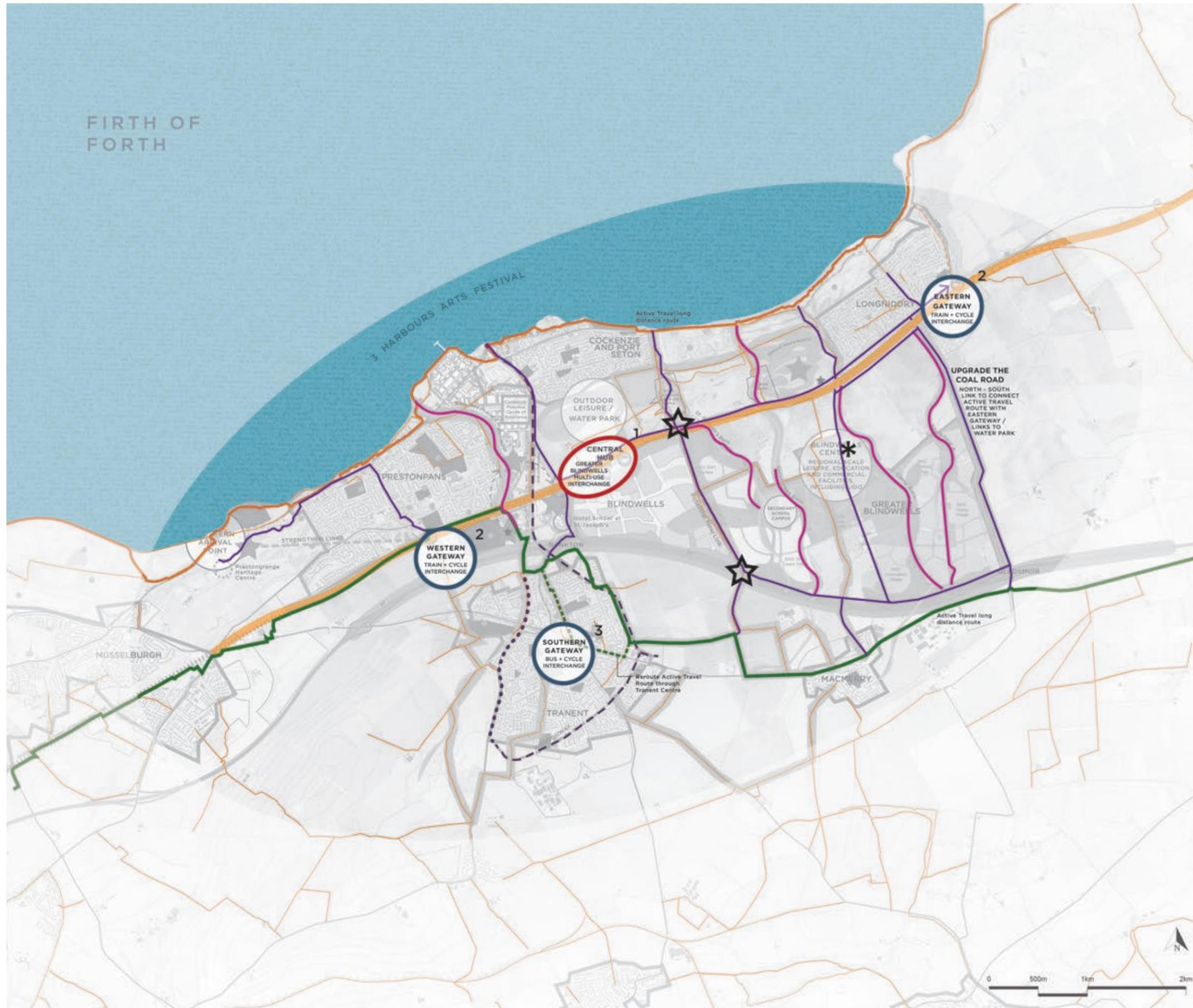
A range of possible rail connection options has been developed and initially assessed at a high level from those with little or no impact on existing services to those which will impact significantly upon existing services and timetables. The conclusions of the initial option sifting suggest that the resolution of wider rail network enhancement proposals is required at national level before a definitive proposal for Blindwells can be confirmed.

One of the difficulties faced by East Lothian is the difference in average speeds between fast long-distance passenger trains, with few or no stops, and local passenger services that stop frequently. These speed differentials are some of the most critical factors in timetabling congested routes, a problem which currently affects the line between Edinburgh Waverley and Drem.

To address this problem ELC put forward a proposal in 2016 in response to Network Rail's Scotland Route Study Consultation to raise the concept of four tracking the ECML from Prestonpans to Drem (rather than between Wallyford and Prestonpans as originally proposed). The responses to the Route Study and the subsequent rail industry publications have supported that four-tracking option although there is currently no commitment to implementing it. Four-tracking would facilitate the separation of local and longer distance train paths and create the possibility to introduce a new station at Blindwells without any impact on provision of existing stations.

Decisions on future rail capacity enhancement are critical to delivering a new station at Greater Blindwells and without one, rail access to the new settlement will have to be accommodated via already highly used stations at Prestonpans or Longniddry.

If no strategic rail improvement is forthcoming, consideration will have to be given to how Greater Blindwells links to the existing rail stations through, for example, dedicated bus lanes and off-road cycle routes.



Indicative path network subject to further detailed study:

- Leisure routes along regenerated water courses
- John Muir Way; increased investment will increase visitor numbers
- Proposed East Lothian Segregated Active Travel Corridor (SATC) (including proposed rerouted section through Tranent).
- Existing core path routes. Further feasibility required to expand connections.
- Proposed new active travel sections connecting the proposed SATC with core facilities and public transport
- - - - Historic waggonway (and proposed extension)
- Potential upgrade of the East Coast Railway Drem to Musselburgh
- 1** Proposed new railway station serving both Cockenzie and Greater Blindwells. Multi-use interchange with pedestrian access over the railway line
- 2** New gateways based around existing railway stations offering cycle hubs and facilities; integrated public transport
- 3** Bus connections; same facilities as the railway gateways. Active travel corridor route re-routed into Tranent
- ☆ New link road over the A198 and railway negates the current level crossing; allows for enhanced north-south active travel connections
- ☆ New all purpose interchange at Adniston - subject to further study and underpass
- * Active travel centre within Greater Blindwells new town

fig. 11: Theme 1: Access and Movement Strategy

North-south connectivity

Opportunities to improve north south connectivity over the A1 and ECML shall be explored as part of wider transport appraisal work being carried out at present and other masterplans that could be developed for the area. Potential connectivity improvements should seek to deliver all-purpose connections as well as segregated routes. The strategies seek to improve north-south connectivity through the following:

- A new route from the SATC to Longniddry Station along the Coal Road;
- A new connection from the A1 to the A198 which accommodates sustainable travel options and replaces the level crossing;
- Options for local circular bus networks or shared minibus /taxi systems that will connect the Gateway Hubs and local facilities together, perhaps operating as part of a MaaS across a wider regional area;
- Further crossing opportunities need to be explored as part of the network rail upgrade.

Such interventions could also provide the basis to deliver synergistic benefits, such as improving water management and for delivering active travel and energy or heat networks over or under strategic transport corridors on the Zone.

5.2.3 Meeting the Vision Objectives

The strategies set out here have been assessed against the overarching objectives for addressing climate change, improving health and wellbeing and sustainable placemaking as follows:

Climate Change

Adaptation

- Provide paths which are not in areas likely to flood.
- Plant and design to provide shade and shelter along walking routes and at Gateways.
- Promotion of the aims of the Park and eventual behaviour change supporting the use of active travel and sustainable public transport options over the private car. Creation of efficient and integrated transport systems and high quality integrated cycle and footpath networks as an alternative means of getting around for all abilities.

Mitigation

- Change behaviour patterns through creating alternative and low or zero carbon first choices to using the car.
- Increased use of efficient transport systems reduces current emissions levels.
- Promotion of the aims of the Park and eventual behaviour change supporting the use of active travel and sustainable public transport options over the private car.



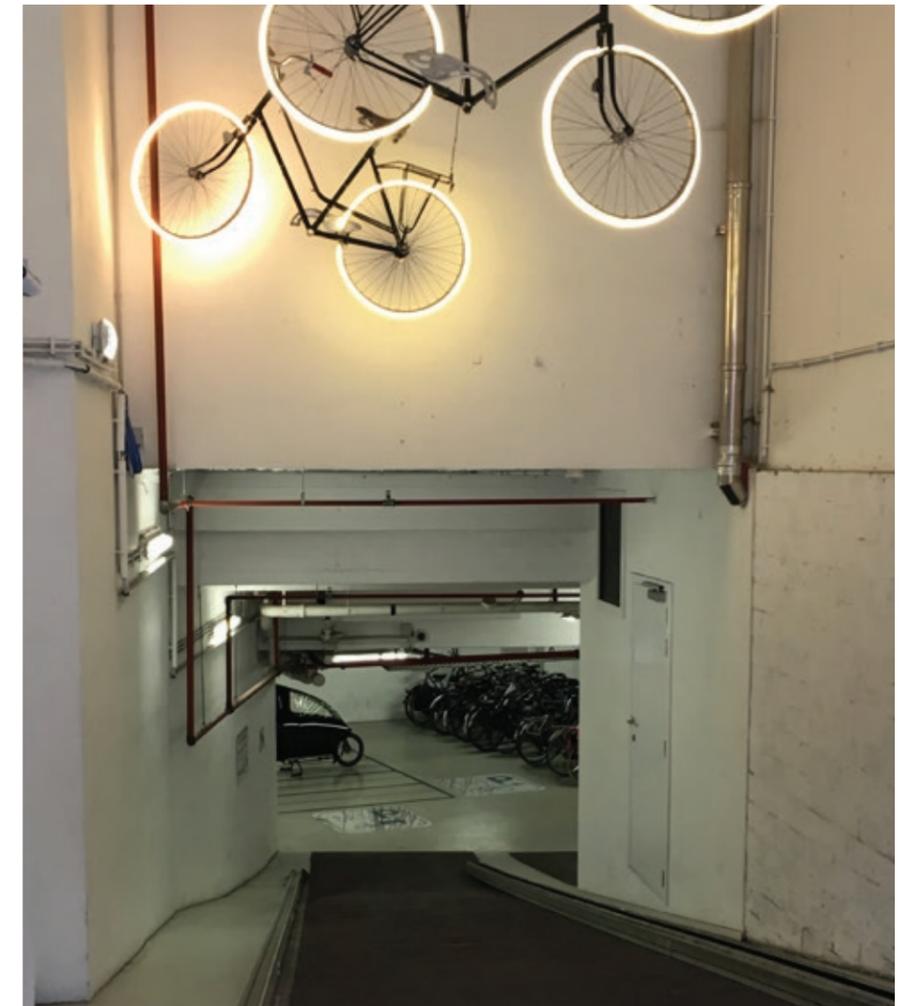
Joy Rides, Edinburgh / cycling for all



Prestonpans Railway Station



Just Eat Bikes in Edinburgh



Access to city centre bike store with runners (Bruges, Belgium)

- Creation of efficient and integrated transport systems and high-quality integrated cycle and footpath networks as an alternative means of getting around for all abilities.

Sequestration

- Opportunities for planting along new active travel routes.

Health and Wellbeing

- Improved air quality;
- Improvement on road safety and accidents;
- Higher levels of walking and moving reduces obesity, BMI and levels of Type 2 diabetes;
- More social opportunities for people to meet; reduces social isolation
- Increased physical activity improves mental health.

Placemaking

- Taking people out of cars will create more use of the street; this makes the street safer and more pleasant and increased footfall is better for supporting local businesses when properly supported by the right infrastructure;
- A proper sustainable travel network will make it easy to get around with additional connections not achievable through putting car first;
- The creation of well-located and resourced travel hubs gives opportunities for new businesses and helps with place identity and local vibrancy.



Segregated cycle corridor example



Alternative energy buses: Lothian Buses electric fleet



Cycling Without Age (copyright: Power to the Pedal)

5.3 Theme 2: Managing Water

5.3.1 Vision and Approach

An ambitious opportunity exists to create a sub-regional water management strategy, including regional SuDS, linked by new and re-meandered existing watercourses creating a healthy water environment and well-functioning river basin to support ecosystems and improve resilience to climate change.

Drainage and surface water management are fundamental considerations for the Climate Resilience Zone. This is because the existing topography drives the conveyance of water. Drainage is also the lowest point within a development and therefore one of the first parts of construction. It makes sense therefore to consider drainage and surface water management prior to the overall layout of the Park.

A water sensitive approach for the Park and future developments takes this into consideration by using the existing topography and environment to shape how water will be conveyed and used.

A blue green network allows for water to be routed in a safe and appropriate manner, reconnecting drainage and flow paths, which have been severed by linear infrastructure, such that when large storm events occur there is no risk to sensitive areas, including residences and other essential infrastructure. In addition, the blue green network should provide pleasing aesthetics and amenity as part of a community benefit encouraging an active and healthy lifestyle for local and the wider community.

The area within which the Climate Resilience Zone sits has a rich coal mining history which has resulted in the requirement for control of mine water by pumping, to control flood risk, and provide treatment prior to discharge to the water environment. An opportunity exists to harness the geothermal opportunities of the mine water and enhance flows within new and existing watercourses providing improvements in habitat and biodiversity.

5.3.2 Strategy

Flood Risk Management

SEPA flood maps have been reviewed and indicate fluvial flooding in relation to Harry's Burn at The Heugh, Tranent, St Germain's Burn and Seton Dean Burn. Pluvial flooding is also indicated in the low-lying north-west corner of the site.

ELC has stated a desire for a holistic approach to flood risk management and therefore providing an integrated hydraulic model of the wider area of the Park to include all four watercourses that flow through the site, their entire catchments including headwaters and tributaries and to the coastline.

In addition, SEPA has stated that medium to long term flow monitoring of the existing watercourses would be prudent to gather an understanding of the hydrology of the area and to provide confidence in any of the modelling outputs. In the past SEPA has been critical about sites where this has not been done.

Therefore, to help inform the Action Plan for the Climate Resilience Zone the robust approach will be to undertake the flow monitoring and complete the

holistic baseline model, to fully understand the risk and identify mitigation options to be implemented to manage flood risk and enhance the water environment.

The complexity of local hydrogeology and the interrelationship between mine waters and future development needs to be understood to provide appropriate management of risk and to allow the use of mine water for geothermal opportunities, daylighting of the Bankton Adit culvert and watercourse improvements to be explored further.

The East Lothian coastline suffers from varying degrees of coastal flooding and cognisance of this together with predicted sea level rise will need to be considered within the Action Plan for the Climate Resilience Zone.

Surface Water Management Plans

The risk of surface water flooding may increase in the future as a result of climate change, population growth and urban expansion resulting from loss of permeable surfaces in urban areas. Management of surface water flooding and urban drainage cannot rely on continual upgrading of existing sewerage infrastructure, as creating ever larger piped networks is uneconomic, impractical, unsustainable and not adaptable to climate change.

An integrated approach to drainage promoting sustainable solutions should be deployed. Surface water should be managed before it enters the sewer system or receiving watercourse, by allowing for increased capture and reuse of water, maximising the benefits and minimising the negative impacts of surface water runoff from developed areas. This would be managed through various SuDS features including above ground storage systems and disconnection of surface water from existing combined sewerage systems.

The key principles of this approach will be to:

- Maximise the use of new permeable surfaces;
- Manage surface water runoff as close to the source as possible;
- Replace impermeable surfaces with permeable surfaces where possible;
- Minimise underground drainage and exploit above ground solutions;
- Design for exceedance ensuring flood plains are maintained and new development has flow paths.

Surface water management plans for each of the settlements in the vicinity of the Climate Resilience Zone will provide sufficient information to support the development of a strategic approach to the management of surface water flood risk ensuring the most economical, socially and environmentally beneficial measures are identified and implemented.

Partnership Approach

Due to the scale of the Climate Resilience Zone and wider development area it is critical to ensure the correct parties are communicating with each other and an open a transparent approach is maintained. Collaboration and agreement are essential to take forward the water sensitive approach.

A holistic approach should ensure integration with other settlements and development opportunities, which includes Blindwells 1 (Hargreaves development), Greater Blindwells site and the emerging masterplan for the former Cockenzie Power Station site.

Benefits and Barriers

The importance of multiple benefits and multi-functionality cannot be overstated and can encourage financial savings. Our designs should strive to achieve the following benefits:

- Addresses climate change;
- Economic;
- Attractive place-making;
- Environmental/ sustainable/ carbon efficiency;
- Biodiversity creation;
- Community and social integration, and
- Health, well-being and improved quality of life.

It would be prudent to overcome and discourage a conventional approach to design which often includes the following:

- Creation of barriers to water;
- Perception that water is high risk;
- Conventional drainage;
- End of pipe Sustainable Urban Drainage Systems (SuDS);
- Lack of vision, and
- Single function.

Geothermal

The deeper you drill into the Earth, the warmer it gets, termed by geologists as the geothermal gradient. But extracting geothermal energy from the warmer depths is only possible if water is present and able to flow from the rock. Heat and water are therefore essential for extracting this form of energy.

The abandoned coal mines within East Lothian, and in particular in the vicinity of the Climate Resilience Zone, provide an exciting opportunity to exploit geothermal energy potential, providing heat and energy storage possibilities for existing local settlements, addressing issues such as fuel poverty, and supply to new developments through the use of district heating.

Mine water district heating schemes have already been successfully developed at several locations. At Heerlen in the Netherlands, a scheme has been operating since 2008, supplying heat to 500,000m² of commercial and residential buildings. Closer to home, open loop ground source heat schemes have been developed for small residential developments serving 16 dwellings in Shettleston, Glasgow and 18 dwellings in Lumphinnans, Fife.

Our aim is to exploit this potential, closely working with The Coal Authority, to provide geothermal heating to a new Lido proposed within the Climate Resilience Zone, explore opportunities of what geothermal can bring to horticulture, and provide heating for existing and proposed settlements in the area.

Heat from Sewage

Sewage Heat Recovery Systems are supported by the Scottish Government. This system is already in place at the Scottish Borders College; liquid and solid waste is separated, solids returned to the sewer and the liquid is then transferred into a closed loop system which a heat pump then heats and transfers to the customer as hot water. Being in a closed loop system means the dirty water never touches the clean water. This could be considered in addressing the combined sewer system which exists along this coastline and would complement the work being done to limit surface water entering the system.

Micro hydro

Micro hydro is a form of hydro-electric power that typically produces from 5kW to 100kW of electricity using the natural flow of water and can provide power to an isolated building, home or small community. A feasibility study, as part of the holistic sub-regional water management strategy will explore the most appropriate locations for micro hydro, either in existing watercourses or outfall from pumped mine water.

Water Park

Formation of an outdoor water Park could provide substantial recreational facilities for boating (rowing, kayaking) as well as the potential for cold water swimming. This facility could be linked to the proposed active travel network and could cater for triathlon and other short and long-distance running, swimming and cycling events, providing a facility with national significance.

The location and size of such a facility needs to be understood in the context of other facilities within the East Lothian area such as the Musselburgh Lagoons and Fox Lake adventures located between East Linton and Dunbar, together with consideration of funding opportunities.

Lido

Lido's in Port Seton, Dunbar and North Berwick saw their popularity decline in the mid 1980's and late 1990's respectively, but a new commercial opportunity exists to re-introduce such a leisure opportunity corresponding to the rise in popularity of outdoor swimming. This would harness geothermal heating to provide a pleasant leisure facility catering for locals and visitors to the area.

Wetland/ Nature Reserve

Creation of wetland habitat areas in the form of a new nature reserve could provide significant benefits in amenity and biodiversity as well as opportunities

for flood risk and surface water management and provides sequestration of carbon to help address climate change. Linked to the proposed active travel network this feature could provide access for the local community and visitors to good quality nature bringing considerable benefits to health and well-being, recreation and educational opportunities.

A Green space management plan should be developed for this nature reserve and should consider the importance of the site and why it is chosen to be a local Nature, biodiversity / conservation management, environmental education, community participation and access and visitor management.

Blue-Green Infrastructure/ Drainage and SuDS

In addition to the design guidance outlined in The SuDS Manual (published by CIRIA) we need to recognise the legacy of the open cast mine workings and groundwater control regime by preventing infiltration which could risk increased pollution and flood risk. This would be managed by providing impermeable liners to SuDS measures until such time as the hydrogeology is better understood or confirmed otherwise.

As part of the development of the Climate Resilience Zone, design considerations should encourage the conveyance of flow using pipe-free networks. The benefits of pipe-free networks include provision of increased capacity of flow compared to the cost of equivalent piped drainage, which in turn leads to savings in construction costs. The open nature of a pipe-free network becomes by its nature part of the blue green infrastructure providing habitat and increasing biodiversity. In addition, where failure occurs either through cross connections or hydraulic weakness, this becomes immediately apparent and will be easier to remedy than a piped network.

A well-connected green network of pipe-free SuDS needs to be able to reach beyond the confines of the immediate vicinity and needs therefore to have adequate permeability to allow species migration to the wider reaches of East Lothian including the coastline. The configuration and layout of pipe-free networks can easily lend itself to help support protected species such as water vole and great crested newts even within an urban setting. East Lothian Council Local Development Plan Green Network Strategy, Green Network Task 5, seeks opportunities including water vole habitat improvement by creating field edge habitats such as grass margins along water courses and promotion of great crested newt conservation through habitat creation and improvement through pond creation in suitable areas.

Watercourse Enhancement

The watercourses which presently flow through the proposed Climate Resilience Zone area have discrete purposes in providing land and surface water drainage to the surrounding properties and agricultural land within curtilage and conveyance for surface water flow from upstream settlements south of the A1 through the site to the coast.

