

LEVENMOUTH ACTIVE TRAVEL AND RIVER PARK CONCEPT DESIGN MASTERPLAN REPORT

DIAGEO



Structure of the report

This report has distilled the process of developing the Stage 2 - Concept Design Masterplan into four distinct sections. Each section includes chapters which reveal the key issues and complexities that underpin the masterplan proposals.

1. Setting the Scene - p5

provides a broad background and overview of existing relevant information to the project, also illustrates the Levenmouth scale context

2. Telling the Story - p29

describes the narrative process of shaping the proposals including historical analysis and community engagement

3. Illustrating the Proposals - p33

reveals the concept design masterplan for the River Park and more detailed site studies at the garden scale

4. Looking Forward - p109

outlines additional threads to be considered and further developed during Stage 3 - Detailed Design

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Structure of the report

The Concept Design Masterplan is divided into four distinct sections.

- **Setting the Scene**, provides a broad background and overview of existing relevant information to the project (chapters 1-5).
- **Telling the Story**, describes the narrative process of shaping the proposals including historical analysis and community engagement (chapters 6-7).
- **Illustrating the Proposals**, reveals the concept design masterplan for the River Park and more detailed site studies at the garden scale (chapters 8-10).
- **Looking Forward**, outlines additional threads to be considered and further developed during Stage 3 - Detailed Design (chapters 11-14).

Setting the scene

This section begins with a broad introduction to the context, aims and principles of the Connectivity Project which were foregrounded through the masterplanning process. It continues with an outline of the project brief which Iglu Studio have worked towards as set by Green Action Trust (GAT). A brief overview of the Stage 1 - Visioning and Integrated Masterplan Report provides a background to the wider catchment context. This section lays out the design narrative of the concept design proposals at the **Levenmouth scale**, suggested wider ecological connections create a consistent green infrastructure throughout the surrounding area while an improved path and cycle network will link up with existing routes and create greater opportunities for active travel. The section concludes with a series of surveys which have informed the masterplan design development of the River Park.

Telling the story

This section starts with a detailed analysis of the historic context of Levenmouth, outlining how the landscape and urban environment developed and grew over the centuries. A series of historic maps and photos portray the changes as the area evolved from a sparsely inhabited rural landscape to a heavily industrialised



▲ Approaching the pedestrian footbridge near Kirkland Dam

group of settlements. This section ends with a summary of the engagement process which informed the design development of the Masterplan. The separate Engagement Report provides a more detailed overview.

Illustrating the proposals

The **River Park scale** provides an overview of the primary layers which define the framework of the masterplan, including:

- how river restoration works will improve the ecological condition of the river,
- how the proposed path network will connect communities along, across the river and rail-line and provide access for all,
- how protecting and responsibly managing the green network will improve biodiversity and existing habitats,
- how the re-opened rail-line will integrate into the landscape and
- how references to heritage and new opportunities for play will be implemented within the river park.

The section concludes with specific design proposals for six key areas of focus at the **Garden scale** within the river park. In addition to landscape drawings of existing and proposed, each garden also contains a synopsis of existing

conditions, photos of the area and relevant case studies which provide design inspiration. The Burn Mill Garden also contains a more developed suite of drawings including a rendered plan, sections and perspectives.

Looking forward

The final section of the report outlines additional threads which should be further developed during Stage 3 - Detailed Design.

It continues with a chapter on the importance of site-specific details and how they create a sense of place. The six garden areas will provide the primary areas of focus for the detailed design phase.

The section concludes with a series of phasing diagrams which illustrate the evolution of the river park over a 15 year period and broad associated costs for the Concept Design Masterplan proposals.

Finally, a summary outlining how the proposals have addressed the six masterplan principles (see next page) bookends the report on page 124.

"In early 2018, the Leven Project Board was formed to explore opportunities to work together to deliver a range of agency and organisation aims and deliver real change to the communities along the River Leven in Fife. The project was instigated by SEPA, and a desire to undertake river restoration works in the area, but quickly grew to include social and economic objectives as well as environmental ones, and the Leven Catchment Programme is the result."