Each of the watercourses could be described as very linear, engineered and canalised, to accommodate agricultural land use, resulting in a potential adverse ecological impact. The proposals give opportunities for restoration

of these water ways to benefit active travel, restoration of natural form and de-culverting.

The proposed Climate Resilience Zone together with future development proposals should consider how these watercourses can be enhanced and integrated into the development by re-meandering to create habitat and biodiversity, re-profiled to assist with flooding issues and provide an adaptable natural and resilient environment for plants and wildlife.

Opening the Bankton adit culvert

A further opportunity may exist to daylight, and reinstate natural form and function, the Bankton adit culvert which routes around the eastern margins of Prestonpans from the playing fields located between the A1 and B1361 east of Bankton House to the coast, subject to assessment on the Firth of Forth SPA and surrounding environment. Creating an open channel watercourse in this location could provide additional flood risk management benefits in the area and allow disconnected surface water connections from the combined sewer network in the area to be made.

There are further, more playful opportunities to explore which could create a destination in itself for the new watercourse (shown on the drawings as "Meadowmill Water"). The start of the open watercourse would be close to a geothermal source and so the water could change temperature along its route, along with level adjustments to allow a micro hydro. This could be enhanced by associated changing planting palettes and would connect Meadowmill to the coast and the John Muir Way. This then allows a circular route which could also take in the Waggonway and national climate change visitor centre and other attractions along the route.



Indicative montage illustrating the opportunity for the formation of an outdoor water park, linked into wider leisure and ecological networks, which supports both leisure and sporting activities. Opportunities for economic development and the creation of jobs locally, are proposed via the development of new models of horticulture including: vertical growing, the use of geothermal energy as a heating source, and hydroponics.

fig. 13: Montage representation of watersports

5.3.3 Meeting the Vision Objectives

The strategies set out here have been assessed against the overarching objectives for addressing climate change, improving health and wellbeing and sustainable placemaking as follows:

Climate Change

Adaptation

- Managing water systems including the creation of large water bodies reduces vulnerability to climate change through controlling flooding;
- Restores watercourses no longer operating efficiently through channelling and seepage to allow them increased capacity;
- Restores culverted water into open watercourses offering cross benefits with biodiversity;
- Brings surface water out of the combined sewer network alleviating issues of overflow during extreme weather into the Forth and
- Transport infrastructure interventions could also deliver synergistic benefits, such as improving water management and for delivering active travel and energy or heat networks over or under strategic transport corridors on the Zone.

Mitigation

- Energy efficiency through use of mine water and opportunities for decentralised heat networks, use of Micro Hydro and heat from sewage.

Sequestration

- Opportunities for carbon storage within the wetland features and associated new planting.

Health and Wellbeing

- Use of green infrastructure to encourage active travel;
- Provision of high-quality open space at the interfaces between communities foster community links;
- New opportunities for swimming and other water sports;
- Wetland Parks encourage interaction and offer opportunities for community initiatives;
- Lower costs of living from innovative energy solutions, and
- Presence of water and nature has proven mental health benefits.

Placemaking

- Use of water, new improved watercourses designed with different characteristics and a central heated Lido creates a strong identity for Greater Blindwells New Town;
- Promotes connectivity of settlements and places within settlements through the water systems and opportunities for associated paths;

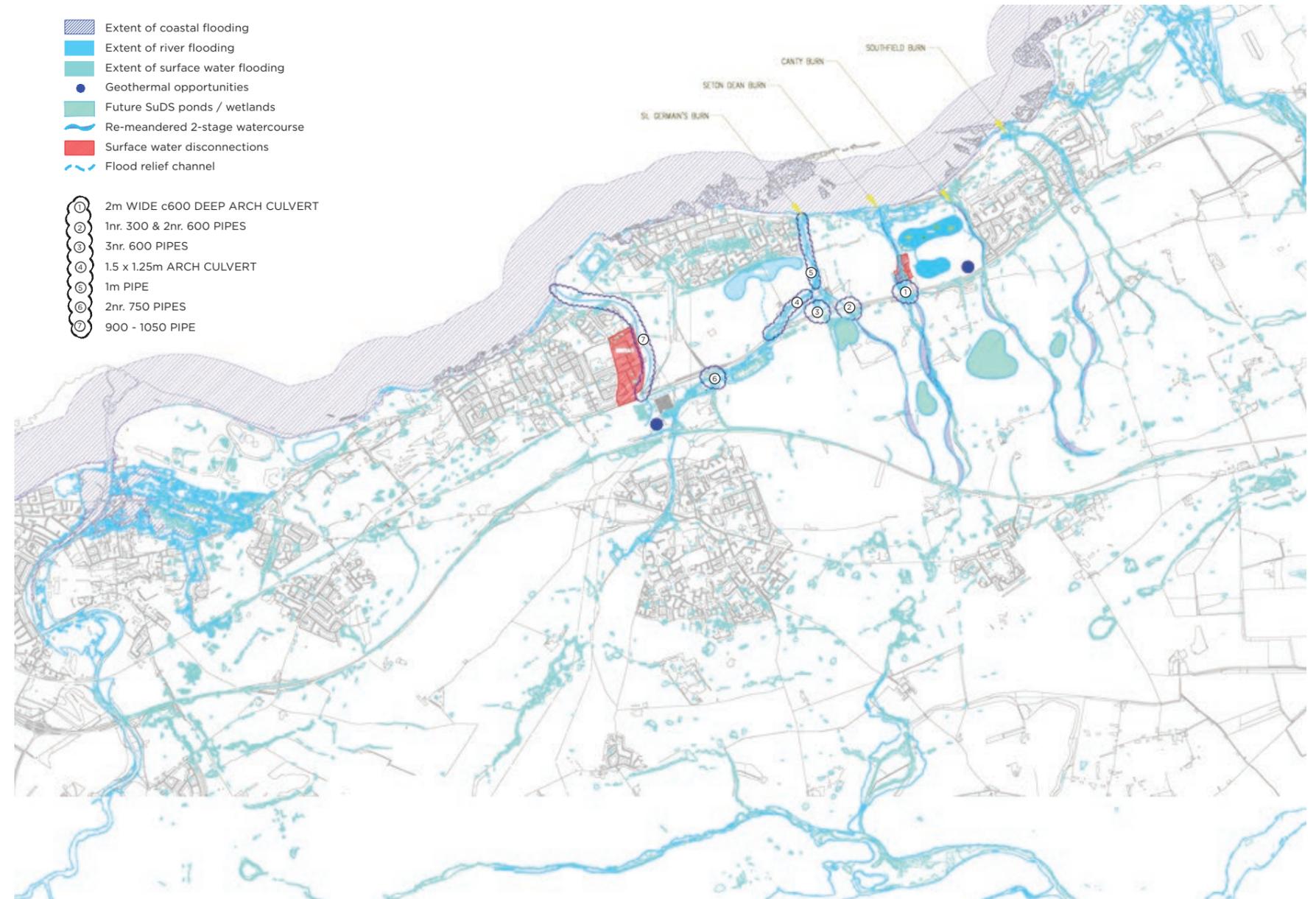


fig. 14: Water constraints and opportunities

- Innovative use of geothermal energy is resource efficient and gives opportunities for training and enterprise through promotion, strengthened by the links to the mining industry, and
- Being at the cutting edge of new clean technologies adds to place identity and local pride.



Filter ponds at Blindwells



Installation of pipes for ground source heat pump at Saughton Park. Image credit: Pete McDougall / City of Edinburgh Council



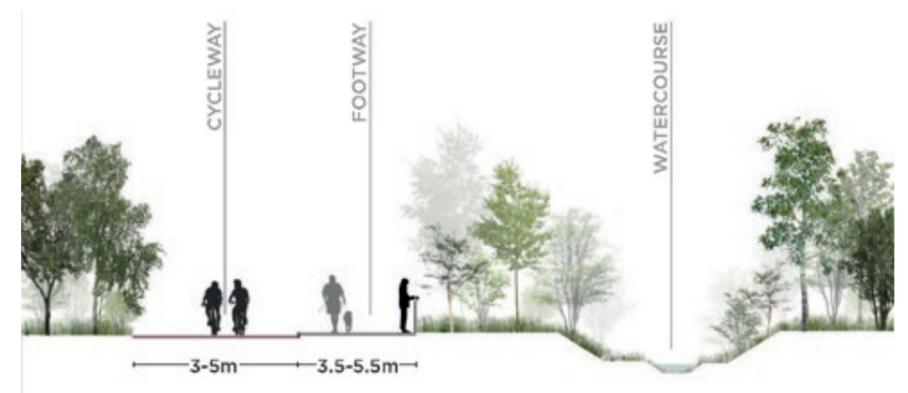
Installation of dam for micro-hydro at Saughton Park. Image credit: Pete McDougall / City of Edinburgh Council



Polnoon bio-retention swales (Eaglesham)



Exemplar rain gardens example



Typical restored watercourse section with new planting and active travel corridor

5.4 Theme 3: Culture, Heritage and Leisure

5.4.1 Vision and Approach

Visit East Lothian is the brand and destination for tourism in East Lothian. To maximise and enhance opportunities for tourism, increase the inland recreation offer through controlled inland water spaces, draw on the mining heritage, enhance the historic Waggonway route by integrating it into the wider route network and connecting in part or in whole to circular opportunities. Overall there should be better access to existing cultural and leisure facilities as well as full integration with all new proposals. The Climate Resilience Zone should become a regional destination in its own right.

Tourism trends

This is touched on within sections 5.4 and 5.6. Clear trends for tourism are emerging bringing many opportunities for East Lothian to capitalise on within this area:

- Not enough 5-star destination accommodation, especially where larger groups can be accommodated;
- A move, supported by Government funding, to release the pressure points across Scotland and spread the visitor experience into other places;
- Health and wellbeing are the biggest trends with people seeking any range of experiences from using a luxury spa to glamping in the wilds or long distance cycling and walking: this is set to bring billions into the national economy;
- The sustainability of the destination or business is becoming a tipping point in choosing where to go;
- “Softer” tourism opportunities are increasingly important; walking tours which bring history to life for example;
- Synergy is important; one big draw isn’t enough; collaboration over a route for a number of attractions or activities will hold visitors for longer;
- Artisan food and drink experiences with a sense of place and provenance, how this links with the landscape and the creative story behind it.

Whilst the creation of the Climate Resilience Zone is aimed at bringing an improved quality of life to those who live there, tourism can generate increased footfall which help support local business, allows new business to start up and, with the right support, flourish and it creates its own economy of supply needs. Increased use of facilities will support them and enable viability. Being clear that all new businesses within the Climate Resilience Zone area have to meet baseline criteria for sustainability as part of the Climate Change Strategy will be a positive aspect rather than a constraint.

5.4.2 Strategy

Cultural Heritage Arts Strategy

This part of East Lothian is rich in cultural heritage and destination features including designed landscapes, listed buildings, scheduled monuments and battlefield sites (see the plan on the following page). One example is Bankton House a local garden and designed landscape with its own replanted orchard - part of its restoration, this reflected its own heritage where the house originally had an orchard. It also houses a Battle of Prestonpans exhibition in its doocot refurbished in 2013. Another example is the old historic Tranent Tower and the doocot at Tranent which are Tranent’s oldest buildings and in need of repair and restoration and a new use. The tower is associated with the Battle of Prestonpans as lookouts were stationed there- it had a good view of the battlefield at that time and it is a part of the heritage of Tranent. The Battle of Prestonpans battlefield is also central to the area. Collectively, and especially in association with the John Muir Way, they are interesting and important to the history and heritage of the local communities but individually don’t form a major draw. The addition of a high quality training hotel, Prestongrange Visitor Centre, water sports facility, nature conservation and a potential Orientation/ Climate Resilience Centre will help redress this, and a cultural heritage strategy will pick up on all of these opportunities amongst many others.

This should be a multimedia strategy which helps define the area and connects the communities together through their sense of identity; it could include evening programmes as well as daytime and can help encourage an increase in overnight stays; linked to the general trends in tourism and bringing in local food and drink opportunities this would encourage an upward trend in tourism and local education

Orientation/ National Climate Resilience Centre

There is an opportunity for a new National Climate Resilience Centre, located in the Climate Resilience Zone and built and powered using sustainable construction methods with carbon neutral maintenance systems. This would be a signature building, and could spotlight the Climate Transition Zone through being subject of an international design competition. The centre would form a main arrival point to the Climate Resilience Zone, providing orientation and ticketing. There is an opportunity for the centre to be powered by geothermal energy and would be an exemplar building showcasing the best in sustainable architecture. The centre would have a strong educational function, as described further under section 5.6, Theme 5, linking to STEM subjects and higher education establishments.

The centre could be supportive of, linked, or be a part of the Prestongrange Visitor Centre, eg physically via the active travel network as well as conceptually by demonstrating a vision of transition ‘from coal to carbon neutral’ as a means of storytelling and promoting place identity within the Zone. It could also be supportive of and linked to the proposed Battle of Prestonpans visitor centre, that could be located within Blindwells 1, via the active travel network and cultural heritage trails.

An orientation centre, whether within Prestongrange or within a purpose-built new building could form an integral part of the Climate Resilience Zone’s branding strategy alongside the wayfinding strategy. The centre would promote the key themes and central concepts of the Climate Resilience Zone from an early stage within its evolution and will evolve with the Zone over time.

Further study would be required on likely footfall, costs and relationships between these visitor attractions in order to assess feasibility.

Cultural Heritage Trails and 3 Harbours Promotion

The Tranent to Cockenzie Waggonway route could be fully integrated into the active network proposals and be developed to be fully accessible and provide historic interpretation, forming part of the overall story of the Park and supporting the ‘from the past into the future’ vision for the Park area. Proposals should also allow improved appreciation of the Prestonpans Battlefield site including from the Meadowmill pyramid.

Over time further cultural trails could be developed as circular/linked walking and cycling routes within the Active Travel Network. These routes could tell the unique and personal stories of innovation and industrial heritage of the area including the industrial and cultural heritage associated with: pottery, mining, fishing, salt panning, tapestries and murals.

The trails would also link with the John Muir Way to link the three harbours (Cockenzie, Port Seton and Prestonpans). This could be part of a wider programme to support and promote the three harbours to work together, provide a variety of attractions/enhancements fitting to the character of each place (after the precedents of Dunbar, North Berwick and Portsoy). They provide an opportunity to be celebrated as part of the area’s coastal heritage and to link the coast with inland attractions via the Active Travel Network.

Meadowmill Sports Centre Connectivity

The existing Meadowmill sports centre is a valuable and well used facility, however it could be better connected to its surroundings, including by active travel modes. Located within the Core Park Area (section 7), the strategy proposes to reconnect the sports centre by enhancing the area around Meadowmill through linking it with the proposed Active Travel network as well as the proposals for the former Cockenzie Power Station, development of a training hotel, reopening the Bankton Adit and the National Climate Resilience Centre. Plans to reconnect the sports centre could take into account its current lack of visibility and consider careful use of planting to enhance its setting.

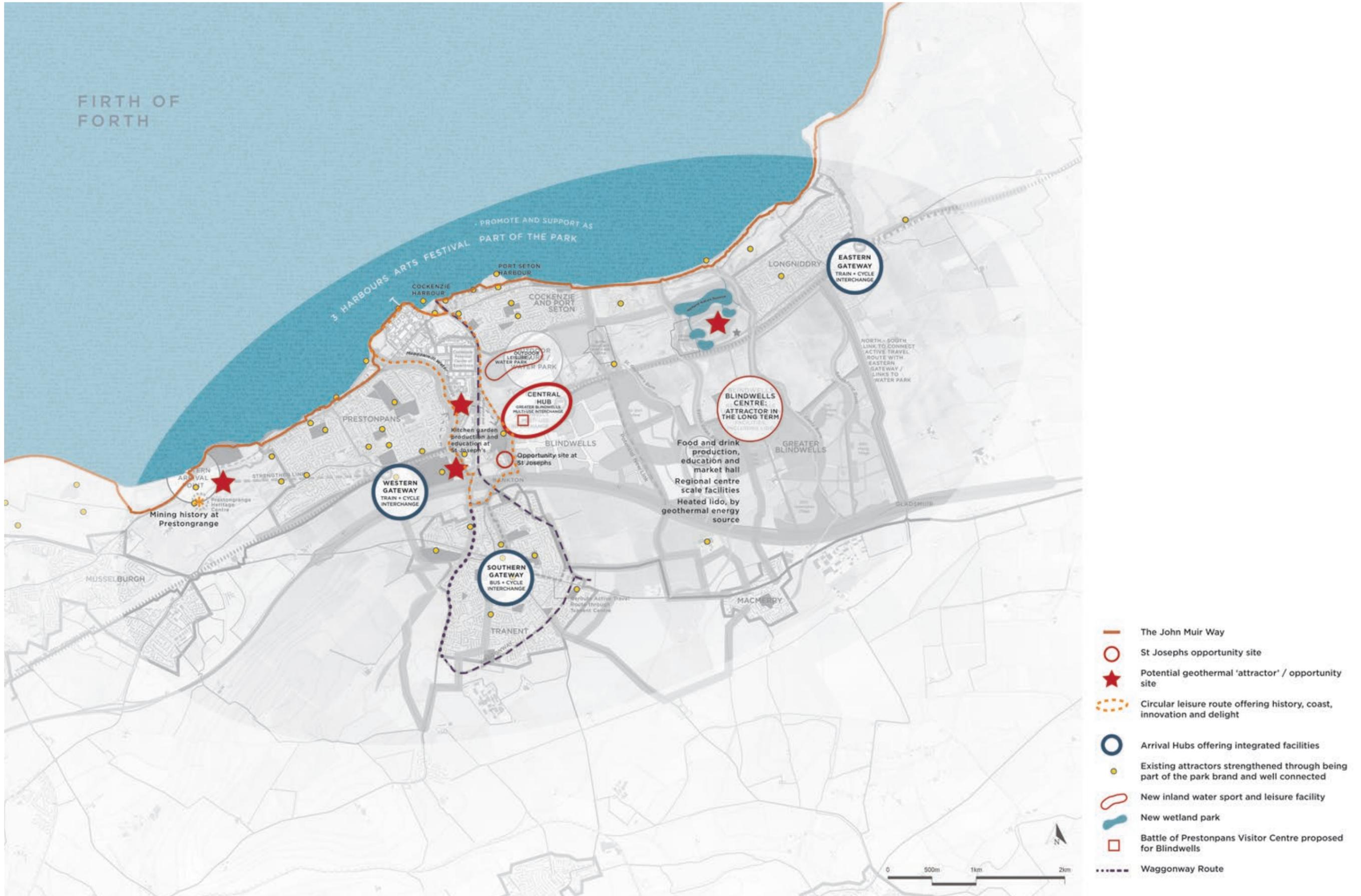


fig. 15: Theme 3: Culture, heritage and leisure strategy

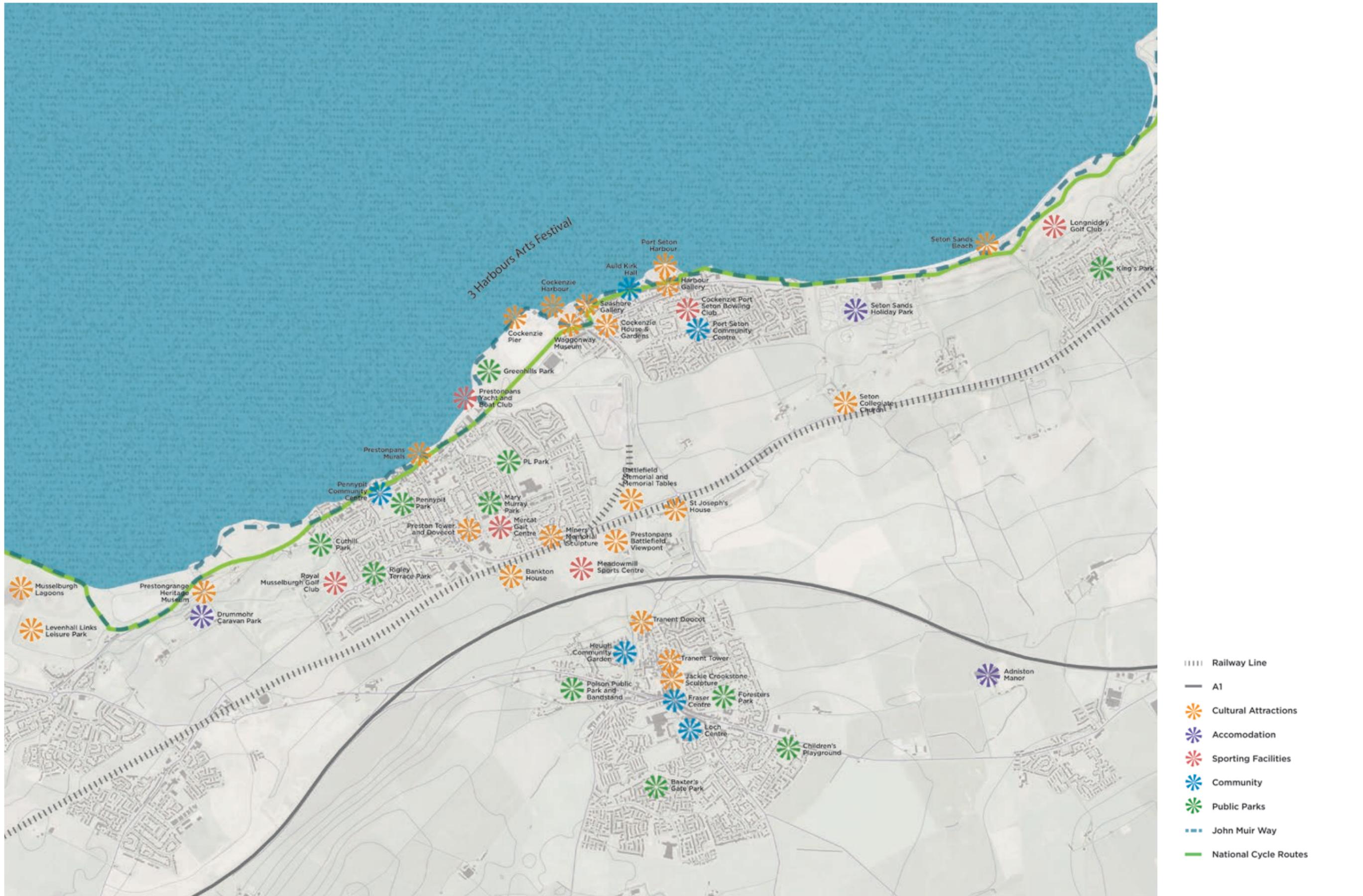


fig. 16: Existing cultural attractors

5.4.3 Meeting the Vision Objectives

The strategies set out here have been assessed against the overarching objectives for addressing climate change, improving health and wellbeing and sustainable placemaking as follows:

Climate Change

Adaptation

- Cross benefits arising from the water management as a means of reducing the impact of flooding;

Mitigation

- All Park facilities powered by a decentralised heat network including geothermal and hydro sources;
- Potential National Climate Resilience Centre built using sustainable construction methods, with carbon neutral maintenance systems. An exemplar building offering education in living more sustainably;
- Creation of a large kitchen garden in association with a high quality training hotel facility allows education opportunities for growing and cooking and instils skills for sustainable growing methods within the younger population.