Green Action Trust (GAT) - River Leven Connectivity Project | Landscape Design Brief 2019

Continuing the journey

The aim of the Leven Catchment Programme is to help the area of mid-Fife prosper environmentally and economically, and to become a leading example of green regeneration in Scotland and beyond, demonstrating how connecting people and place can drive inclusive growth for all. The Programme vision is that by 2030 the Leven catchment will be a living, breathing example of inclusive growth, achieving sustainability and environmental excellence whilst maximising social and economic opportunities.

The Connectivity Project is to be the first built project of the Programme, encompassing the installation of a new active travel network in the Levenmouth area and the creation a new public park within the river valley, the River Park. This Stage 2 report sets out the Concept Design Masterplan principles for the River Park, how the proposals fit into the wider Levenmouth context and the next steps that will underpin a rediscovery and new appreciation of the river valley.

The River Park will be an accessible, attractive and ecologically thriving, biodiverse public park for local communities and visitors alike to enjoy. Strategic interventions situated around key crossing points will provide meaningful social spaces with new facilities and references to the unique industrial and natural heritage of the surrounding area.

On 8 August 2019 the Scottish Government approved the Levenmouth rail link, reintroducing a rail service

between Thornton junction and Leven along the disused former Methil Branch line. The development includes the introduction of a dual rail corridor and two new stations (located at the western and eastern ends of the river park area). Whilst the Levenmouth rail link is a separate project being delivered by Transport Scotland, it is a fundamental element to consider during the design development of the Connectivity Project.

The project area for the river park is comprised of a 5km valley stretch of the River Leven from Windygates to its confluence with the Firth of Forth at Leven (see map on page 7). It is situated at the centre of Levenmouth, a group of settlements and villages located near Fife's coastline, including Buckhaven, Methil and Methilhill, the total population of which sits around 37,288 (2019). The River Leven runs centrally through the site and is flanked by arable land, woodland, grasslands and wetlands rich in ecology, habitats and history. It is this section of the river valley that the Concept Design Masterplan focuses on.

A changed world

At the time of the commissioning of the Connectivity Project in December 2019 the premise was to build on the work carried out in Stage 1 and 'produce a masterplan to develop designs and spatially illustrate the vision of the Connectivity Project'. The vision to reconnect people with the river, to recollect histories and stories and to create a positive future for the next generation.

This intention still remains at the heart of the project, but since the global pandemic of Covid-19 the world has fundamentally changed, with recurring references to the need for humans to adapt to the 'new normal.'

The impact of Covid-19 has identified many gaps and failings of the environmental and social structures that guide and shape our society and the places we live in. To this end the Concept Design Masterplan has drawn upon these issues to ensure that the Connectivity Project is a more mindful proposal through the establishment of a set of project principles (see right) to guide the process from vision to delivery. Though these principles were certainly applicable to the pre-Covid-19 context they are now arguably more pertinent than ever.

SIX MASTERPLAN PRINCIPLES

A **connected** project – embracing walking, cycling, and wheeling



A **spatial** project – providing a new network of green public spaces



A **green energy** project – integrating public transport, renewable energies and energy production



A **climate aware** project – working towards zero waste goals with the introduction of climate adaptation and mitigation measures



A **social justice** project – endeavouring to tackle broader social themes of inequality, particularly for those less heard and most at risk



A **community focused** project – helping to create a sense of ownership and a resilient economy through locally-produced food and community self-sufficiency





▲ Mountfleurie housing development above northern slopes as viewed from the riverbank

2 PROJECT BRIEF

[Setting the scene]

“The River Leven Connectivity Project is the first stage of the wider Leven Catchment Programme. It aims to combine river restoration and habitat enhancement works with access and active travel improvements, community engagement, recreation opportunities and both social and economic regeneration.”

Green Action Trust (GAT) - River Leven Connectivity Project
| Landscape Design Brief 2019



▲ Connectivity Project area

The project brief that Iglu Studio were set for the Connectivity Project required the production of a Concept Design Masterplan, in accordance with Sustrans requirements, Project Pack v1.0, Category 4, Task 1 Design and Construction, Stage 2 Concept Design (see Sustrans Project Pack v1.0 Category 4, page 8). The Concept Design Masterplan should develop designs and spatially illustrate the vision of the Connectivity Project.