Health and Wellbeing

- Celebrating the history of the area through investing in cultural facilities promotes confidence and provides a sense of identity and belonging central to wellbeing;
- Promotion of increased physical activity via the active travel network, increase in leisure resources through the Park area and promotion of opportunities for contact with nature which promote health and wellbeing;
- Opportunities within the leisure, culture and activity proposals to offer job and skills training as well as providing enterprise opportunities which will help to regenerate the local economy.

Placemaking

- New interventions create a strong identity for a part of East Lothian which is often overlooked;
- Easy to move around through the enhanced and connected networks which link existing and new attractors and communities together;
- 'welcoming' through identifiable 'front door' of a visitor centre and the Gateway hubs;
- The proposals offer equal opportunities catering to differing abilities and demographics;
- By its definitions the Climate Resilience Zone will be resource efficient;
- Increased choice and increased access to leisure and activity facilities.



Artwork celebrating the rich fishing history



Prestonrange mural



Gosford House west gateway (notable from A198: limited access to private estate)



fig. 17: Proposals for a re-opened Bankton Adit forming 'Meadowmill Water' and offering a variety of leisure opportunities / potential location for visitor centre / new employment / development at Cockenzie



Port Seton Harbour



Cockenzie Harbour



Portsoy Traditional Boat Festival (Copyright Allan Robertson)



Prestonpans Tower

5.5 Theme 4: Greenspace and Biodiversity

5.5.1 Vision and Approach

There are five key drivers of biodiversity loss, including changing land use, exploitation of resources, climate change, pollution and alien species. Climate change and ecological issues are closely linked and must be addressed in tandem

The aim is to seek opportunities for the creation of a blue-green infrastructure, maximise opportunities for tree planting across the area and an increase in biodiversity.

Create and improve integrated habitat networks, protect (where appropriate enhance) the natural heritage assets in the wider area, and provide an enhanced amenity and landscape setting for the existing and proposed communities.

5.5.2 Strategy

Integrated Habitat Network Plans

Develop Integrated Habitat Networks (IHN) across the area which recognise local biodiversity and link existing habitats together with communities, the coast and into the wider area.

These plans should be developed with ecologists and need to take the existing IHN tools and assess proposed species mix against current species disease and climate change projected impacts.

The projects proposed within this strategy should take account of the Integrated Habitat Network as it develops. Proposals should look to support the IHN. There are particular opportunities around:

- Theme 1 'Active Travel Networks';
- Theme 2: 're-naturalisation of watercourses', 'Re-open Bankton Adit culvert', 'surface water management plans for existing settlements, 'wetland habitat areas'
- Theme 3: 'Tranent to Cockenzie Waggonway', 'Cultural Heritage Trails', '3 Harbours Strategy', 'Meadow Mill Connectivity'
- Theme 4: 'Council Owned Open Space'; 'Climate Resilient Planting Programme', 'Transport Corridor Planting Opportunities'.
- Theme 5: 'Horticulture Inward Investment Study', 'Training Hotel and Kitchen Garden'

Greenspace and Biodiversity Within Urban Areas

The Council owns several areas of open space within the area. This ranges from high quality amenity space e.g. around Preston Tower, to large areas of mown grass.

There is an opportunity to restructure a lot of the green space and remove some of the hard landscape, and create softer spaces which have drainage

functions. This would link closely with the regional water management strategy. Whilst this will be a significant capital cost, it could save on maintenance in the long term. This will require detailed study in the first instance which could be a project in its own right or could be embedded within the Local Regeneration Plans (see Theme 5). Opportunities which could be considered include:

- Establish a hierarchy of spatial types: some landscapes should be protected as they are whilst others need restructured and others created;
- Connect the existing isolated green spaces within settlements with ecological corridors of flowering plants using existing urban infrastructure to create pollinator pathways;
- Provide 'oasis' areas with shelter, shade, seating and planting within town centres, employment areas and residential areas especially where there are homes without gardens. Where appropriate, add soft landscaping to existing landscaped areas. This is intended to be adaptive, to allow for people to seek shade in hotter summers as a result of a changing climate;
- Connect Council owned open space into the proposed Active Travel Network;
- Introduce rain gardens (a planted form of SuDS) and swales within existing urban streets or within large swathes of grass (see montage image as how this might work) as part of surface water management plans and pollinator pathway creations, connected to the IHN;
- Create allotments and community orchards on Council owned land and incentivise fruit tree planting (through grants and training) within private gardens;
- Creation of energy through Zone resources. Reference should be made to Greenspace Scotland and the ParkPower project (e.g. Saughton Park using micro-hydro and ground source heat pumps to power the Park's visitor facilities, cafe and greenhouses).
- Proactive engagement with the community will be required in order that projects on Council owned land act as a catalyst for ongoing further projects within the community and on private land;

Climate Resilient Habitat Creation Policy

The aim is to develop a palette of climate resilient species which are native, have high levels of carbon sequestration potential, support biodiversity, have an ability to absorb pollution, resilience to changing temperatures and levels of rainfall and are robust against disease (following the latest available evidence); this could be done in association with organisations who can develop a seed bank.

Apply the policy to all house builders and developers within the Zone with evidence of compliance required at all stages until completion.

Value should be given to restoring existing habitats in addition to supplementary planting/ habitat creation suitable to the area, including grassland, with greater prominence given to habitats other than woodland.

Low Carbon Food Strategy

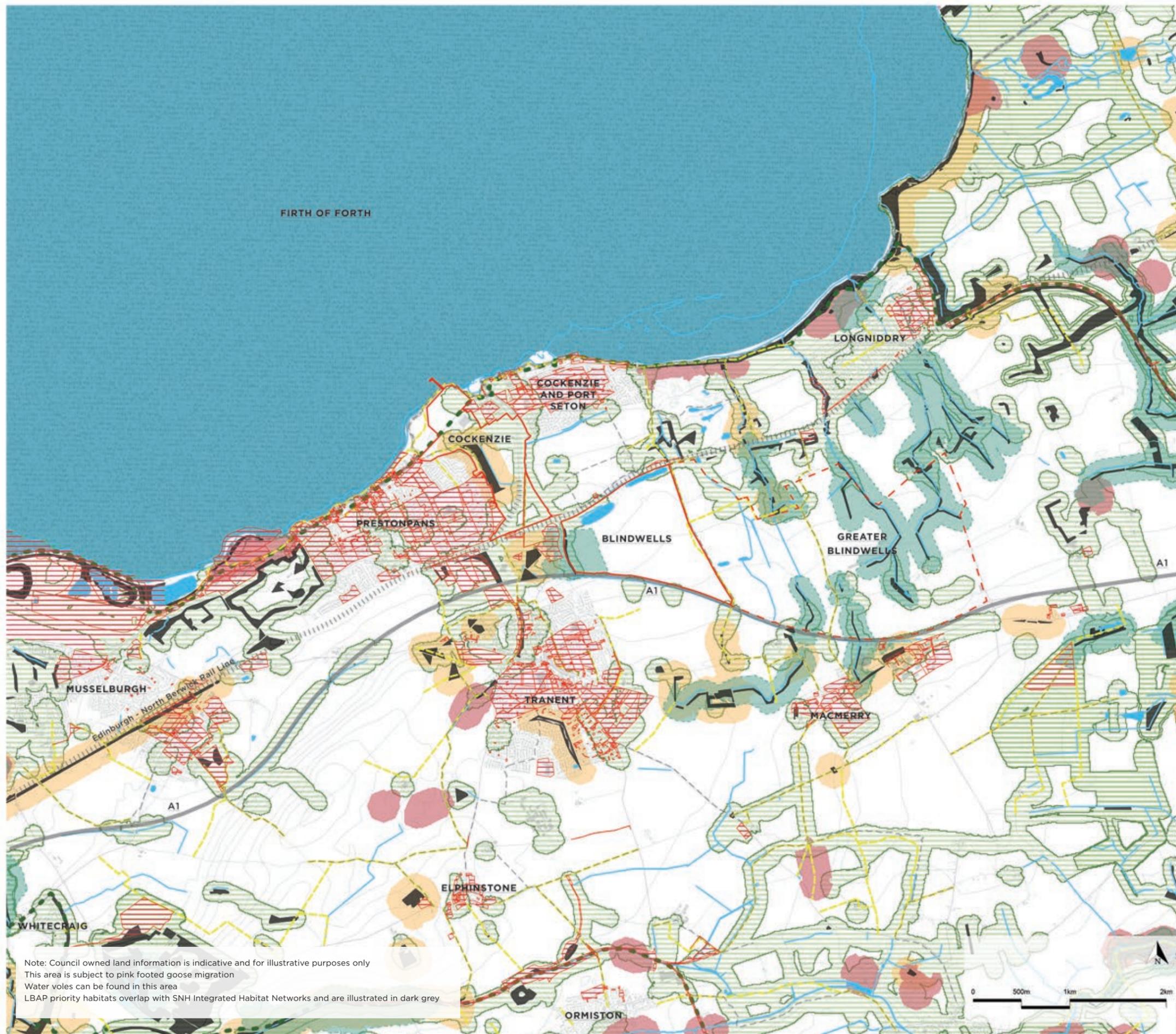
Food is a major part of most people's carbon footprint: in transport, packaging, growing methods, and what we eat. Aims of reducing food miles, and increasing health, though increased use of local food supply and community growing programmes would form the basis of a low carbon food strategy. East Lothian has a rich productive agricultural landscape, and there is a history of innovative market gardening within this area. Harnessing this history, and establishing links to the East Lothian Food and Drink BID as well as Queen Margaret University would form the basis of the strategy. Several strands of the Climate Resilience Zone come together for this: community and private growing, use of greenspace, agricultural methods as part of land management, inward investment for new business at Cockenzie, opportunities around tourism and hospitality and education around cooking and eating.

Transport Corridor Planting Programme

Undertake new tree and hedgerow planting (as appropriate) along existing transport corridors in accordance with the policy as a high priority, setting requirements for what is expected along new active travel routes. This should be multi-beneficial, and provide wildlife enhancement along the margins where possible along the route, in particular by planting a mini-beast corridor/ grassland/ flowers of species of local origin alongside.

Greater Blindwells

Greater Blindwells will be a high density, mixed use development with opportunities to create a setting and identity around high quality well-maintained green and blue infrastructure which delivers high biodiversity value.



- INFRASTRUCTURE/DEVELOPMENT CONTEXT**
- National Cycle Route
 - John Muir Way
 - Right of Way
 - Core Path
 - Council Land Ownership
 - LDP development site opportunities
 - LDP Safeguarded development site opportunity
- SNH INTEGRATED HABITAT NETWORKS**
- Wetland Habitat Network
 - Woodland Habitat Network
 - Neutral Grassland Habitat Network
 - Acid Grassland Habitat Network
- LOCAL BIODIVERSITY ACTION PLAN PRIORITY HABITATS**
- Includes the following habitats:
- Blanket Bog, Coastal Saltmarsh, Coastal Sand Dune, Floodplain Grazing Marsh, Lowland Calcereous Grassland, Lowland Dry Acid Grassland, Lowland Meadow, Maritime Cliff and Slope, Mudflats, Possible Wet Woodland, Reedbeds, Upland Mixed Ash Wood, Upland and Lowland Heath.

Note: Council owned land information is indicative and for illustrative purposes only
 This area is subject to pink footed goose migration
 Water voles can be found in this area
 LBAP priority habitats overlap with SNH Integrated Habitat Networks and are illustrated in dark grey

fig. 18: Theme 4: Existing Habitat Opportunities and Constraints

5.5.3 Meeting the Vision Objectives

The strategies set out here have been assessed against the overarching objectives for addressing climate change, improving health and wellbeing and sustainable placemaking as follows:

Climate Change

Adaptation

- Work with the horticulture and silviculture industries to encourage banking of local species with the ability to adapt to changing environments with natural immunity to disease;
- Using the restored and re-engineered watercourses to create new green links; a new wetland Park offers an opportunity for different structures of planting which are resilient to climate change;
- Increased tree cover offers protection from wind and sun, two impacts from climate change patterns.
- Hedge planting along transport routes absorbs pollutants creating better cycling environments, and interfaces with residential areas.

Mitigation

- Local food growing and support of local production reduces food miles;
- Opportunities to rethink how our public open space is designed and managed; more tree planting and increased biodiversity and encourage food growing in how we manage our landscapes with a view to making them more productive. This promotes the education of using locally grown food sources.

Sequestration

- New planting allows the storage of carbon in the long term, absorbing pollutants;
- Restoration of existing habitats in addition to supplementary planting;
- Habitat creation, suitable to local conditions and including grassland, support increased biodiversity.

Health and Wellbeing

- Increased access to and promotion of healthy local food production changes attitudes toward improved diet;
- Education in cooking from scratch using local seasonal food will improve health outcomes as well reduce food miles;
- Well-designed greenspace promotes regular exercise and provides social spaces for communities to engage, reducing isolation and loneliness.
- Access to urban greenspace is associated with improved mental health, reduced cardiovascular morbidity, reduced risk of Type 2 diabetes, and improved pregnancy outcomes.

Preston Tower

Placemaking

- Working with the landscape will promote attractive settlement settings. This will equally apply at Greater Blindwells where management of the water systems, and different design approaches to different burns and water bodies will characterise areas as well as promoting access and ease of getting around.
- Appropriate design within existing settlements can reflect the complexities of local landscape, culture and heritage.
- New water features can promote tourism which enables regeneration.
- Well-designed green space encourages people to go outside and increased social interaction. The quality of the landscape is intrinsic to East Lothian and by bringing this into urban areas will encourage investment from companies choosing to locate with lifestyle choice as a top priority.



Perthshire Apples



Fresh produce at West Mains allotments



Dunkeld Allotments



fig. 19: Theme 4: Greenspace and Biodiversity Strategy

5.6 Theme 5: Strong Communities, Regeneration and Enterprise

5.6.1 Vision and Approach

To maximise the opportunities and benefits arising for the existing settlements within the Climate Resilience Zone, and to ensure that Greater Blindwells meets the vision for what kind of place it should be. Employment is crucial and includes providing training and encouraging enterprise to increase job density and deliver new jobs aligned with a low carbon economy. This will include investing in innovation, creating links with other institutions and will encompass both soft and hard urban design solutions to both change perceptions and create places which are robust and self-sustaining. There are opportunities around enterprise, innovation and training that respond to the area's building growth, in increased tourism arising from the Zone, and looking to the future from the area's past: particularly the former industries and their link with new technologies, and in the food and drink sector.

Create a strong brand for the Climate Resilience Zone, maximise and enhance opportunities for tourism and education, and reduce inequality.

5.6.2 Strategy

National Climate Resilience Centre

There is the potential for a National Climate Change Centre which could also form a main arrival point to the Zone, providing orientation and ticketing. It should be linked to one of the geothermal opportunity sites in the area. This is described further under section 5.4, Theme 3. Part of this building should have an education function aimed at secondary school children and focussed on engineering and skills for creating opportunities for sustainable living whether through power, housing design or environmental planning. The aim is to encourage increased interest in entering apprenticeship schemes and science based higher education learning. This facility could become a national exemplar facility, linked to the wider intentions for the Zone to become a National Development area. Its delivery may be explored with the support of the Scottish Government and others.

Geothermal Feasibility Study

The potential for geothermal energy is set out within section 5.3 "Theme 2: Managing Water". There are opportunities around this for the provision of sustainable energy into the Zone and the new facilities being proposed. Also for regeneration of the existing communities, particularly those with high levels of Council housing stock which could benefit from many of the opportunities presented by the assets in the area that could provide lower cost, lower carbon heating solutions. An opportunity lies not just in provision, but in the potential to own and manage the heating network.

This offers the chance to align the emergence of the low carbon New Town with inequalities arising from fuel poverty.

Greater Blindwells

A vision is emerging for how Greater Blindwells should develop. Opportunities for this to be an exemplar new settlement will follow through into how it shapes its town centre; the form of it will not reflect the traditional high streets of the existing towns but is more likely to be in a different form with health and wellbeing facilities, distinctive and destination retail, cafes, restaurants and growing opportunities are all focussed around a large lake which will form part of the drainage system and may link to an urban Lido. Hence the centre offers leisure, practical and shopping needs designed as a destination experience. Some of the opportunities for the creation of strong communities, regeneration and enterprise include:

- New business opportunities for local companies within the destination offer;
- Start up business space with an opportunity for follow-through space for growth perhaps on the edge of the centre;
- Greater Blindwells lies between the industrial west and the rural east: a good location for a training centre for rural industries with links to many organisations and the quality food and drink brand for which East Lothian is known;
- A Market Hall; well located for population density and a showcase for the best of East Lothian produce. Understanding and promoting a local provenance food and drink culture is a key part of the current tourism trend. [example; Bowhouse, East Fife]. East Lothian is a Food and Drink Business Improvement District so there are good links for this.

Horticulture Inward Investment Study

It became apparent at the workshop that there is pressing demand for land from the horticulture industry; this should be explored further. This doesn't necessarily require Prime Land but includes opportunity for using new high density, vertical growing, methods, under glass and using geothermal energy for low cost, low carbon heating solutions that extend seasons, tree establishment from local seed which will be pot based, and the various techniques for growing used by the pharmaceutical industry. Parts of the Cockenzie site may offer an ideal location for this due to the location and energy source. This has synergy with the history of market gardening within the area: at one time local company David Lowe and Sons was the largest grower of vegetables in Scotland employing a contemporary "French" gardening system to sterilise soil by steam and extend the growing period under glass through a coal-fired heating system.

Training Hotel and Kitchen Garden

Discussion with stakeholders has highlighted the current skills gap emerging in the hospitality industry with the rise of the European economies, together with the UK withdrawal from Europe halting the inward flow of labour into Scotland. This applies at all levels from leadership skills to service. Equally

there is high demand for 5-star accommodation within this area, and a lack of options for group travel. Seen against a strategy to encourage tourism out of the traditional "hotspots" and into other parts of the country East Lothian needs to promote itself as a destination which can act as a base: not a day out of Edinburgh.

An excellent opportunity to meet all of these opportunities and provide local training opportunities lies in creating a 5-star training hotel, with a large kitchen garden attached to service the hotel. This should be centrally located to provide easy access. This offers many benefits:

- Training can be provided for all aspects of the service industry from catering to housekeeping, building management, and specific specialisms such as sommelier or mixologists;
- There are opportunities for all grades of staff and management;
- The garden acts as an additional draw and training opportunity, whilst promoting education in local growing and cooking for everyone and linking back to East Lothian's history and health education;
- Good opportunity to create links with Queen Margaret University;
- Links with the East Lothian Food and Drink Business Improvement District;
- Increased tourism which holds visitors for longer within East Lothian.

Provides a community resource by offering restaurant services and a venue for event hire.

There are many examples of similar ventures:

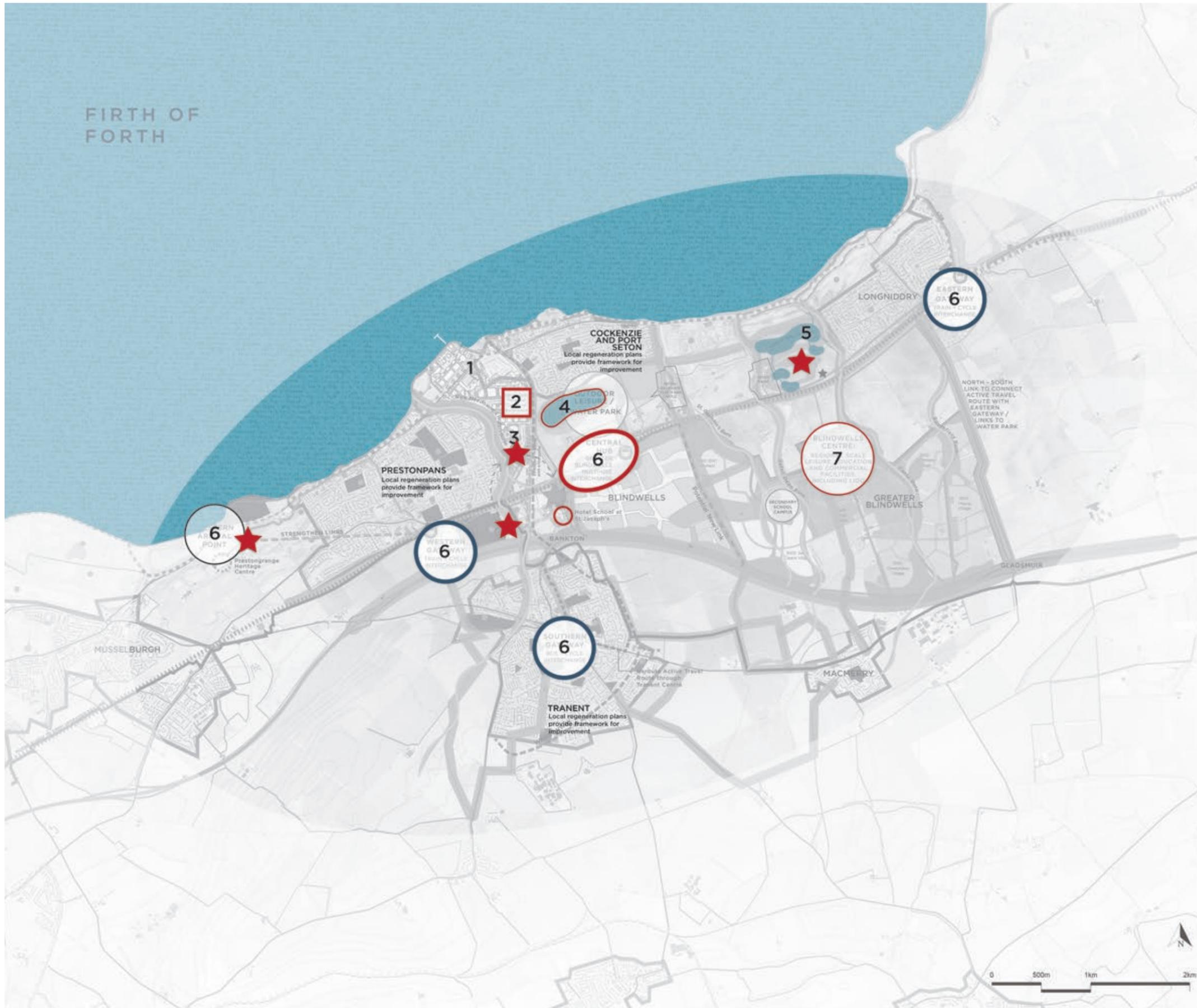
- <https://hotelschool.nl/en/hotels-restaurants/skotel-amsterdam>
- The Prince's Foundation (Dumfries House)
- Kitchen garden as part of the attraction: L'Enclume, Cumbria and Le Manoir, Oxfordshire.

Cockenzie Centre for Excellence in Sustainable Building

The scale of building required in Scotland exceeds that currently being met. A substantial amount of new homes may be created within the Climate Resilience Zone area itself; building requires a skilled labour force, and there are new technologies and construction methods emerging. A centre of excellence at Cockenzie could help meet local demand and is future-proofed for viability beyond the life of the New Town through an excellent location: close to the A1, close to water and with the potential of an upgraded rail network. This would be part of a number of uses accommodated at Cockenzie. This could also provide a framework to promote education, skills development and new job opportunities linked to a just transition to a low carbon economy in association with regional City Deal programmes and local facilities.

Local Regeneration Plans for Existing Communities

As part of future resilience, the proposal is for local regeneration plans for the existing communities. These should include recommendations for



Notes:

- ① Feasibility study to determine potential for geothermal energy to provide investment for regeneration and fuel equality
- ② Aim is for Greater Blindwells to be carbon neutral through district heating system via geothermal heat extraction

Key:

- 1 Employment and regeneration at Cockszie
- 2 Potential 'Centre for Excellence' at Cockszie with training, innovation and building supporting sustainable construction
- 3 Horticulture inward investment study
- 4 New inland water facility: publicly accessible and offering employment and training
- 5 Wetland nature reserve; accessible space with opportunities around wildlife and landscape management
- 6 Gateways and hubs offer employment and enterprise opportunities
- 7 Greater Blindwells New Town Centre: distinctive and offering a network of facilities. Potential uses include a lido, market hall, showcase for East Lothian Food and Drink, training opportunities complementary to elsewhere within the park, and 'city' business district and event space
- St Joseph's School: Opportunity Site
- ★ Potential geothermal 'attractor' / opportunity site

*Not shown on map: Potential for a 5 star 'training' hotel, supported by use of the space for market gardening; links to Queen Margaret University and Edinburgh College

fig. 20: Theme 5: Strong Communities, Regeneration and Enterprise Strategy

improvements to town centres, shop front improvements, street design, and derelict land and buildings strategies but there are already initiatives currently underway which can connect into these plans as well as the ideas for Council open space and connectivity.

The John Muir Way is set for significantly improved marketing aimed at developing revenue-generation activity related to the John Muir Way brand and creating new opportunities for consumers and business to engage with the JMW brand. The aim is to create a sustainable income stream for the route – through developing and implementing strategies for merchandise, sponsorship and promoting businesses on the JMW website – so that local people, visitors and businesses can continue to benefit from the route and contribute to its stewardship. This relates to the objective of relieving Scotland’s busiest places and the John Muir Way is a good alternative to the West Highland Way with widespread appeal; this could be a good opportunity for the coastal communities within the area.

Encouraging enterprise

The existing demographic within this area is low wage; it is important that new opportunities offer a healthy variety with different levels of wealth. There is land at Cockenzie and at Blindwells where there can be a radical approach to supporting new businesses through:

- Identifying need;
- Offering incentives;
- Providing space, whether local serviced hubs, start-up space and room to grow.

This needs to be matched with high speed broadband, digital hubs and appropriate training.

Skills, Development & Training

As part of the approach, there is scope to consider links to the Edinburgh and south East Scotland City Region Deal Integrated Employability and Skills programme and to the emerging facilities management facility being planned at the new Wallyford Secondary School. Particular opportunities may exist in:

- Modern methods of sustainable construction - e.g. off-site manufacturing of homes and infrastructure
- Low and zero carbon energy and heat technologies, perhaps in association with the creation of heat networks or hydro schemes
- Agricultural or horticultural practices and products
- Food and drink.

5.6.3 Meeting the Vision Objectives

The strategies set out here have been assessed against the overarching objectives for addressing climate change, improving health and wellbeing and sustainable placemaking as follows:

Climate Change

Adaptation

- Create sustainable communities where less people have to travel to work;
- Education, through opportunities at the new visitor centre and in how the Zone functions, captures the imagination will help promote more sustainable and adaptive ways of living;

- Education in growing and cooking with minimal food miles and better health outcomes creates a more resilient community;
- Opportunities to link training to low carbon and energy technologies and sustainable construction facility, linked to regional and local education, skills development and training, with consideration of apprenticeship schemes within major development areas.

Mitigation

- Communities will be at less risk of future flooding by taking a preventative approach now through the blue-green strategies of managed water systems and planting;
- Improvement of the housing stock and building a low carbon New Town mitigates against emissions.

Health and Wellbeing

- Initiatives around growing and cooking can start to improve on health issues; encouragement to more plant-based diets not only reflects the history of East Lothian and market gardening but meets climate change targets.;
- Creating an area with its own identity, improving opportunity, environment and connectivity will build community confidence and improve physical and mental health;
- Opportunities to adopt innovative healthy design principles for Greater Blindwells New Town.



fig. 21: Typical image of open space encompassing large areas of grass

Placemaking

- There are opportunities to capitalise on a clear identity for each community, using the Climate Resilient Zone and its brand as a catalyst. Existing settlements will make the best of their urban traditions and identity to adapt and move forward, and the new community presents a unique opportunity to plan comprehensive and from the outset for how we will need to live in future.
- Halting the rise of East Lothian acting as a commuter belt for Edinburgh by offering a different lifestyle choice of living and working locally will create more sustainable places;
- Creating a clear “brand” to the Park and improving the visual quality of the settlements within it, will produce a sense of welcome;
- Opportunities for employment and starting new businesses breathes confidence and vibrancy;
- Resource efficiency is encouraged by exploring new building techniques and materials and living in more efficient properties where possible; provide opportunities for access to renewable energy sources for everyone.



Indicative montage illustrating the principle of removing high maintenance, low biodiversity grassland areas and replacing them with a 'rain garden' type approach.

NB not intended as a place specific proposal

fig. 22: Open Space: After

6. Challenges

6.1 Setting a boundary

The original intention for this study was that it should focus on the area between the settlements especially around Cockenzie, Tranent and Prestonpans. However, the early appraisal work identified that meeting climate change priorities meant large scale management of the water systems which are one of the biggest challenges within this area. This extended the boundary, and it made sense to include the settlements themselves in order to create a more meaningful strategy which could meet the vision of stimulating social, economic, and environmental regeneration.

Studies show that there is a 10-year urgency to addressing climate change and reversing the trends of global temperature rising. Adopting measures to adapt and mitigate are important at all levels but can be at their most effective on a sub-regional scale. This allows a broader breadth of thinking especially around the issues of water catchments, active and sustainable travel and large-scale planting. East Lothian has significant areas of prime land which is essential for agricultural production; large tracts of tree planting may therefore not be appropriate and should be focussed along routes and within selected areas of land which is not in farming use. A large-scale strategy that seeks to connect these is therefore more appropriate than small pockets.

The strategy recognises, however, that significant opportunities will be available at an earlier stage within the central area, where there is a quantum of Council owned land and where there is development pressure. In response to this a core area plan has been prepared and is included within section 7.

The final boundary decision will be based on how best the Climate Resilience Zone can lever policy and finance.

6.2 Naming the Zone and Branding

The working title for this strategy was originally Climate Resilience Zone. The strategy is not for a “Park” as such, but the title was relevant in the sense that a “Country Park” or “National Park” are places encompassing multi-ownerships and land use types.

This is a strategy for a sub-regional area containing a range of measures supporting mitigation, adaptation and sequestration of climate change impacts. It is “a vision for a place based transition to climate resilience in East Lothian” hence the new title of ClimatEvolution.

There could be a strapline to this which emphasises the local identity, celebrating an industrial past and a “clean future” which could be “from coal to carbon neutral”, Community consultation in the past has revealed a pride in the industrial heritage which should be celebrated within the branding of the climate transition area.

Once feasibility gets underway, creating a brand will be important in engendering community and agency buy-in to the strategy. The benchmarking examples (section 9) highlighted the importance of a clear and engaging branding, although there are pitfalls to creating a great brand which captures imagination and is without the appropriate supportive infrastructure. Timing needs to be considered. Branding will crystallise the idea of the Zone within the imagination, promoting a positive image and inviting experience. This will promote confidence, attract investment and attract visitors.

6.3 Land Ownership and Partnership

Delivering proposals such as these may ultimately be most influenced by government policy. How the government intends implementing its Climate Change (Emissions Reduction Targets) (Scotland) Act 2019 Bill remains to be seen.

One of the announcements alongside the Bill has been a new farmer-led initiative to drive low-carbon, environmentally sustainable farming practices which will include drainage management; an issue that was raised for this area by several stakeholders. Alongside other water management measures on a sub regional scale this could engender real change.

The vision can be one means by which opportunities, including commercial opportunities, can be identified. This can offer multiple benefits including those that help deliver against climate policy objectives.

Land ownership could be a barrier to delivering real change. Much can be done to maximise the Council owned land, as set out within this document, and the Area Design Framework for Greater Blindwells is at an early enough stage for the emerging plans to take account of the strategies. Other land required to deliver these proposals such as the Water Park is in private ownership. Some of the land shown within the strategy is already being promoted for new development. The government stated in parliament that:

“the evidence shows that the global cost of inaction far outweighs the cost of action. Future generations will end up paying even more if we fail to take action now”

(Roseanna Cunningham, Cabinet Secretary for Environment, Climate Change and Land Reform)

and has set out a commitment:

“to remove “obstacles” that may in the past have prevented change happening at a faster pace.”

(Roseanna Cunningham interview with the BBC, 12 August 2019)

The degree to which the Government is willing to do this is currently unknown. The Council will need to decide what stance it will take regarding any further development in this area at the expense of providing blue-green infrastructure which can mitigate climate impact and how best to protect their position.



- - - - Climate Resilient Zone
- [Grid] Climate Resilient Zone Core Area - as defined at the outset of study
- Allocated development sites within the adopted LDP (2016)
- Safeguarded development site within LDP (2016)

fig. 23: Boundary considerations



fig. 24: Proposals for a geothermally heated Lido within Greater Blindwells

Greater Blindwells is a safeguarded site; to date, there has been preliminary technical work alongside capacity testing and the establishment of principles for what kind of “Place” this should be.



fig. 25: Greater Blindwells preliminary testing



fig. 26: Healthy places approach underpinning proposals for Greater Blindwells

6.4 Timings

Timing and the sequence of delivery could be an issue to achieving some of these proposals, particularly those around shared infrastructure, Greater Blindwells and Cockenzie.

Having a Climate Resilience Zone strategy in place, however, allows easier delivery of projects as and when opportunities arise. The watercourses, for example, and the Bankton adit reopening, will ultimately need to cross the A1 and railway line as and when upgrading is delivered and will require culverting underneath it. With that knowledge, and should these networks be upgraded first, this could be accommodated at that time even if the watercourse work can't be delivered in tandem.

It will therefore be important to keep a strategy refreshed and updated, with a legacy of support handed down through Council changes of management.

6.5 Management of the Climate Resilience Zone

There are several options for how the Climate Resilience Zone is managed which include:

- The Climate Resilience Zone has no special status within the Council, it forms part of the Local Development Plan with the strategy adopted as Supplementary Guidance;
- The Climate Resilience Zone is under ELC control but answering to an interorganisational board;
- Control of the Climate Resilience Zone Strategy is managed by a Steering Group consisting of statutory stakeholders and Area Partnership representatives, chaired by East Lothian Council. Ring-fenced funding structures using money generated by geothermal energy to spend within the Climate Resilience Zone area and special planning powers for enforcement.

Ultimately there needs to be robust enough policy and management to ensure delivery of the aims of the strategy. This can be progressed once the Strategy is adopted.

7. The Core Area

7.5.1 Baseline

The core area lies bounded between Tranent, Prestonpans, the edge of Cockenzie and the edge of Blindwells. It includes the St Joseph's School site, Meadowmill Sports Facility and the southern edge of Cockenzie, all under Council ownership. The historic Waggonway runs through it and is divided by the A1 and the ECML. It is on the Jacobite route which is promoted through signage and contains the viewing pyramid for the Battle of Prestonpans. It also contains one of the sites that preliminary assessment reveals as being good for sinking a geothermal borehole.

The baseline plan shows the existing environment; within the eastern area the area is fragmented, with transport corridors isolating areas. Meadowmill is disconnected and hidden by planting, exacerbated by the viewing pyramid being located to the north of it. At the end of this route lies the existing A1 underpass connection to Tranent which could be improved, particularly as this connection will become part of the Strategic Active Travel Corridor (SATC).

To the east of this, divided by a former driving range, is St Joseph's. The A198, which crosses the railway line close to here, forms the eastern boundary and divides it from Blindwells. The northern area currently suffers from surface water flooding.

7.5.2 Strategy

Delivery is dependant on a number of issues including land ownership. There is the benefit of large areas of Council ownership within the core area however capital projects can be difficult to promote within a climate of reduced budgets. The key to success will be partnership working, including with the Scottish Government and Key Agencies. There is an opportunity to demonstrate an exemplar of collective working here, applying climate change policy whilst showcasing sustainable placemaking. Whilst remaining high level, proposals for this core area which are part of this strategy include:

Theme 1| Access and Movement

The western gateway arrival point will be relatively close to here at Prestonpans; this will connect well to Meadowmill via the SATC.

The onward connection to Tranent would benefit from significant improvements to the railway underpass encompassing lighting and colour as well as surface improvements

Theme 2| Water Environment

There is potential to implement a sub-regional drainage strategy here that better manages surface water and localised flooding, relieves demand on the combined sewer, and if linked to a new mine water abstraction and treatment facility associated with a geothermal network, could also help manage mine water rebound and protect material assets. Synergistic benefits include the improvement of habitat and offering a framework for enhanced active travel routes. The reopening of the Bankton Adit could provide a foundation for this project.

The Bankton adit starts at Meadowmill. An engineering survey has been provided and the route and source is shown. Further technical study is required to determine the methodology for revealing the water course and understand the full constraints and opportunities; there will also be the challenge of treatment, and where it is located under the railway line. Water will be warm at the source and there will be opportunities to work with levels and deviate widths through natural and canalised sections. This gives opportunities for a varied and playful planting scheme which acts as a linear botanic garden, connecting at its northern point with the John Muir Way. Creating species palettes which have links to John Muir's interest as a Botanist could add a further layer of interest and strengthen coastal links.

The geothermal borehole gives opportunities for providing energy to Meadowmill and to St Joseph's. Flooding north of St. Joseph's needs further study as part of the subregional water strategy which could resolve it; there are opportunities to open up the watercourse system within that location and which will link to the new Meadowmill Water.

Theme 3| Culture Heritage and Leisure

Issues of welcome and isolation around Meadowmill could be addressed through thinning of planting and allowing direct visibility to the sports centre alongside improved signage, lighting and environmental improvements. There are opportunities for ground source heat pumps under a new car park to help with the power to the centre which, whilst requiring significant capital cost, will save on revenue.

Planting removed could be compensated for by additional planting on the western boundaries.

There is potential for a new building acting as a National Climate Resilience Centre, the front welcoming and distinctive face of the Park, and unique in its design, which should be aligned with the geothermal opportunity sites.

Theme 4| Greenspace and Biodiversity

Opportunities for planting need to be carefully designed to avoid further fragmentation of the area. Hedgerows along the SATC and tree planting around edges and the A1 are shown on the plan. The watercourses open up opportunities for native riparian plant mixes which can link together to form green corridors

Theme 5| Strong communities, regeneration and enterprise

Proposals for a high-quality hotel training school and associated market garden align closely with the vision for strengthening communities and giving employment opportunities, meeting the shortfall of good accommodation within the area. A variety of training opportunities can be offered and at all levels of skill within hospitality.

Whether at St. Joseph's School or elsewhere, the former school is a real opportunity site in that:

- the listed building provides an instant sense of establishment;
- there is a large area of land available with it;
- the location is excellent: close to rail services and the A1 and with the opportunity for good links to QMU and Edinburgh College;
- proximity to Meadowmill;
- close to what will be the biggest population cluster allowing local use of the facilities;
- current issues of flooding should be alleviated through the subregional water management systems which this strategy seeks to put in place.



fig. 27: Baseline

Possible locations for an attractor building:

A This location is prone to flooding - opportunity for an elevated building showing a potential scenario for dealing with climate change

B Location B would require reconfiguration of Meadowmill Sports Centre, but is within easy access for Prestonpans Station. It is closest to the source of geothermal energy.

C This third location gives an anchor to the Cockenzie regeneration site, utilising potential hydro power from Meadowmill Water, as well as geothermal energy. It is well located for links to training and education in new technologies.

Key:

-  Route improvements to improve safety and legibility
-  New approach to St Joseph's
-  Proposed trees
-  Existing trees
-  Improvements to Meadowmill Sports Centre
-  Council ownership
-  Areas prone to flooding
-  Urban areas / hard surface
-  Green space / agricultural land
-  Waggonway route
-  Core paths
-  Proposed Segregated Active Travel Corridor
-  New development boundaries
-  Overhead transmission lines
-  Proposed path along Meadowmill Water
-  Proposed reinstated watercourses (indicative locations, subject to further study)



fig. 28: Core Plan

There is an opportunity within this location for an attractor building such as a National Climate Resilience Centre

Further opportunities to improve the Meadowmill Water resource should be explored, including diverting flow from the St. Germain's catchment to alleviate flooding and diverting flows from the existing mine water treatment facility at Blindwells.

Extraction of mine water at location B provides geothermal energy opportunities. Treated water from the geothermal facility would discharge to Meadowmill Water, a new watercourse on the route of the existing Bankton Adit Culvert, between locations B and C, discharging to the Firth of Forth.



Montage image - an attractor building promoting climate resilience



Montage image - re-naturalised Bankton adit

Opening up the Bankton adit as part of a linked regional sustainable urban drainage system gives opportunity for:

- active travel connections,
- a linear mini 'Eden Project with ecological links to the botany of John Muir;
- energy supply through micro-hydro;
- sustainable surface water drainage and reduction in flood risk;
- opportunity for geothermal extraction and treatment of mine water;
- relieves pressure on existing watercourses;
- connections to a de-culverted Meadowmill Water.

Restructure the landscape at Meadowmill Sports Centre to create a welcoming space:

- Increase visibility by removing some trees
- Offset trees lost by planting along the western boundary of Meadowmill
- Add lighting and signage to improve safety
- Environment improvement potentially including a new/improved car park with ground source heat pumps supplying energy for the building;
- Increase the attractiveness and safety of active travel links.



St Josephs School: an opportunity Site



Precedent: Kitchen/ education garden at Dumfries House

Opportunity for the creation of a kitchen garden linked to a training hotel which:

- Provides employment and skills training in all aspects of hospitality for members of the local community
- Educational opportunity promoting healthy eating and growing food
- High end hotel attracting tourists to the area
- High end restaurant attracting visitors/residents from the city of Edinburgh

Additional planting along core path provides opportunity for:

- Creation of bee pollinator routes
- Improved walking/cycling/running paths

Upgrade the existing underpass for improved safety and connectivity, and to activate the space:

- Vandal proof / motion activated lighting
- Artwork
- Signage
- Colour

Harry's Burn flowing through Tranent in a northerly direction connects to St Germain's Burn near the ECML, and is known to flood in the vicinity of St Josephs. Flood mitigation opportunities may be provided by diverting some flow, during extreme events, to Meadowmill Water.