Continuing on from the Stage 1 development of the Visioning and Integrated Masterplan Report, Iglu Studio has worked with project partners and other project workstreams including the community engagement team to produce concept designs for the Connectivity Project. Amey plc were appointed as the active travel and paths consultant to develop an Active Travel Network for the wider Levenmouth area. Together we have collaborated to ensure the masterplan and active travel network overlap and mesh to provide a unified and coherent proposal.

In addition to the development of the Concept Design Masterplan, a key aspect of the commission was to assist the community engagement workstream to facilitate a

series of public events in the local area. From the beginning of 2020 Iglu Studio played a key role in the planning and programming of the engagement process including the facilitation of two public events in February and March through to the delivery of online consultation and ‘town hall’ events held in October. The impact of Covid-19 required the development of new engagement strategies to stay connected with the community. An overview of the engagement process and how it has influenced the Concept Design Masterplan is included in the supporting Engagement Report.

Sustrans

The Connectivity Project has been classified by Sustrans as a Places for Everyone Category 4 project. These are considered to be,

“highly ambitious and complex transformations of the urban environment, requiring the maximum support and oversight from Sustrans as project delivery partners.... eligible for multi-year and multi-million pound funding (over £2million grant).”

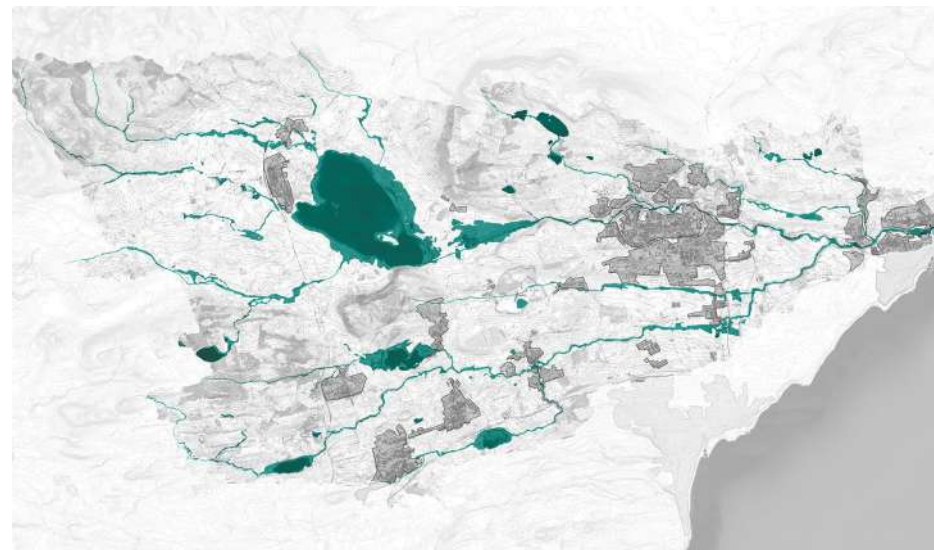
Sustrans Project Pack v1.0 Category 4, page 3
As they are the primary funder for The Leven Connectivity Project Stage 2 work, this Concept Design Masterplan Report will be submitted to Sustrans as part of the funding application for future project delivery. If the proposals are approved, and if the funding is successful, the Concept Design Masterplan will be taken through to form the basis of Stage 3 Developed Design.

“All projects, regardless of size, scale or scope, must demonstrate satisfactory completion of all project stages. The satisfactory completion of project stages will be reviewed by Sustrans at pre-determined gateways during project delivery.”