Existing underpass under the A1 north of Tranent

8. The Action Plan

8.1 Phased Delivery

A series of almost 40 projects has emerged from the strategy and each project sits within one of the five overarching themes of: 1) Access and Movement 2) The Water Environment 3) Culture, Heritage and Leisure 4) Greenspace and Biodiversity 5) Strong Communities Regeneration and Enterprise.

The spatial realisation of these projects is outlined in section 5 in the form of strategic maps. However, a key element of the strategy is to determine how these projects should be taken forward, both in the form of practical steps to implementation, but also in terms of the sequence in which projects should occur, as well as their relationship to each other.

All of the projects are linked to each other across time. Some projects should come forward in tandem with and as a consequence of major development within the area; others need to come forward much sooner than that and will start to establish an identity for the Climate Resilience Zone.

In addition to dependencies between projects over time, they also influence each other across the five different themes: for example, a project under the theme of water management may also provide culture and leisure opportunities whilst simultaneously improving biodiversity and providing an active travel link. These multiple benefits are actively sought through the strategy.

Fittingly, the Scottish-American naturalist John Muir who was born in Dunbar and loved the East Lothian Landscape aptly illustrates the interconnected nature of this strategy in the following quote:

“When we try to pick out anything by itself, we find it hitched to everything else in the universe.” John Muir (1911) My First Summer in the Sierra.

The strategy is therefore broadly split into three phases:

- short term: includes projects which should be implemented within the next 10 years;
- medium term: includes those projects which will follow on in the subsequent 10 to 20 years;
- long term: illustrates how projects embed themselves and develop over longer timescales.

8.2 Funding Overview

Funding Strategy

The East Lothian Climate Resilience Zone offers a unique opportunity to create high quality blue-green infrastructure, utilising new technology but at the same time building on the historic character of the area, which is bounded by historic settlements and areas of both opportunity and deprivation.

The business plan and funding package for the Zone must address two issues:

- How will capital funding be procured?
- How will the ongoing revenue costs of the Zone be met?

The proceeding sections set out the strategic approach to developing a funding package. In keeping with the overall scale of this document, the narrative provides a framework, but one which will have to be further developed and refined as the proposition becomes clearer over time.

Capital Funding

The estimated capital cost of the proposed strategy is several million pounds—this is clearly a significant cost which is unlikely to be provided by a single funder. This in itself is not an issue as the multi-faceted nature of the Zone lends itself to a range of different funding sources - the key to securing funding is therefore to ensure that the strategy clearly elaborates on the need for the Zone (i.e. what problems / opportunities is it aimed at solving / realising), the type and scale of outcomes which it will deliver and, by extension, the main funding sources which should be targeted. This mapping exercise is an early step in progressing the project beyond the initial Action Plan.

Whilst multiple funding sources are available, our recommended strategic approach is to target a small number of major funders, supported by targeted applications for supplementary funding to realise specific elements of the infrastructure. The proposal to target a small number of high value funders is intended to minimise the risks of conflicting objectives, which increases in line with the number of different funding sources being applied to. This strategic approach is elaborated in more detail below.

Funding Applications

Any bid for major capital funding will require the proposals for the Zone - both in terms of technical deliverability and the business case - to be further worked up before an application is lodged, particularly for larger funding streams where detailed technical, financial and governance information will be required in any submission.

The next step from a funding perspective is therefore to raise money to carry out the necessary feasibility work. The Action Plan which accompanies this study incorporates a Priority List of recommended feasibility studies to be progressed, together with an indication of the most appropriate funder / commissioning body.

Major Funding Sources

There are several major funding sources which can be applied to, ranging from the Scottish Natural Heritage administered Green Infrastructure Fund to National Lottery funding streams such as the Climate Action Fund. In October 2019 the Scottish Government announced “Scotland’s Green Investment Portfolio” with a call for projects for a 300-billion-pound portfolio. There is also the community based Climate Challenge Fund.

Applying for funding though is a time-consuming and resource intensive process - a focused and targeted approach is required. Therefore, once the technical development and business case work is in place, a mapping exercise will be undertaken to further refine the list of major funding sources in the Action Plan. The list of eligible funds will then be assessed and prioritised based on a set of agreed criteria, which are likely to include:

- alignment of funding party requirements with the Climate Resilience Zone ‘Themes’;
- size of the fund;
- probability of success;
- timescales for bid submission and award;
- expenditure phasing;
- outcomes required; and
- any conflicts with other funding sources.

Once the prioritised list of funds has been developed and agreed, funding applications can be prepared.

Supporting Funding Sources

In parallel to developing the 'Major Funding Plan', an equivalent mapping exercise will be undertaken to prioritise and apply to supporting funding sources which could be used to deliver specific elements of the infrastructure. There is a plethora of suitable funding streams available and thus the prioritisation criteria will have to be carefully scoped to ensure bids are only submitted to funds where:

- there is a reasonable chance of success and the scale of funding likely to be provided makes the bidding effort worthwhile; and
- the application of the funding will contribute directly towards the Vision and Themes for the Zone, otherwise there is a risk of diverting attention and resources to ancillary activities.

Whilst the overall funding strategy will be managed by ELC, there are opportunities within this stream of work to involve other public sector organisations, charities and businesses in bidding for relevant funding pots. These opportunities will be developed as part of the initial mapping and prioritisation exercise.

Revenue Funding

The proposed Climate Resilience Zone will be a signature investment in the area, offering a high-quality blue-green and built environment. Maintaining this commitment to quality will require ongoing revenue funding. There is a requirement at planning stage to think more widely about how the long-term sustainability of the Zone will be ensured.

There may be five broad sources of revenue funding:

- direct funding from the Council through its annual budget setting process;
- rental charges for land and properties within the Zone;
- user charges for e.g. Parking, bike hire etc;
- developer contributions; and
- sponsorship.

As the business case for the Zone begins to crystallise, it will be necessary to make a robust estimate of ongoing operational and maintenance costs and, as with capital funding sources, map and priorities which sources of funding will be pursued and, crucially, how this will be done. Community volunteer resources and opportunities should also be considered.

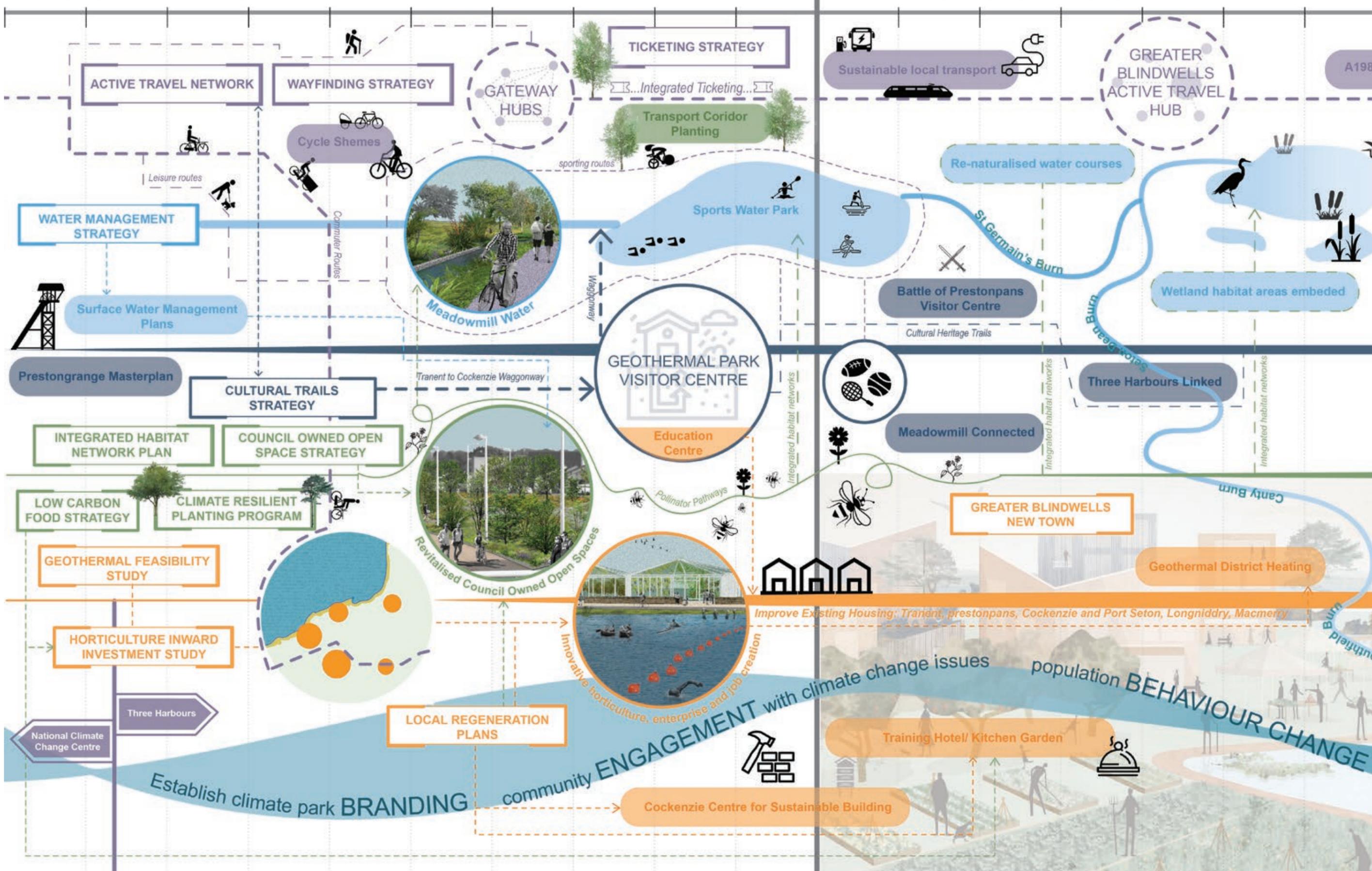
8.3 The Action Plan

The Action Plan is illustrated over the following pages via the use of a time line which outlines the project phasing as well as the inherent and complex interconnected nature of the strategy. Colours are used to illustrate which theme each of the project sits within and each theme is represented by a connecting line which runs through each phase over time.

This time line is supported by a series of tables which provide details of the individual projects under each of the five key themes. These tables detail the key steps to delivery, which phase each project sits within, the priority level of the project, as well as outline costs and potential funding sources.

Short Term → up to 10 Years

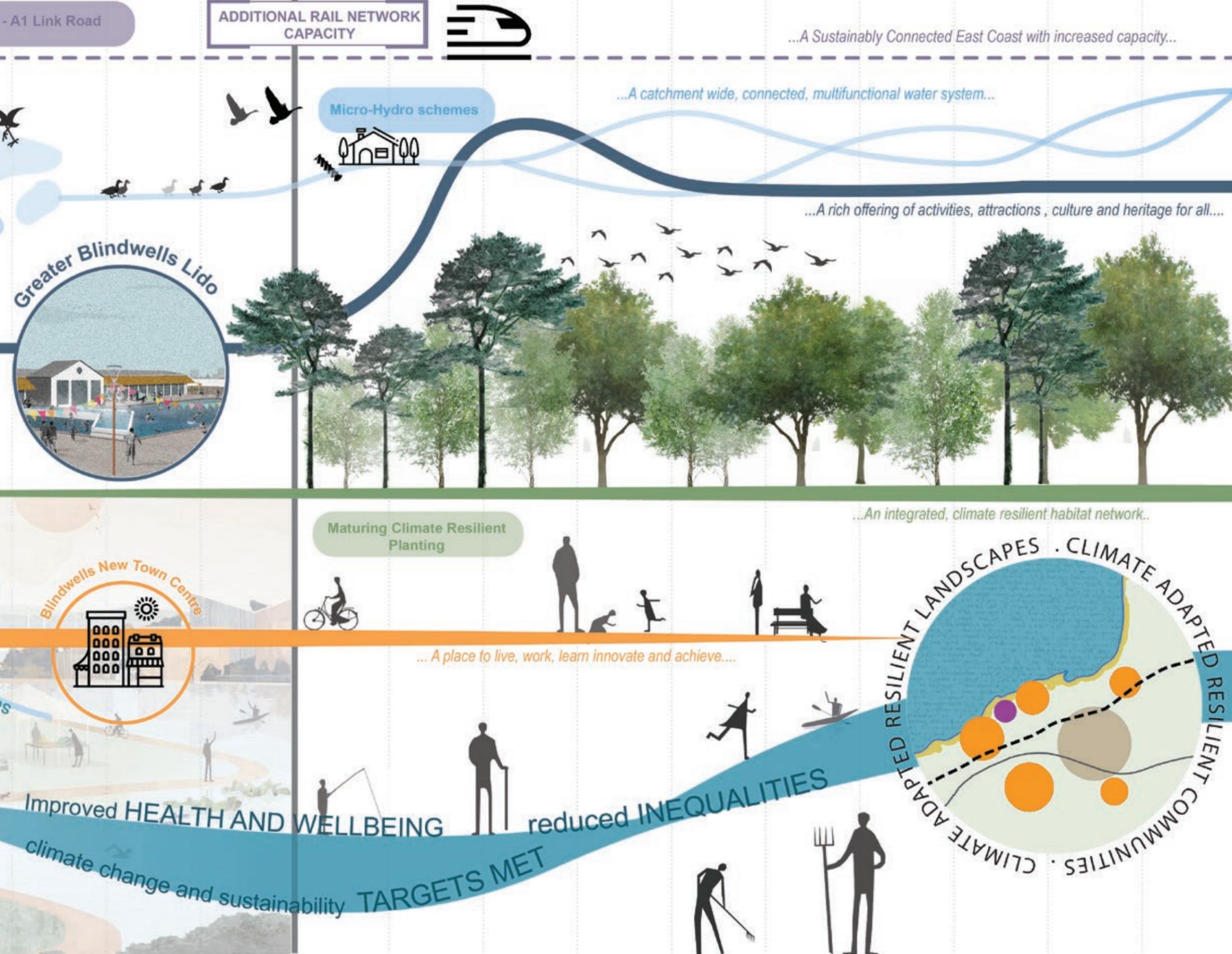
Medium Term → 10-20 Years



20 Years

Long Term

20-30 Years



“When we try to pick out anything by itself, we find it hitched to everything else in the universe.”

John Muir (1911)

“For those saying this is too much, and too expensive, the evidence shows that the global cost of inaction far outweighs the cost of action. Future generations will end up paying even more if we fail to take action now”

Roseanna Cunningham
Statement to the Scottish Parliament, 14
May 2019

fig. 29: Action Plan Timeline

Theme 1: Access and Movement

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Paths For All	Outdoor green space or accessible countryside should be within easy walking distance of every home. All abilities need to be considered within the pathway network. They should be suitable for aging, less able demographics, and with safe routes to school for young children, to encourage walking and cycling. Other opportunities are set out within 5.2.2	Prior to establishing new routes for Active Travel provision, review existing path provision against Paths for All (PFA) requirements. Identify opportunities for play and seating, ensure all paths are maintained to a high standard. Reduce excessive slopes to facilitate access for elderly and impaired. Ensure PFA opportunities are included within the Active Travel Network enhancements discussed below. Explore options for delivery as part of the delivery of the wider network. Barriers to delivery: available funding and suitable opportunities	High	Short Term	£2-£10 million	Funding bodies and funds <ul style="list-style-type: none"> Sustrans - Places for Everyone / Active travel repair stations / Art Roots / Pocket Places / Regional Transport Partnership support / School Cycle and Scooter Parking Grant / Strategic Partnerships / Street Design / Workplace engagement
Active Travel Network including routes between schools, the water park, visitor centres and other relevant attractions.	Create an integrated network of paths and cycleways which encourage active travel and support a wide range of leisure activities. These routes should be fully connected to and through both existing and proposed cultural, heritage and leisure assets as well as existing and new settlements. The network should be designed to meet the wide range of needs of different user groups including commuters, residents and visitors from neighbouring towns/cities or further afield and should include: <ul style="list-style-type: none"> Commuter routes - fully segregated routes connecting settlements and providing direct routes to places of work/transport hubs. This is initially to follow the route of the proposed Active Travel Corridor but to be re-routed through Tranent and further integrated with a wider Active Travel Network; Leisure routes - fully segregated routes linking cultural and leisure attractions as well as linking to the coastal John Muir Way and National Cycle route 76; Sporting routes - clearly marked long distance routes (e.g. 50km, 80km, 100km) which may be shared with cars but must have a suitable high quality signing and surfacing and space for individual or groups of road cyclists. 	Step 1: Deliver stage 1 of the Newcraighall to Dunbar segregated active travel corridor. In parallel, conduct a feasibility study for the routing of the rest of the Active Travel Network and align with the outcomes of the East Lothian Access Study (STAG) Appraisal. Explore options for funding for the delivery of a wider network. Step 2: Secure funding for delivery and implement phased delivery of the wider active travel network hierarchy. Barriers to delivery: <ul style="list-style-type: none"> Early engagement with land owners required to allow a joined up network through areas not under Council ownership. Must be supported by the Gateway Hubs, Blindwells Active Travel Centre and Sustainable local transport connections for maximum successful delivery; Technical difficulties of providing this in the context of vehicular and public transport corridors (crossing the A1/East Coast Mainline/A199 and A198). These will be addressed in the multi-mode masterplan and STAG 	High	Short Term	Step 1: £2 - £10 million Step 2: £2 - £10 million	<ul style="list-style-type: none"> Cycling Scotland - Cycle Friendly Programme / National Monitoring Framework / Play Together on Pedals Energy Saving Trust - E-bike grants and loans European Regional Development Fund - Low Carbon Travel and Transport Challenge Fund Paths for All - Smarter Choices, Smarter Places / Community Paths Grants ScotRail - Cycle Fund Green Infrastructure Community Engagement Fund European Agricultural Fund for Rural Development
Gateway Hubs	Development of 3 new 'gateway hubs' comprising high quality cycle facilities and good public transport connections. This should include warm waiting areas with seating, toilets and Real Time Information for connections. For cyclists there should be secure, under cover cycle Parking with changing facilities, cycle hire of a range of cycles (electric, cargo bikes, adapted for disabilities, mobility scooters) and bike maintenance facilities. These are to be centred around existing rail and bus (sustainable travel) connections at Longniddry, Prestonpans and Tranent and to be fully integrated within the wider Active Travel Network and proposed Greater Blindwells interchange station. Strengthen bus connections. This could be a focus for MaaS.	Step 1: Conduct a feasibility study to explore the locations, capacity, land take, potential for pump priming, and alignment with the outcomes of the East Lothian Access Study (STAG) Appraisal and Network Rail proposals for enhancement of the rail network. Step 2: Delivery of the hubs in line with the initial phases of the delivery of the Active Travel Network Barriers to delivery: <ul style="list-style-type: none"> Early engagement with land owners required 	High	Short Term	Step 1: <£2 million Step 2: £2 - £10 million	<ul style="list-style-type: none"> National Lottery Heritage Fund through the Landscape Partnerships Grant Programme City Region Deal Partners <ul style="list-style-type: none"> Sustrans Cycling UK
Greater Blindwells Active Travel Hub including new rail halt	A new main travel hub, including a new rail halt, directly serving the Greater Blindwells New Town and Cockenzie employment quarter as well as indirectly serving the wider Zone area via links with the Active Travel Network. The hub provides all of the same facilities as the gateway hubs but on a larger scale as well as providing Park and Choose facilities. This centrally located hub also provides training and employment opportunities for bike maintenance and safe riding courses as well as providing physical office space for transport and active travel related organisations and charities. This would be a further focus for MaaS.	Step 1: Conduct a feasibility study to explore the location as part of the development proposals for Greater Blindwells, capacity, land take, potential for pump priming, and alignment with the outcomes of the East Lothian Access Study (STAG) Appraisal and Network Rail 4 track proposals. Step 2: Delivery of the central hub in line with the initial phases of the delivery of Blindwells 2. Barriers to delivery: <ul style="list-style-type: none"> Dependent on the design, phasing and delivery of Greater Blindwells. 	High	Medium Term	Step 1: <£2 million Step 2: £2 - £10 million	<ul style="list-style-type: none"> Cycling Scotland Cycling Without Age Scotland Living Streets Scotland Network Rail Lothian Buses

Theme 1: Access and Movement (continued....)