Sustrans Project Pack v1.0 Category 4, page 7



1



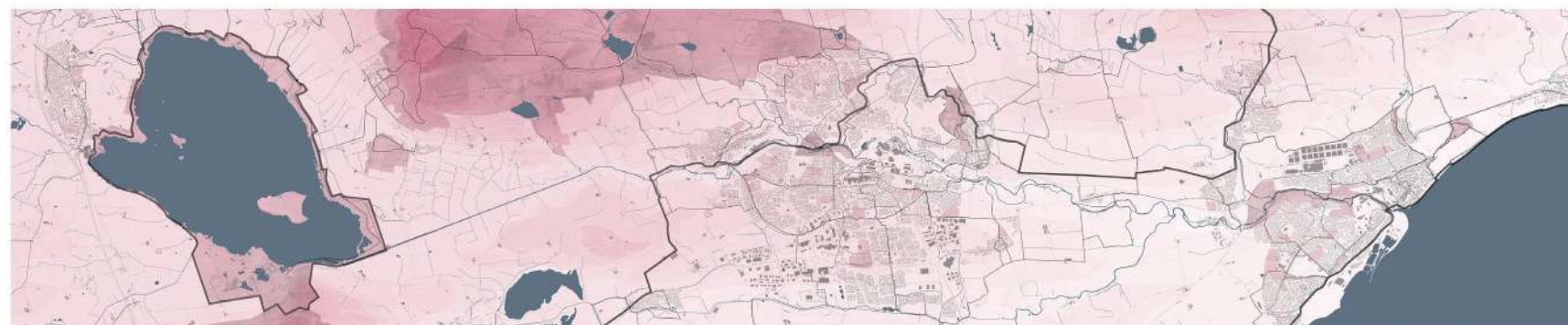
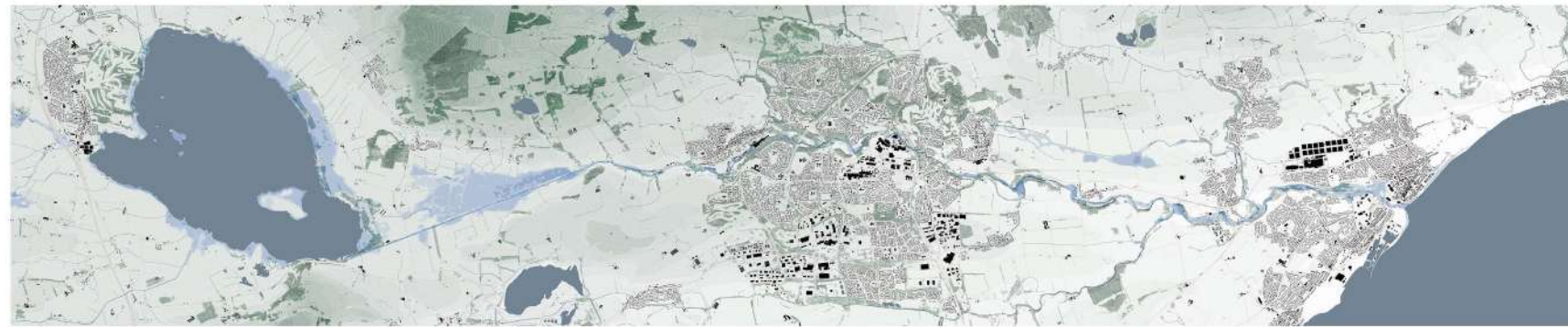
2

Overview

The Visioning and Integrated Masterplan Report delivered by Iglu Studio in June 2019 presented a collation of existing data within the River Leven catchment area. The report covered three landscape scales which progressively sharpened in design resolution: the wider Catchment Scale, the River Scale and the final 5km stretch where the river meets the Firth of Forth, the Connectivity Project.

Catchment scale

Initial analysis at the catchment scale identified potential issues linked to erosion, deforestation and flooding but also opportunities to reforest much of the catchment area as a means of natural flood management. Further detailed



3

IMAGES

- 1 Conceptual Visioning image
- 2 The catchment and associated floodplain: a dynamic landscape unit
- 3 From the loch to the sea: ecology, economy and connectivity

analysis across the catchment should be produced in order to identify the most suitable areas for a variety of natural flood management approaches. Ultimately, to effectively address the climate emergency further research at the river catchment scale should also be undertaken in the fields of renewable energy, sustainable transport and agricultural reform, to name just a few.