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Sustainable Local Transport Connections	Develop the existing bus network and/or provide a new 'hopper bus' to provide frequent local links between the settlements and attractors within the Zone area as well as links to the new Gateway Hubs and Active Travel Centre for onward national/international travel. This provides a sustainable, integrated travel option during inclement weather and for less able users. This is critical for supporting the Active Travel Network and meeting inclusivity needs of multiple users of the Zone area.	<p>Step 1: Conduct a feasibility study which outlines suitable routes linked with the development proposals for Greater Blindwells, the outcomes of the East Lothian Access Study (STAG) Appraisal and Network Rail proposals.</p> <p>Step 2: Delivery once facilities within and between settlements have been developed.</p> <p>Barriers to delivery</p> <ul style="list-style-type: none"> Must be timed to coordinate with improved facilities and provision of destinations within the Zone area to secure patronage. 	High	Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p>	
Provision of Bikes and space for electric car sharing hubs	Establish the number and type (including electric, cargo and adapted bikes) of cycles required within the Zone area to be supplied at the Gateway Hubs and at the central Greater Blindwells Active Travel Hub. Consider providing free bikes at the start of the scheme and to local residents or those on a lesser income to incentivise use. Consider the ability of the bikes to travel beyond the Zone boundary.	<p>Step 1: Establish the cycle resource required including number and type of bikes as well as establishing hire costs and incentives. Explore funding options for the initial provision of bikes within the Zone area as well as options for longer term investment for the continued maintenance and running costs. Explore the potential to link to City of Edinburgh Cycle Scheme with the operator SERCO. Explore electric car share partnership options.</p> <p>Step 2: Provision of bikes and electric car share hubs to be coordinated with the delivery of the Gateway Hubs, Active Travel Hub and Active Travel Network.</p>	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	
A198 - A1 Link Road	A new link road over the A198 and railway which negates the need for the current level crossing and allows for enhanced north-south active travel connections through Greater Blindwells to the A1. This should be linked to the new transport hub and rail halt for the new town and the former Cockenzie Power Station site.	<p>Step 1: Conduct a feasibility study and align proposals with the East Lothian Access Study (STAG) Appraisal and proposed Network Rail upgrade as well as the proposed Active Travel Network</p> <p>Step 2: Delivery of the link road</p> <p>Barriers to delivery</p> <ul style="list-style-type: none"> Timing dependent on Greater Blindwells being delivered 	Medium	Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: >£10 million</p>	
Way Finding Strategy	Way finding strategy to be produced and implemented as part of the Zone's branding and identity. Way finding is to take two forms: Physical: Active Travel Network to contain clear and comprehensive way marking of all routes via signposting and the provision of physical maps as well as the inclusion of orientation boards in key settlements, gateway hubs and at Zone attractions. Digital: website and app mapping all routes, transport networks and attractions within the Zone.	<p>Step 1: Production of a strategy document which outlines a coherent way finding strategy which meets accessibility and disability requirements and is linked with the Zone branding.</p> <p>Step 2: Initial delivery of the strategy in line with the creation of the Active Travel Network, Gateway Hubs and central Active Travel Hub.</p> <p>Step 3: Ongoing delivery as attractions within the Zone area are developed.</p>	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: <£2 million</p>	
Ticketing Strategy	Ticketing Strategy to provide linked tickets/day or 'hopper' tickets between different sustainable transport options from areas outwith the Zone and travel between attractions/settlements within the Zone. Tickets may be linked to free or discounted entrance for attractions within the Zone as well as other attractions in the wider East Lothian area to encourage the use of sustainable transport over cars. Pricing of tickets should be competitive with the use of a car to provide incentives for families or groups to use sustainable transport options.	<p>Step 1: Production of a strategy document which outlines the ticketing strategy including engaging with ScotRail, Lothian Buses, operators of attractions and cycle hire within the Zone area to provide integrated ticketing across different providers and between different modes of transport.</p> <p>Step 2: Initial delivery of the strategy in line with the creation of the Active Travel Network, Gateway Hubs and central Active Travel Hub.</p> <p>Step 3: Ongoing delivery as attractions within the Zone area are developed.</p>	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: <£2 million</p>	
Provision of Additional Rail Network Capacity	Ongoing nationally led initiative which is separate to this strategy but influences the strategy in the long term and is supportive of a positive modal shift away from private car use and therefore climate adaptation.	N/A	N/A	Medium to Long Term	N/A	

Theme 2: The Water Environment

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Holistic Sub-Regional Water Management Strategy	<p>Produce a holistic water strategy for the Zone area at a sub-regional area which includes the wider catchment areas of the watercourses within the Zone boundary. This is to include proposals to:</p> <ul style="list-style-type: none"> Gain an understanding of catchment wide flood risk; Separate surface water, mine water and groundwater; identify areas where micro hydro power generation would be possible (e.g. potential along the Bankton Adit); Identify borehole locations for provision of geothermal energy resource; A range of smaller scale strategies for managing surface water within existing settlements e.g. disconnections from combined sewer network; Establish a strategy for managing water through Greater Blindwells; Identification of suitable areas for wetland nature reserve creation and incorporating SUDS for the proposed development at Greater Blindwells; Identify suitable location for outdoor leisure / water park. 	<p>Step 1: Compile the strategy as a high priority as it is required to inform subsequent projects which are central to the vision for the Zone.</p> <p>Step 2: Undertake stakeholder consultation - given the holistic nature of the strategy there will be a wide range of stakeholders. The proposals within the strategy are key to the successful implementation of the Zone vision.</p> <p>Step 3: Implementation of the strategy via the delivery of the various projects stemming from it.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Early engagement with land owners and other stakeholders required to allow a joined up blue/green network in areas not under Council ownership. 	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: >£10 million</p>	<p>Funding bodies and funds</p> <ul style="list-style-type: none"> CREW - Scotland's Centre of Expertise for Waters SEPA - Water Environment Fund The National Lottery Community Fund - Climate Action Fund <p>Partners</p> <ul style="list-style-type: none"> Land Owners SEPA Scottish Water
Surface Water Management Plans for Existing Settlements	<p>Produce management plans for dealing with the surface water within existing settlements of Tranent, Cockenzie and Port Seton, Longniddry and Prestonpans. These are to include opportunities for retrofitting of surface water management via the use of rain gardens, bio-retention systems, permeable surfacing wherever possible and retrofitting of existing sewers.</p>	<p>Step 1: Compile the plans for each of the towns as part of the Holistic Sub-Regional Water Management Strategy.</p> <p>Step 2: Implementation of the recommendations within the plans prior to be undertaken prior to or in line with the wider Greater Blindwells development - this is key to supporting the regeneration of the existing communities in line with the incoming Greater Blindwells New Town. Implementation can be undertaken in tandem with the proposed Cockenzie Centre for Excellence in sustainable building providing local jobs and training opportunities.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Funding required for retrofitting within existing towns - there is a funding opportunity via grants aimed specifically at regeneration, community engagement and reducing inequalities. 	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	
Re-naturalisation of Watercourses	<p>To re-naturalise existing watercourses including: Southfield Burn; Canty Burn; Seton Deans Burn; St Germain's Burn. These watercourses are to be lined (separate surface water from mining water), re-meandered and planted with appropriate trees and wetland planting to encourage biodiversity both within the watercourses and along their edges. The provision of recreational paths are to be explored along these routes as appropriate.</p>	<p>Step 1: Conduct a feasibility study as part of the Holistic Sub-Regional Water Management Strategy, which explores how re-naturalised watercourses can be delivered in relation to the proposals for Greater Blindwells New Town (through which the water courses run), as well as how the watercourses can be linked with the Active Travel Network to form part of the wider leisure and habitat improvements within the Zone area.</p> <p>Step 2: Implementation of the recommendations within the plans to be coordinated with the early phases of Greater Blindwells development - providing a robust and resilient blue/green network within which subsequent phased development can occur over many years.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Early engagement with land owners and other stakeholders required to allow a joined up blue/green network in areas not under Council ownership. Delivery phased over a long period due to long term delivery of Greater Blindwells. 	High	Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	

Theme 2: The Water Environment (continued....)

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Re-open Bankton Adit Culvert	<p>Create a new surface water course 'Meadowmill Water' by re-opening the culvert leading from the Bankton Adit. The watercourse is to incorporate the opportunity of using geothermal energy to provide different water temperatures and support a variety of different flora as an innovative and playful experience. Consideration of water quality of this source is required, which may lead to implementation of natural treatment measures, such as reed beds for pollutant removal, prior to establishing flow to the water environment.</p> <p>Consideration of the ecological implications of altering surface water temperatures is required with proposals as to how this can be achieved in a controlled way (e.g as achieved at the Eden Project) to be provided within the feasibility study.</p>	<p>Step 1: Conduct a feasibility study as part of the Holistic Sub-Regional Water Management Strategy, which explores how the culvert can be re-opened in coordination with delivery of the Cockenzie Power Station Masterplan proposals as well as the geothermal opportunity (see 'Theme 4 project: Geothermal Feasibility Study' for details).</p> <p>Step 2: Delivery of the proposals as a high priority project within the Zone area.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Coordination required with Cockenzie Power Station Masterplan. The project may also be influenced by major infrastructure in association with Greater Blindwells interchange station. 	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	
Micro-hydro power	Implement micro hydro where appropriate and consider its usage as a means of suppling more isolated homes not located in major settlements or suited to district heating.	<p>Step 1: Conduct a feasibility study as part of the Holistic Sub-Regional Water Management Strategy, which explores suitable micro-hydro power locations</p> <p>Step 2: Delivery of the proposals as part of the sustainable energy options within the Zone.</p>	Medium	Medium/ Long Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	
Wetland habitat areas	Creation of wetland habitat areas forming a new nature reserve within the Zone which may also incorporate a more naturalistic SUDS design for the surrounding Greater Blindwells development.	<p>Step 1: Conduct a feasibility study as part of the Holistic Sub-Regional Water Management Strategy, which explores the use of SUDS as a means of wetland habitat creation in the area to the north of Greater Blindwells.</p> <p>Step 2: Delivery of the proposals which should be linked with the Active Travel Network (where this does not conflict with habitat requirements).</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Early engagement with land owners and other stakeholders required to allow a joined up blue/green network in areas not under Council ownership. 	Medium	Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	
Outdoor Sports Water Park	Creation of an outdoor water Park area. The water Park is to include provision for boating (rowing, kayaks, pedal boards etc...) as well as cold water swimming and is to be linked with the Active Travel Network catering for Park Runs, triathlon and other long distance running/swimming/cycling training and event.	<p>Step 1: Conduct a feasibility study as part of the Holistic Sub-Regional Water Management Strategy, which explores the most suitable location and size of the water Park and the lido. This should be done in relation to the geothermal opportunity (see 'Theme 4 ' for details). it should also explore funding opportunities and include a long term funding/management plan which explores the possibility of funding through the geothermal resource.</p> <p>Step 2: Delivery of the water Park (medium priority) and Lido (high priority)</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Successful running of the water Park is reliant on long term funding mechanism. 	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: >£10 million</p>	
Lido and Water Park	A geothermally heated lido as part of the core for Greater Blindwells New Town.	<p>Step 1: Conduct a feasibility study as part of the Holistic Sub-Regional Water Management Strategy, which explores the potentia location for a geothermally heated Lido within the Greater Blindwells site.</p> <p>Step 2: Delivery of the proposals which should be linked with the Active Travel Network.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Successful running of the water lido is reliant on long term funding mechanism. Heating of the lido is dependent on the geothermal resource 	High	Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: >£10 million</p>	

Theme 3: Culture, Heritage and Leisure

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
National Climate Change Centre	Hold an international design competition for the provision of a new national climate change centre built using sustainable construction methods, with carbon neutral maintenance systems, powered by geothermal energy. This should be an exemplar building, showcasing the best in sustainable architecture. It should be integrated with the Active Travel Network and form a major part of the Zones branding strategy, and it should be linked with an education centre (see Theme 5 for details).	<p>Step 1: Feasibility study to identify a suitable location on Council owned land and the required land take for the centre which is to be developed in line with the Geothermal Feasibility Study (see Theme 5).</p> <p>Step 2: Hold international design competition.</p> <p>Step 3: Delivery of the Centre as a high priority, core project which is central to the vision of the Zone. This will be a major attraction within the Zone area and should be implemented as soon as possible as an initial draw whilst other improvements and attractions come into being.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Location to be suited to geothermal energy borehole and on commissioned land. To be coordinated with active travel and wayfinding strategy as well as the delivery of the Prestongrange Industrial Heritage Museum. 	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: >£10 million</p>	<p>Funding bodies and funds</p> <ul style="list-style-type: none"> Creative Scotland (via Scottish Government and National Lottery) Culture and Business Fund Scotland Historic Environment Scotland <p>Partners</p> <ul style="list-style-type: none"> 3 Harbours Arts Festival Prestongrange Industrial Heritage Museum Historic Environment Scotland National Museums of Scotland
Prestongrange Visitor Centre	Integrate the masterplan proposals for Prestongrange Visitor Centre both physically via the Active Travel Network, as well as conceptually, by working with the Prestongrange headline 'from coal to carbon neutral' as a means of story telling and promoting place identity within the Zone.	<p>Step 1: Co-ordination with key stakeholders for the Prestongrange Museum at an early stage within the development of the Zone vision to align proposals between both projects.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Dependent on delivery of the Prestongrange master plan proposals 	High	Short Term		
Battle of Prestonpans Visitor Centre	Visitor Centre for the Battle of Prestonpans to be located within Blindwells 1 and fully linked with the Active Travel Network.	<p>Step 1: Co-ordination with Blindwells 1 master plan and engagement with stakeholders.</p> <p>Step 2: Development of Active Travel Network to fully integrate Battle of Prestonpans Visitor Centre.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Dependent on the delivery of Blindwells 1. 	Medium	Medium Term	N/A	
Meadowmill Sports Centre Connectivity	Enhance the area around Meadowmill, providing connectivity to the Active Travel Network and linking this with the proposals for a training hotel and the Geothermal Energy and potential National Climate Resilience Centre. This should also consider the visibility of Meadow Mill and integration into the core Zone area.	<p>Step 1: Production of a master plan for the core Zone area which spatialises the proposals for St Joseph's Training Hotel, the Geothermal Energy and Transition Zone Orientation Centre, Cockenzie Power Station Masterplan and the links with Active Travel Network which also considers connections with Meadowmill sports centre.</p> <p>Step 2: Implementation of the master plan.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> To be co-ordinated with Cockenzie Power Station master plan and other Zone projects Early engagement with land owners and other stakeholders required to allow a joined up approach to the core Zone area on land which is not under Council ownership. It may be that some land is required at Meadowmill for the new National Climate Change Resilience Centre. 	High	Short / Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	

Theme 3: Culture, Heritage and Leisure (continued....)

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Tranent to Cockenzie Waggonway	Develop the existing historic Tranent to Cockenzie Waggonway - The route should be fully integrated with the Active Travel Network, be fully accessible and provide historic interpretation as part of the overall story of the Zone, enhancing the 'from the past into the future' message which is promoted at Prestongrange Industrial Heritage Museum.	<p>Step 1: Production of a Cultural Heritage Trails strategy (see below)</p> <p>Step 2: Detailed design for the Waggonway and its links with the proposed Active Travel Network.</p> <p>Step 3: Development of the Waggonway</p>	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: £2 - £10 million</p>	
Cultural Heritage Trails	Develop additional new circular walking/cycling routes, which form part of the Active Travel Network and focus on promoting and linking the cultural heritage of the area, telling the unique and personal stories of innovation and industrial heritage of the area including: pottery, mining, fishing, salt panning, tapestries, murals.	<p>Step 1: Production of a strategy which identifies the cultural trails and links them with the Active Travel Network, way finding strategy and Zone branding.</p> <p>Step 2: Development of the trails</p>	Medium	Short / Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p>	
3 Harbours Promotion	<p>Promotion of the use of the 3 harbours (Cockenzie, Port Seton and Prestonpans) which includes proposals to:</p> <ul style="list-style-type: none"> Support the existing annual 3 Harbours Arts Festival; A plan for the three harbours to work together as a means of enhancing and promoting access to the coast; Link the harbours with attractions along the coast and inland via the Active Travel Network. Enhance the harbours (e.g. after the precedents at Dunbar, North Berwick and Portsoy) to varying degrees to promote the coastal heritage and provide attractions in less environmentally sensitive areas of the coast. 	<p>Step 1: Production of an economic, regeneration led strategy and community consultation and engagement</p> <p>Step 2: Implementation of the strategy proposals, initially to support and promote the 3 Harbours Arts Festival and subsequently to provide enhanced connections, attractions and facilities in the three harbours.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> To be fully backed by the local communities in the three settlements and to be developed with community engagement as a catalyst for engaging communities more fully with the wider vision of the Zone. 	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: £2 - £10 million</p>	
Zone Branding	Production of a branding strategy which promotes the unique cultural and heritage identity of the area by focusing on the key positive message of 'building the future from the past'. The strategy should strengthen the existing attractors within the Zone through being part of the Zone brand. It should promote the new attractions within the context of a new future which builds upon the foundations of the past.	<p>Step 1: Production of a branding strategy which ties into the wayfinding and ticketing strategies</p> <p>Step 2: Implementation and strengthening of the branding as the Zone develops over time</p>	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p>	

Theme 4: Greenspace and Biodiversity

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Integrated Habitat Network Plan	<p>Develop Integrated Habitat Networks (IHNs) across the entire Zone which link existing habitats within the Zone as well as providing wider links to those outwith the Zone area.. The strategy should incorporate all of the proposed projects set out within this Zone strategy which relate to habitats. Specifically these include:</p> <ul style="list-style-type: none"> • Theme 1 'Active Travel Networks'; • Theme 2: 're-naturalisation of watercourses', 'Re-open Bankton Adit culvert', 'surface water management plans for existing settlements, 'wetland habitat areas' • Theme 3: 'Tranent to Cockenzie Waggonway', 'Cultural Heritage Trails', '3 Harbours Strategy', 'Meadow Mill Connectivity' • Theme 4: 'Green Space and Biodiversity Within Urban Areas; 'Climate Resilient Planting Programme', Transport Corridor Planting Opportunities'. • Theme 5: 'Horticulture Inward Investment Study', Training Hotel and Kitchen Garden' 	<p>Step 1: Produce an IHN strategy (which uses the CSGN and SNH IHN tool) to identify and connect existing habitats and provides a phased plan as to how best to integrate these with the proposed projects outlined within the Zone strategy.</p> <p>Step 2: Delivery of the proposals in line with the phasing of the delivery of the wider Zone</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> • Early engagement with land owners and other stakeholders required to allow a joined up blue/green network in areas not under Council ownership. 	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: linked to individual Zone projects</p>	<p>Funding bodies and funds</p> <ul style="list-style-type: none"> • SNH • National Lottery Heritage Fund - Biodiversity Challenge Fund • Green infrastructure Scotland - Green Infrastructure Fund • Green infrastructure Scotland - Green Infrastructure Community Engagement Fund • Scottish Government • Scottish Forestry <p>Partners</p> <ul style="list-style-type: none"> • SNH
Green Space and Biodiversity Within Urban Areas	<p>Restructure Council owned open space to align with climate change priorities. This could include:</p> <ul style="list-style-type: none"> • Connect the existing isolated green spaces within settlements with ecological corridors of flowing plants using existing urban infrastructure (Pollinator Pathways). This should be part of a more general pollinator strategy which also picks up on existing ones such as the John Muir Way Bee Line; • Connect Council owned open space into the proposed Active Travel Network; • Introduce rain gardens and swales within existing urban streets as part of surface water management plans and pollinator pathway creations; • Create allotments and community orchards on Council owned land and incentivise fruit tree planting within private gardens. <p>Proactive engagement with the community required in order that projects on Council owned land act as a catalyst for ongoing further projects within the community and on private land.</p>	<p>Step 1: Produce a strategy to be coordinated with the surface water management plans (as outlined under Theme 2).</p> <p>Step 2: Implementation of the recommendations within the strategy to be undertaken prior to or in line with the wider Greater Blindwells development - this is key to supporting the regeneration of the existing communities in line with the incoming Greater Blindwells New Town. Delivery of the proposals should be initially Council led and focussed on Council owned land with community engagement projects. Subsequent support should be provided for the community to continue to create pollinator pathways within private open spaces including gardens based on the exemplar provided by the Council.</p>	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	<ul style="list-style-type: none"> • Central Scotland Green Network (CSGN) • Greenspace Scotland • Network rail • QMU • Other higher and tertiary education bodies
Climate Resilient Habitat Creation Policy	<p>Undertake a planting programme for the Zone which develops and implements to proposals to provide a landscape framework which embeds all of the proposals set out in the vision for the Zone. This includes:</p> <ul style="list-style-type: none"> • New tree planting along the re-naturalised watercourses, within the Blindwells development, along the A1 and along active travel routes throughout the Zone area; • Specification of climate resilient species which are native, have high levels of carbon sequestration potential, an ability to absorb pollution, resilience to changing temperatures and levels of rainfall and are robust against disease (following the latest available evidence); • Diversification of food production to support local supply needs and sustain long term productivity on prime agricultural land; 	<p>Step 1: Produce a planting programme which outlines the landscape framework within which other projects within the Zone can be coordinated, including the surface water management plans and Active Travel Network as key blue/green infrastructure frameworks for the Zone.</p> <p>Step 2: Embed the programme within the Greater Blindwells Masterplan</p> <p>Step 3: Deliver the proposals as the Zone develops giving highest priority to aspects which form the basic landscape framework within the Zone area.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> • Early engagement with land owners and other stakeholders required to allow a joined up blue/green network in areas not under Council ownership. 	High	Short term and ongoing	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: £2 - £10 million</p>	

Theme 4: Greenspace and Biodiversity (continued....)

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
	<ul style="list-style-type: none"> carry out a feasibility study into habitat creation including a soil study 					
Low Carbon Food Strategy		<p>Step 1: Explore potential links with the BID and with education institutions and businesses including food growers;</p> <p>Step 2: Produce a coordinated strategy which require cross working between a number of organisations; some aspects may need written into planning policy.</p> <p>Barriers: Securing land for growing and establishing structures for successful delivery is complex and will require a lot of coordination</p>	High	Short term	<£2 million	
Transport Corridor Planting Opportunities	Undertake new tree planting (as per the Climate Resilient Planting Programme) along the existing transport corridor networks as a high priority, early implementation project focusing on the A1 and the rail line.	<p>Step 1: Undertake tree planting as a high priority activity</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Negotiations/incentives may need to be provided on land which is not Council owned. 	High	Short Term	Step 1: £2 - £10 million	
Greater Blindwells	Greater Blindwells is envisaged as potentially being a high density, mixed use development with opportunities to create a setting and identity around high quality green and blue space which delivers biodiversity value.	<p>Step 1: Continued working through the Blindwells Area Development Framework to make sure the principles of the Zone vision are embedded within the proposals for Greater Blindwells.</p>	High	Medium Term	N/A	

Theme 5: Strong Communities, Regeneration and Enterprise

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Geothermal Feasibility Study	To undertake a feasibility study to quantify and locate the potential for the use of the geothermal resource as a means of providing energy within the Zone. This should include: possible borehole locations, scale, potential applications (e.g. district heating (GeoDH), combined heat or power (CHP), agricultural uses, heating of water bodies), details of the technology required as well as ownership and management considerations.	<p>Step 1: Undertake a Feasibility Study in collaboration with the Coal Authority.</p> <p>Step 2: Develop a strategy for the implementation of the geothermal energy resource which is in line with this strategy and which includes borehole locations on areas of Council owned land.</p> <p>Step 3: Implementation of the use of the geothermal energy resource via the projects set out in this strategy (and any additional projects identified within the feasibility study) which include: Theme 2: 'Re-open Bankton Adit Culvert', 'Outdoor Leisure/Water Park and Lido', Theme 3: 'Geothermal Energy and Orientation Centre', Theme 5: 'Geothermal District Heating', 'Horticulture Inward Investment';</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Early engagement with land owners and other stakeholders required to allow a joined up blue/green network in areas not under Council ownership. 	High	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: <£2 million</p> <p>Step 3: >£10 million</p>	<p>Funding bodies and funds</p> <ul style="list-style-type: none"> Scottish Enterprise Scottish Government and COSLA - Regeneration Capital Grant Fund / Town Centre Fund Scottish Government - Investing In Communities Fund / Aspiring Communities Fund <p>Partners</p> <ul style="list-style-type: none"> Coal Authority Scottish Enterprise Future Skills Scotland
Geothermal District Heating within Greater Blindwells	Design and implementation of district heating within Greater Blindwells and nearby low income areas via extraction of geothermal heat from water within the historic mine shafts. Continue to explore opportunities for Blindwells 1.	<p>Step 1: Design, based on the outcomes of the geothermal feasibility study</p> <p>Step 2: Implementation in line with the development of Greater Blindwells</p>	Medium	Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	<ul style="list-style-type: none"> Queen Margaret University East Lothian Food and Drink BID
Horticulture Inward Investment Study	Study into inward investment opportunities for innovative methods of horticulture. These may include the use of geothermal energy as a heat source for growing and opportunities for growing for the pharmaceuticals industry.	<p>Step 1: Undertake study in relation to innovative horticultural methods and inward investment</p> <p>Step 2: Implementation of the outcomes of the study within the Zone area, particularly at Cockenzie.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Early engagement with landowners required and information/education on the potential benefits of innovative horticultural methods of growing as a means of diversification. 	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p> <p>(potential revenue source)</p>	
Education Centre within National Climate Resilience Centre	Provision of an education centre within the National Climate Resilience Centre which runs educational events for local schools, colleges and universities. Every child in East Lothian can pass through its doors to learn about innovative sustainable ways of energy production, farming and living and how they can contribute to the aims of the Zone.	<p>Step 1: Include the education centre within the brief for the international design competition for the geothermal energy and orientation centre.</p> <p>Step 2: Delivery of the education centre in line with in line with the delivery of the wider visitor centre.</p> <p>Step 3: Ongoing running of an education programme in line with the aims of the Zone vision.</p>	Medium	Short Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p> <p>Step 3: <£2 million</p>	
Training Hotel and Kitchen Garden	Provision of a high end training hotel, restaurant and kitchen garden (after the precedents of Noma, Copenhagen; Le Manoir, Oxfordshire, L'Enclume, Cumbria and Dumfries House, Dumfriesshire). This provides training opportunities for the local population in growing, cooking and hospitality as a means of promoting skills and creating jobs within the local communities.	<p>Step 1: Feasibility study and brief for tender for the location, delivery and subsequent running of the training hotel which should be linked with the Active Travel Network and other training opportunities within the Zone.</p> <p>Step 2: Delivery of the training hotel</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Located within the core Zone and key to the delivery of the wider aims of the Zone in terms of providing training opportunities and jobs for the existing communities as new development occurs. 	Medium	Medium Term	<p>Step 1: <£2 million</p> <p>Step 2: £2 - £10 million</p>	

Theme 5: Strong Communities, Regeneration and Enterprise (continued....)

Project	Project Aim	Steps to Delivery	Priority	Phase	Cost	Funding and Partners
Improve Existing Housing Stock	A programme to improve the resilience of existing housing stock in Tranent, Prestonpans, Cockenzie and Port Seton, Longniddry and Macmerry, via retrofitting measures to improve energy efficiency of homes and address fuel poverty.	<p>Step 1: Co-ordinate the improvements with wider improvements to green space and streets outlined in this strategy: 'Theme 4: Council Owned Space Revitalisation' and Theme 2: 'surface water management plans'.</p> <p>Step 2: Implementation of the recommendations within the strategy to be undertaken prior to or in line with the wider Greater Blindwells development - this is key to supporting the regeneration of the existing communities in line with the incoming Greater Blindwells New Town.</p>	High	Short Term	Step 1: <£2 million Step 2: £2 - £10 million	
Cockenzie Centre for Excellence in Sustainable Building	Creation of a centre for training, innovation and building at Cockenzie which provides skills training in sustainable construction. This provides a training opportunity for the local population and can be linked to the provision of construction jobs associated with the developments at Blindwells and Cockenzie as well as improvements to existing housing stock.	<p>Step 1: Feasibility study, brief and tender for the Centre for Excellence</p> <p>Step 2: Delivery of the Centre in line with the wider Cockenzie Masterplan and prior to major development taking place in the area so that training can take place in line with development and job creation occurring in the Zone.</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Must be co-ordinated with the wider Cockenzie Power Station Masterplan and will be at its most resilient once linked with the new rail hub at Greater Blindwells. 	High	Short - Medium Term	Step 1: <£2 million Step 2: £2 - £10 million	
Greater Blindwells New Town Centre	Greater Blindwells Town Centre to be developed as a mixed use, long term attractor providing a network of facilities. Potential uses include market hall, showcase for East Lothian Food and Drink, training opportunities complementary to elsewhere in the Zone, 'city' business district and event space. A new (functional) water body within the central core and a lido as a major attractor within the New Town Centre. The town centre should be designed to offer a comfortable and attractive environment in a changing climate, for example should offer both shelter and shade.	<p>Step 1: Tie the proposals for the Greater Blindwells New Town Centre with the aims and vision of the Zone strategy.</p> <p>Step 2: Delivery of the New Town centre</p> <p>Barriers to delivery:</p> <ul style="list-style-type: none"> Must be co-ordinated with Greater Blindwells masterplan development 	Medium	Medium Term	Step 1: <£2 million	
Local Regeneration Plans for Existing Communities which combine community work already being carried out.	<p>Production of Local Regeneration Plans for each of the settlements within the Zone which respond to the Place Principle and provide a framework for local communities to take forward actions themselves. The regeneration plans will include as a minimum: recommendations for improved town centres, shop front improvements, derelict building strategy and improvements to street design, opportunities for community engagement and community driven change.</p> <p>This may also include training in enterprise and promotion, supporting new businesses from increased footfall within the Zone.</p> <p>Routes linking nearby communities in particular lower SIMD areas into the Zone.</p>	<p>Step 1: Production of the Local Place Plans in co-ordination with production of the Theme 4: Council Owned Space Revitalisation' and Theme 2: 'surface water management plans' projects.</p> <p>Step 2: Implementation of the Local Place Plans to be undertaken prior to or in line with the wider Greater Blindwells development - this is key to supporting the regeneration of the existing communities in line with the incoming Greater Blindwells New Town.</p>	Medium	Short Term	Step 1: <£2 million Step 2: >£10 million	

8.4 First Steps: Priority Projects

Many of the medium to long term projects are dependent on the successful delivery of Greater Blindwells New Town / Former Cockenzie Power Station Masterplan as well as the undertaking of extensive feasibility studies. In the shorter term, there are five key projects, one relating to each of the key themes for the Zone, which can be undertaken immediately in order to achieve the key aims of the Climate Resilience Zone.

1. Holistic Sub-Regional Water Management Strategy

This is critical to identifying the various water related projects within the Zone which in turn are a key part of the strategic framework of the site. From this strategy flows many deliverable projects including: re-naturalisation of water courses, creation of the lido, outdoor sports water centre and water Park.

Initial immediately deliverable projects stemming from this include:

- opening up of the Bankton Adit to form 'Meadowmill Water'
- delivery of surface water management plans for existing settlements

This is currently being explored by the Council.

2. Climate Resilient Habitat Creation Programme

One of the most straightforward actions that can be taken to achieve greater levels of carbon sequestration is the planting of trees. Producing a climate resilient planting programme based on the best evidence available is therefore a high priority project which can be implemented in the initial phases and developed in line with the other Zone projects. The production of the planting programme will influence most of the other projects within the Zone including: new tree planting along the re-naturalised water courses and proposals for Greater Blindwells New Town master plan.

Immediately deliverable projects include:

- identifying appropriate species and locations
- tree planting along the existing transport corridor networks including on the A1;
- integrating tree planting into the proposals for the Newcraighall to Macmerry segregated Active Travel Route;
- Restoration of existing habitats and creation of new habitats suitable to the area, including grassland.

3. Geothermal Feasibility Study

The use of geothermal energy within the Zone can take many forms and have multiple potential applications. Extracting heat from water contained within the network of historic mine shafts is an innovative and economically sustainable means of contributing to regeneration within the Zone whilst acknowledging its historic evolution. It accords with the underlying principles of the Climate Resilience Zone and provides opportunity for innovation and enterprise. Conducting a feasibility study into the many potential sources and applications is therefore a high priority. The production of the feasibility study influences many of the projects including: district heating applications

within Greater Blindwells New Town, combined heat or power applications, a source of heat for the Lido, applications to the running of the National Climate Change Centre building.

Immediately deliverable projects include:

- Potential for incorporating geothermal heating within the opened up Bankton Adit;
- Potential innovative horticultural applications which could be incorporated within the Cockenzie masterplan proposals.

This is currently being explored by the Council.

4. Active Travel Network

An integrated and user appropriate network of paths and cycleways must come into place in the initial phases of the Zone's development and continue to grow as the Zone develops. In this way, sustainable active travel is at the heart of the physical framework for the Zone. The network will be linked to almost all of the other projects within the Zone via a mixture of commuter, leisure and sporting routes. It also provides an opportunity to link with the climate resilient planting programme so that active travel routes for provide an opportunity for planting throughout the Zone.

Initial immediately deliverable projects include:

- Deliver stage 1 of the Newcraighall to Macmerry Active Travel route including re-routing through Tranent.

This is currently being explored by the Council.

5. National Climate Resilience Centre Feasibility Study

Conducting a feasibility study for the development of this centre is considered to be a priority. The centre could act as a key draw for visitors to come to this part of East Lothian and provides a focus point within the core area. Its presence helps to promote the Zone and its ideologies in the short term before other projects are yet to be implemented. On completion of the feasibility study, other projects can begin to be linked to the Centre, including the development of an education centre, as well as physical links within the core area via cultural heritage trails and active travel networks.

Initial immediately deliverable projects include:

- Establishing feasibility for this and how it would link to other Council proposals within the area; what it should include, how it could be funded and how it would be operated. Should this prove a viable proposal then the next step would be holding an international design competition for the building – this act in itself can form part of the Zones branding and raise the profile of the Zone.

9. Benchmarking

9.1 Precedent Study

A number of projects were reviewed at the start of this study in order to help shape the strategy. The Climate Resilience Zone strategy has no precedent within Scotland. Sub regional scale Parks such as the 7 Lochs Wetland Park, also cross boundary, and the Garnock Connections project share some similarities on landscape repair and community engagement but not the other complexities.

The projects selected each have elements which are relevant to this strategy or were directly referenced by others during early stages of the strategy.

The learning outcomes have been as follows. Common elements of success are set out below with how the strategy responds to them:

- There needs to be a multitude of attractions/activities/projects within the area to occupy visitors;

This was confirmed by discussions with VisitScotland and with ELC Economic Development and Tourism officers. The Zone area contains a number of attractive features including Preston Tower, the Harbours, Tranent Parish Church, and the Waggonway. None of these are strong enough destinations on their own but new interventions could then consolidate increased destination marketing of these.

- Constantly evolving via a long-term strategy/masterplan;

Implementation under the strategy will need to be dynamic and kept under review to ensure it remains relevant. Include high quality art and architecture showcasing local design;

There is already a groundswell of art linked to history within the area. Prestonpans is a mural town, with mural trails illustrating its history. Cnockenzie has “Cockenzie House” a community-owned venture with artist studios. There is also a Three Harbours Festival held most years offering events and exhibitions. One of Scotland’s most famous artists, John Bellamy, came from Port Seton. There is an opportunity to build further on these with the added benefit of being part of a bigger project and draw to the area given these a greater profile.

- Are located close to or explicitly linked with other visitor attractions;

Section 4 of this study identifies all the existing destination attractions which exist within the area already; adding a significant new building together

with the revitalisation of Prestongrange and the multi-functional new water features will create a co-beneficial network.

- Have a strong identity which is often linked to the Zone’s history and/or landscape context;

There are many opportunities for this within the Climate Resilience Zone area, but the growth of new and clean energy from the dormant mining legacy is unique on this scale.

- Use SUDs and innovative design solutions to create multifunctional landscapes;

Managing water is fundamental to the strategy

- Provide a wide variety of different landscape characters/areas within the Zone;

The strategy proposals will create different areas within the Zone but the natural assets of coast, harbour, historic core and existing landscape change within the Zone will all underpin this.

- Promote cycling as a means of exploring the Zone and may even provide cycles for hire which are free to use;

Active travel is promoted within this strategy, reinforced by active travel hubs. Promoting cycling is right, but there needs to be proper infrastructure to support electric bikes and maintenance commitments to keep paths clear of leaves and ice in winter in order to extend the season as much as possible.

- Ongoing/guaranteed funding for maintenance and a central overarching management system (e.g. government or a private foundation);

The business case will need to be assessed by the Council and steering group partners.

- The introduction of new/innovative landmarks (sculpture/architecture....) as a means of revitalising the public perception of an existing landscape;

The brief requested consideration to “incorporating a visitor and ticketing centre, a mixed-use hub and a multi-purpose landmark feature or sculpture”. The findings were that high-quality art or architecture which showcase are important; there was a feeling with stakeholders that the signature sculpture idea is becoming jaded unless it has another purpose and that it

was better to invest in a building which is of unique and memorable design. The proposal is that the brief requirements regarding arrival and identity can be accommodated within a single building which is proposed as a National Climate Centre; this will act as visitor/ orientation centre and will also have an education function where new technologies can be showcased and learnt, linked to the Curriculum for Excellence and with links to universities. The design of the building should be world class and zero carbon; an international design competition would give it profile. A mixed-use hub forms part of the Greater Blindwells proposals.

- Collaboration between different administrations to the same aim/vision.

East Lothian already has a partnership scheme in place; project specific collaboration will be dependent on the governing structure.

The main aspects to avoid, which rose out of the benchmarking study concerned provision/promotion of recreational routes/ Parkland without also providing the required facilities and infrastructure to support increasing visitor numbers. This also needs to be balanced against overprovision/ commercialisation so that the special qualities of the Zone/landscape aren’t lost.

Relationship to Climate Change Park Brief

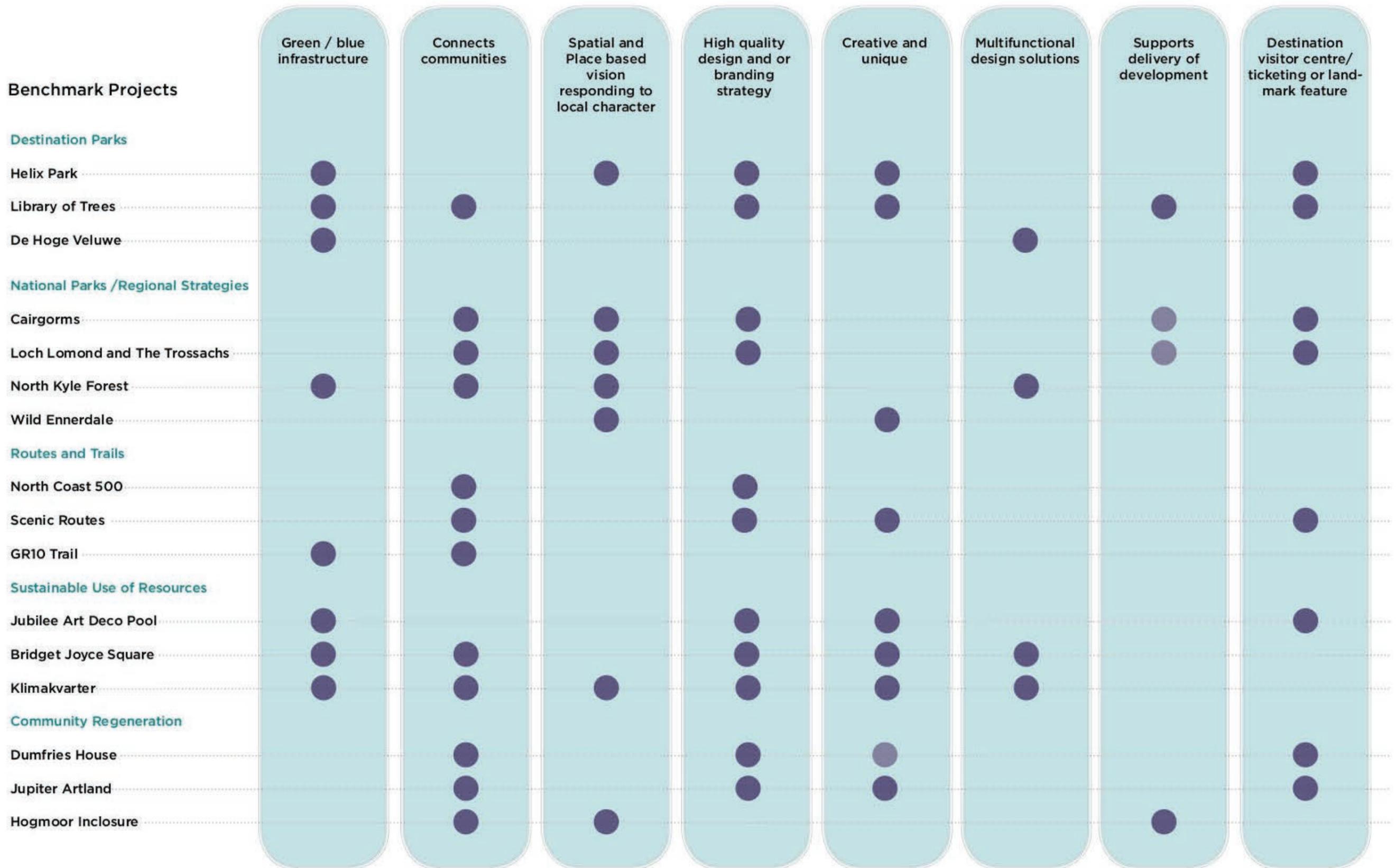


fig. 30: Benchmarking Summary

BENCHMARKING DESTINATION PARKS

Examples of prestigious, highly successful and creative public parks. Typically, these have clearly defined boundaries and are seen as distinct entities within a place which have their own character. They may be set within an urban or a rural context and are often envisaged as the 'glue' which brings together and regenerates existing communities. They tend to be destinations in their own right, containing a multitude of activities to occupy visitors for half or a whole day.

HELIX PARK

Falkirk, Scotland.

The Helix Park originated from the idea to build an eco park as part of the Falkirk Greenspace Initiative, transforming 350 hectares of land between Falkirk and Grangemouth and connecting 16 local communities through an extensive path network. The park also delivers significant infrastructure improvements including reconnecting the Forth and Clyde Canal to the River Forth via a major new canal extension. The Helix is funded via a £25 million grant from the Big Lottery Funds Living Landmarks programme. The Helix park cost £43 million.

THE LIBRARY OF TREES

Milan, Italy.

The project known as 'Biblioteca degli Alberi' is a collection of 153,000 plants set within 10Ha of an urban regeneration context using a highly contemporary geometric landscape design and located in a major business district which was previously lacking in green space. The project archives botanical species unique to Milan and provides green 'rooms' as areas for different forms of recreation. Different programmes focus on fitness, food, music and 10 million people visit the area each year.

DE HOGUE VELUWE NATIONAL PARK

Gelderland, Netherlands.

This is a national park in the Netherlands comprising 5,400 hectares of woodland, heath land, drift sands and peat bogs which is entirely fenced off with three entrances for guests. The park is on privately owned land and is managed by an independent foundation which uses Government subsidies to a limited extent and is supported primarily from paying visitors.

The park promotes its identity via three pillars: Nature and Landscape; Historic tales; and Art and Architecture. It contains the Kroller-Muller Museum including many well known modern artworks and is set in one of Europe's Largest sculpture gardens.



Key aspects of relevance to East Lothian Climate Change Park

- Contains destination artwork in the form of the Kelpies (cost £5 million);
- Extensive, high quality children play provision for a variety of ages;
- Integration of park with existing canal network and promotion of the industrial heritage;
- Use of SUDS and wetlands as a means of managing drainage within the park;
- Provision of visitor centre, cafe and toilet facilities;
- Close to existing attractions of the Falkirk Wheel and Callendar House and Park enables people to visit multiple nearby attractions in a single day.

Key aspects of relevance to East Lothian Climate Change Park

- Creation of a destination architectural attraction (the vertical forest or 'Bosco Vertical') set within a multifunctional parkland;
- The project integrates 3 miles of bike and footpaths through the parkland area as well as play spaces and informal recreational areas.
- It is a park without borders, instead of gates it is bounded by a network of pedestrian paths which are linked to transport hubs and public piazzas.

Key aspects of relevance to East Lothian Climate Change Park

- Cycling is promoted as the ideal way to explore the park with the provision of free bikes from pick up points distributed through the park and 40km of designated paths. A variety of bikes including modified and children's bikes are available.
- The park contains a multitude of attractions and activities providing a comprehensive visitor experience including a contemporary art gallery, food and drink provision.
- It promotes a variety of different landscape characters within one parkland area and promotes the unique flora and fauna of each.
- It creates a strong identity via the concept of three pillars and initiatives such as 'the famous white bikes'.

BENCHMARKING - DESTINATION PARKS East Lothian: Climate Change Park

BENCHMARKING NATIONAL PARKS AND REGIONAL STRATEGIES

The examples share commonalities in that they are a model of multi-ownership and multi-agency interests coming together under a single brand umbrella. Whether this be under the formal title of a National Park or as a strategic vision such as the North Kyle Masterplan.

CAIRNGORMS/ LOCH LOMOND AND THE TROSSACHS Scotland

Loch Lomond and the Trossachs and The Cairngorms have been established as national parks in Scotland in 2002 and 2003 respectively. They have been designated as National Parks to protect the environment whilst encouraging public access and are popular visitor destinations, mostly for domestic visitors.

National Parks in Scotland have 4 clear strategic aims relating to conservation, sustainable use of natural resources, the promotion of use of the landscape and sustainable economic development.

North Kyle Masterplan East Ayrshire, Scotland.

A masterplan for the North Kyle Forest and the adjoining areas which aims to create a lasting and positive legacy for the forest area. It is an example of a strategic masterplan which uses different forms of green space as a means of regenerating both the local community and the local environment.

Wild Ennerdale Lake District National Park, England

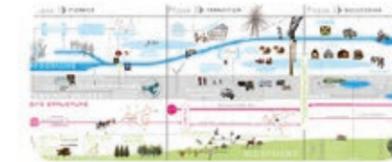
The Ennerdale Valley comprising 4,300 hectares on the north western edge of the Lake District National Park in Cumbria has been deliberately left for over 10 years, to evolve naturally via a partnership agreement between the main landowners.

The vision is: 'to allow the evolution of Ennerdale as a wild valley for the benefit of people, relying more on natural processes to shape its landscape and ecology'. The valley had been dominated by Sitka spruce plantations planted in the 1920's with the land pattern heavily influenced by forestry tracks, spruce forestry and overgrazed pastureland.



Key aspects of relevance to East Lothian Climate Change Park

- Although covering a spatial area which crosses multiple council areas, the national parks have a clear identity, defined strategic aims and a clearly defined boundary;
- They are administered by an overarching authority and have an independent planning board, producing their own Local Development Plans;
- The parks balance conservation work with providing access for recreation and educational purposes;
- The Cairngorms Youth Action project is a new project developed by the Cairngorms National Park Authority to help address issues identified by young people and aims to develop a procedure to fund young people ideas about living, learning and working in the park via grants.



Key aspects of relevance to East Lothian Climate Change Park

- The strategy is located in an area which is not well connected, has high levels of unemployment / deprivation and a history of industrial exploitation of the landscape, most recently via open cast mining;
- The strategy aims to create a lasting and positive legacy connecting communities emotionally and physically with the forest and providing high quality opportunities for outdoor education, activity and recreation as well as creating job and training opportunities;
- The proposals links spatial planning with key actions and funding sources as well as identifying external partners and local community organisations to make the project deliverable via multiple routes;
- The masterplan comprises a series of practical and creative projects which can deliver local and strategic regeneration.



Key aspects of relevance to East Lothian Climate Change Park

- The project is a partnership between the main landowners including: the Forestry Commission, The National Trust and United Utilities. Natural England is also a partner;
- A policy of stepping back and letting the land evolve naturally, coupled with some planting, has led to greater diversity in the existing forestry species;
- The project is managed using a Stewardship Plan, a core partnership document which helps to steer and influence decisions. It represents a shift from management based on separate land ownership to a holistic plan which moves away from the traditional sense of management.

NATIONAL PARKS AND REGIONAL STRATEGIES East Lothian: Climate Change Park

fig. 31: Benchmarking Consultation Boards

BENCHMARKING ROUTES AND TRAILS

These examples include long distance routes and trails which may be seen as large scale, linear parks. They are typically associated with high quality branding and wayfinding strategies and can include high quality 'draws' along the route to promote their use. Often such routes act to better connect existing communities and as a means of regeneration in more rural areas.

NORTH COAST 500

Scotland.

A coastal touring route of just over 500 miles following existing main roads along the coastal edges of the North Highlands. Launched in 2015 it highlights existing attractions including cities, produce, wildlife and coastal scenery. The route follows an existing road system and uses branding to highlight attractions. Statistics show that the route has led to a 26% rise in visitor numbers and 10% increase in traffic in the first two years and boosted business by 15-25% year on year (Highlands and Islands Enterprise).



Key aspects of relevance to East Lothian Climate Change Park

- Initially conceptualised by the non-profit North Highland Initiative, North Coast 500 Ltd is now a private company and the route is promoted online in association with private sponsorship and supported by the sale of merchandise;
- However it has been criticised for placing strain on the existing basic infrastructure and impacting negatively on the quality of life for long-term residents (Guardian, 2019);
- Reports suggest that the popularity of the route has not been suitably supported by the development of necessary facilities for increased visitor numbers;
- Funding from the Rural Tourism Infrastructure Fund and the Highland Council has been allocated to improve facilities and maintain the road.

SCENIC ROUTES

Norway

Along selected roads in Norway, existing natural wonders have been amplified by the introduction of art, design and architecture with the aim of bringing visitors closer to nature. The routes comprise 2,336 km over 18 selected roads which have been re-branded from the former 'National Tourist Routes' to the 'Norwegian Scenic Routes'. The factor which sets this scenic route apart from others is the use of ground breaking architecture and art for the first time, it showcases Norwegian design and scenery whilst providing an opportunity to increase access opportunities and engage people with the existing landscapes.



Key aspects of relevance to East Lothian Climate Change Park

- Directed investment into rural areas via successful re-branding of existing routes and the introduction of innovative architecture and art;
- A key objective was to strengthen rural life and promote local business activities;
- Collaboration between different county administrations and municipalities as well as local business communities;
- The ongoing maintenance as a high quality attraction (by the Norwegian Public roads Administration) and the degree of control from central government are readily acknowledged as integral to its success;
- Supported by a website outlining the routes, facilities, opening times etc...
- Developed as a series of individual projects of differing scales within a larger long term strategy to 2023 with further development to 2029;

GR 10 Trail

Pyrenees, France

A classic large scale, 955 km mountain trek which crosses France from one side to the other, linking the Atlantic Ocean with the Mediterranean Sea from Hendaye on the Bay of Biscay to Banyuls-sur-Mer. The route crosses through a range of landscapes and includes well known sights in the Pyrenees taking approximately 52 days to complete.



Key aspects of relevance to East Lothian Climate Change Park

- Well way marked route following good paths and with a good network of inexpensive accommodation in which to stay;
- The route appears on all regional maps and a number of sections include alternative routes offering a less challenging options to cater for different ability levels;
- The route takes in a variety of existing well known sights and follows historical paths in certain sections such as the 18th century logging path carved into the cliff face near Etsuat.

BENCHMARKING - ROUTES AND TRAILS
East Lothian: Climate Change Park

BENCHMARKING SUSTAINABLE USE OF RESOURCES

The following examples make innovative and sustainable use of existing resources to provide recreational facilities for locals and visitors. They do this by harnessing and seasonably managing existing environmental resources such as energy, water and agricultural land.

JUBILEE ART DECO POOL

Cornwall, England

A triangular sea water pool which uses the cycle of the tides to circulate and clean the water daily and to completely empty and refill the pool every fortnight. There is a separate geothermal pool with heated sessions running every hour. The pool has a capacity for up to 600 swimmers. The project is linked strongly to sustainable development initiatives and is tied into local initiatives and charities.



Key aspects of relevance to East Lothian Climate Change Park

- The pool has been designed with no mechanical filtration and minimal chemical treatment and relies instead on the natural cycle of the tides to clean the water;
- The pool shuts down once per fortnight in accordance with the tides - this necessary aspect of the design also provides an evident connection between the use of the pool and the natural environment in which it is located.
- It is operated via a community run social enterprise 'Jubilee Pool Penzance Limited'. The pool is thus run for the community by the community and is an exemplar of devolution of a formerly Council owned asset back to the community.
- The pool is financially sustainable and not reliant on public funding for its future operation. It achieves this via a fund raising Community Share offer using Crowdfunder to help geothermally heat (via a 410 m well) a section of the pool - allowing the pool to remain open during the winter months (November onwards).

BRIDGET JOYCE SQUARE

London, England

An exemplar of sustainable rainwater management in an urban setting. A single street set between two playgrounds, and located in the sixth most deprived local area in England, was transformed from an unsafe clash of pedestrians and cars via the use of rain gardens into a 'family space' which the community can use to hold events.



Key aspects of relevance to East Lothian Climate Change Park

- Successful creation of high quality community open space within a highly deprived location;
- Management of rainwater via SuDS, with the functional aspects of the SuDS being completely integrated into the space as a whole.
- The scheme is multifunctional, balancing the need for a large event area with more intimate spaces - as well as improving links between the school and the playground;
- The rain gardens intercept roof runoff and use 'rain sculptures' to take the water to ground levels. When it rains, the scheme comes to life with unusual flows of water via the various sculptures;
- Trees and plants were carefully selected to work with the SuDS, including the use of a fully planted surface with dense root mat without reliance on fertilisers and chemical herbicides, as well as the use of birch trees which allow vigorous plant growth beneath their light canopy.

KLIMAKVARTER

Copenhagen, Denmark

Copenhagen's first district level response to climate change. This project, known as 'the climate-resilient neighbourhood' responded to the challenge of urban flooding to turn the neighbourhood of Osterbro into the greenest inner city neighbourhood in Copenhagen. At the same time it equipped the area to withstand large volumes of rain whilst regenerating and engaging the local community.



Key aspects of relevance to East Lothian Climate Change Park

- The project is a collaboration between the City of Copenhagen and the utility company HOFOR, Environmental Centre Osterbro and the residents;
- It often cited as an exemplar in placemaking via infrastructure and tackling the challenges of flooding in an urban setting;
- The project reduced the quantity of surface water flowing into a combined sewer system, via the creation of a series of rain gardens.
- Successful community engagement and co-design has resulted in a positive brand identity as 'The Climate Quarter' and local residents are now equipped with the skills and sense of ownership to undertake maintenance on ongoing development of the area.

BENCHMARKING - SUSTAINABLE USE OF RESOURCES
East Lothian: Climate Change Park

fig. 32: Benchmarking Consultation Boards

BENCHMARKING COMMUNITY REGENERATION

The following are examples destination recreational spaces which are linked to aspects of community regeneration. This may be through the setting up of outreach programs, running of educational and training schemes and linking for community organisations.

DUMFRIES HOUSE Ayrshire, Scotland

Owned by the Prince's Foundation, this 2,000 acres estate and 18th century house includes a number of attractions connected by a network of woodland walks. The estate includes a cafe, walled garden, adventure playground, maze, arboretum and ornamental bridge. In addition the Foundation runs a series of programmes and centres within the Estate which provide training opportunities (supported by Dumfries House Education and The Prince's Trust). These include engaging local school children in food and horticulture education, linking the production of fresh produce with healthy eating;



JUPITER ARTLAND Edinburgh, Scotland

A contemporary sculpture garden located just outside Edinburgh and founded in 2009 by philanthropist art collectors. It is now an art organisation set over 100 acres of meadow, woodland and including 5 indoor gallery spaces containing permanent works by internationally renowned artists as well as running seasonal programmes of exhibitions and events.



HOGMOOR INCLOSURE East Hampshire, England

The creation of a multigenerational space which acts to bring together communities, both existing and new. This is 54 acres of wooded heathland adjacent to Whitehill and Bordon and is linked to the NHS Healthy New Towns initiative in England.



Key aspects of relevance to East Lothian Climate Change Park

- The New Cumnock Lido provides a high quality facility for the local community in the form of an outdoor heated pool which promotes physical activity within an area of high deprivation;
- The estate is a clearly defined place with a strong identity and branding under the Prince's Foundation. The Foundation is a charity with the aim of supporting people to create community by championing sustainable approaches and teaching traditional arts and skills and restoring historic sites;
- An employability programme 'Get Into Programmes' for 16-25 year olds is run as a partnership with the sister organisations The Princes Trust. This runs three skills led courses offering young people training in industries which can be employed in the local area included hospitality, sustainable building and woodland management.

Key aspects of relevance to East Lothian Climate Change Park

- It integrates destination artwork within a parkland setting;
- Although privately run and with an entrance fee for visitors, it also runs a learning and outreach programme which aims to engage with every child in Scotland by offering free school visits throughout the year;
- The Jupiter Artland Foundation supports a youth council which brings together a group of young people from all over Scotland;
- It offers free learning visits for community and charity led educational organisations and provides CPD sessions for teachers to promote imagination and creativity;
- In the summer months it hosts art festivals and music and performance events.

Key aspects of relevance to East Lothian Climate Change Park

- The space brings together both existing and new communities in an area where 3300 homes are being developed via the use of a parkland situated on the edge of new development and adjacent to existing communities;
- The park re-introduces natural heathland and pine forest to create a Suitable Alternative Natural Greenspace with high biodiversity;
- The Inclosure will become part of a new wider green network of Whitehill and Bordon New Town;
- The space is managed by a local environmental organisation who worked collaboratively with local access groups and charities. Plans are to provide a ranger service and nature and education based events.

BENCHMARKING - COMMUNITY REGENERATION East Lothian: Climate Change Park

fig. 33: Benchmarking Consultation Boards

10. Reflection

The Climate Resilience Zone proposal is an ambitious, long term strategy with many challenges to delivery. The life changing impacts of climate change are not on some far distant horizon but are evident now; news reports of heatwaves, hurricanes, flooding and extensive fires are becoming increasingly common. The impact on our land, habitats, communities and people is extensive.

Planning for climate change requires us to think about how we can mitigate against, adapt to and sequester the impacts. Thinking local, acting globally is a start but being able to think and apply principles on a larger scale is even more effective.

The western area of East Lothian differs from the east in its history, which is intrinsic to its landscape and the legacy of its industrial past. The legacy includes significant underground mine water which reaches the surface at a temperature of around 12 degrees; to the north of the new Blindwells development it is pumped out, treated and eventually reaches the Forth at the rate of up to 450l per second. The mine water is cooled underground by surface water which leeches below the surface. Burns and ditches often lie empty as a result. Surface flooding is also a local issue south of Prestonpans and Cockenzie. Managing this large and complex water system and reaching solutions which not only provide sustainable drainage solutions, but which offer significant energy supply, nature conservation, leisure and regeneration solutions is at the centre of this strategy.

Encouraging a modal shift from the car to sustainable transport solutions is needed to address the main source of our greenhouse gas emissions. Encouraging greater bike use is an important part of this and has seen huge success elsewhere including within other northern countries such as in Copenhagen. But with increased rain, wind and long dark winters the reality of a Scottish winter suffering climatic change means that encouraging cycle commuting needs to be well resourced with proper facilities and well-maintained, safe and connected paths. Electric bikes have seen increased usage with cyclists willing to travel further and in more inclement weather; again, providing appropriate secure facilities and easier use of integrated travel systems with these heavier bikes is needed to encourage this further.

Not everyone can cycle; providing alternative transport systems such as electric taxi buses and opportunities for electric car sharing clubs can also help reduce private car use and reduce greenhouse emissions.

Hence another major investment for the Zone needs to be around transport; creating interchange hubs that link with sustainable transport. Improvements to the east coast railway line are already being considered; if these go ahead then this opens up the opportunity for a new Greater Blindwells station and can enable north-south active travel links.

This is a landscape which also has the reputation for being part of the Garden County with the Garden County Farmland Special Landscape Area being part of the Zone. Most of the landscape within the Zone is Prime land. Protecting Prime land for crop production and educating people on the benefit of low food mile-based growing, shopping, cooking and eating reduces carbon and packaging. Such important agricultural land limits opportunity for tree growing so other open space interventions should be worked harder and made multi-functional to maximise carbon capture hence revitalised water courses should have active travel routes and riparian edge planting wherever possible. All travel routes should be planted where possible; where trees can't be planted other objectives such as connecting up bee pollinator routes should be considered.

Finally significant change is already being planned for the next 30 years which will bring people and jobs to the area and yet some of the most deprived parts of East Lothian are also found here within the historic towns. Encouraging their regeneration, offering employment opportunities, capitalising on their history and on the new technologies being created through the resources on their doorstep are cross benefits to this strategy. Creating an enterprise economy also supports the increased levels of tourism on which the Climate Resilient Zone is well placed to capitalise. Increased opportunities within this area will arrest the flow of commuting into Edinburgh which will also improve levels of emission.

This is a high-level strategy which is supported by an action plan; it contains many “big ideas” which are all interconnected. Seizing the opportunity and delivering real change which makes a difference at many levels will create a long term and lasting legacy for future generations and set a high benchmark for other authorities to follow.

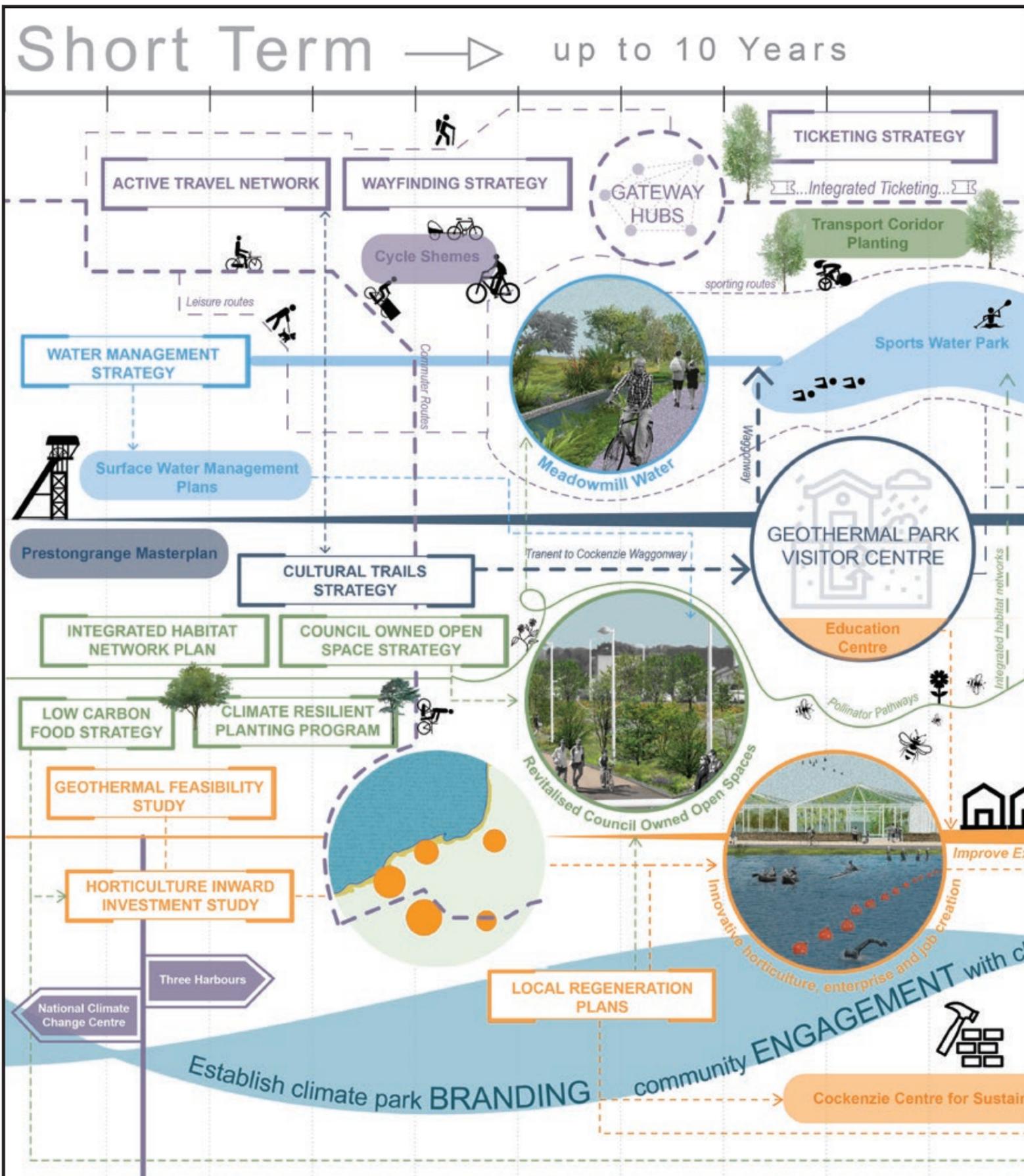


fig. 34: Timeline Extract

Prepared by

optimised environments ltd.

Edinburgh

Quartermile Two | 2 Lister Square | Edinburgh | EH3 9GL
t 0131 221 5920 | w optimisedenvironments.com

London

Unit 6 | 36-42 New Inn Yard | Shoreditch | London | EC2A 3EY
t 0203 984 4022

Manchester

13 Swan Street | Manchester | M4 5JJ
t 0161 696 7550

Optimised Environments Ltd. Registered in Scotland SC359690.
Registered address: Quartermile Two | 2 Lister Square | Edinburgh | EH3 9GL

for

East Lothian Council

John Muir House | Brewery Park | Haddington | East Lothian | EH41 3HA