River scale

Ultimately, one of the key goals of the Leven Programme is to establish more direct pedestrian and cycle routes from Loch Leven (the source of the river) to the sea. It is envisaged that this new route would provide a major tourist

destination with opportunities for leisure and recreation to boost the regional economy. References to the industrial heritage of the river would provide a coherent narrative and tell the story to a contemporary audience. Other opportunities at the river scale covered in the report included agro-forestry, addressing hydrology issues and improving urban ecology.

The Catchment and River scales are inherently relevant and important to the design of the Connectivity Project and vice-versa.



1

The River Park

This final stretch of the river where it empties into the sea has been selected as the first built project to be undertaken as part of the Leven Programme. The production of initial habitat surveys for the River Park area allowed for a more detailed approach in the Visioning and Integrated Masterplan Report, with 8 distinct character zones proposed within the site and key design principles established through the construction of a large scale model of the existing landscape (see image above).

The 8 character zones consisted of a gateway park, a riverside park, an 'incubator' greenspace (pollinating wildflower slopes), a woodland park, an activity park, a neighbourhood park, a riverside walkway and the river's edge (see Character Zones diagram, right).

In addition, the report set out a strategic programme for each of these areas from which the GAT brief identified a series of actions and principles that the Connectivity Project could include, but not be limited to. These formed the basis of the Stage 2 Concept Design Masterplan works:

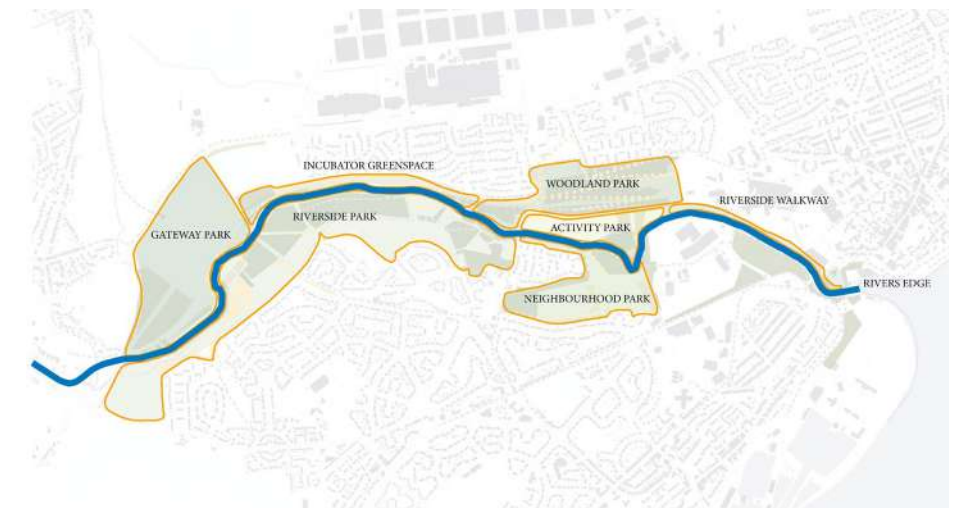
- River restoration and pollution control measures;
- The creation and enhancement of habitats, including woodland, wetland, grassland and pollinator patches, to provide opportunities for recreation and improved ecology;

- The creation of multifunctional, accessible greenspaces;
- The upgrade and creation of new footpaths, cycle routes and greenways to provide active travel and recreation opportunities;
- The creation of play areas, community multi-use areas, growing areas and community gardens, and outdoor exercise facilities;
- A performance space to encompass a range of future activities;
- The installation of signage, interpretation and other interpretative structures such as viewing screens, pond dipping platforms, activities etc;
- The provision of quality, long-lasting and uniform amenities such as benches and litter bins.

Overall, the vision for the area is of a well-connected, multi-functional and valued network of green and blue spaces which provide a wide variety of recreation and leisure opportunities for residents and visitors as well as enhancing the biodiversity of the area and ensuring that future maintenance is more sustainable.

AV IMAGES

- 1 The Connectivity Project: using the model to identify design principles
- 2 Character zones diagram



2

A multi-scalar approach

As with the Stage 1 Visioning approach to first investigate and identify wider scale landscape dynamics, the production of the Stage 2 Concept Design Masterplan followed a multi-scalar process looking at three scales which consecutively sharpened in design detail.

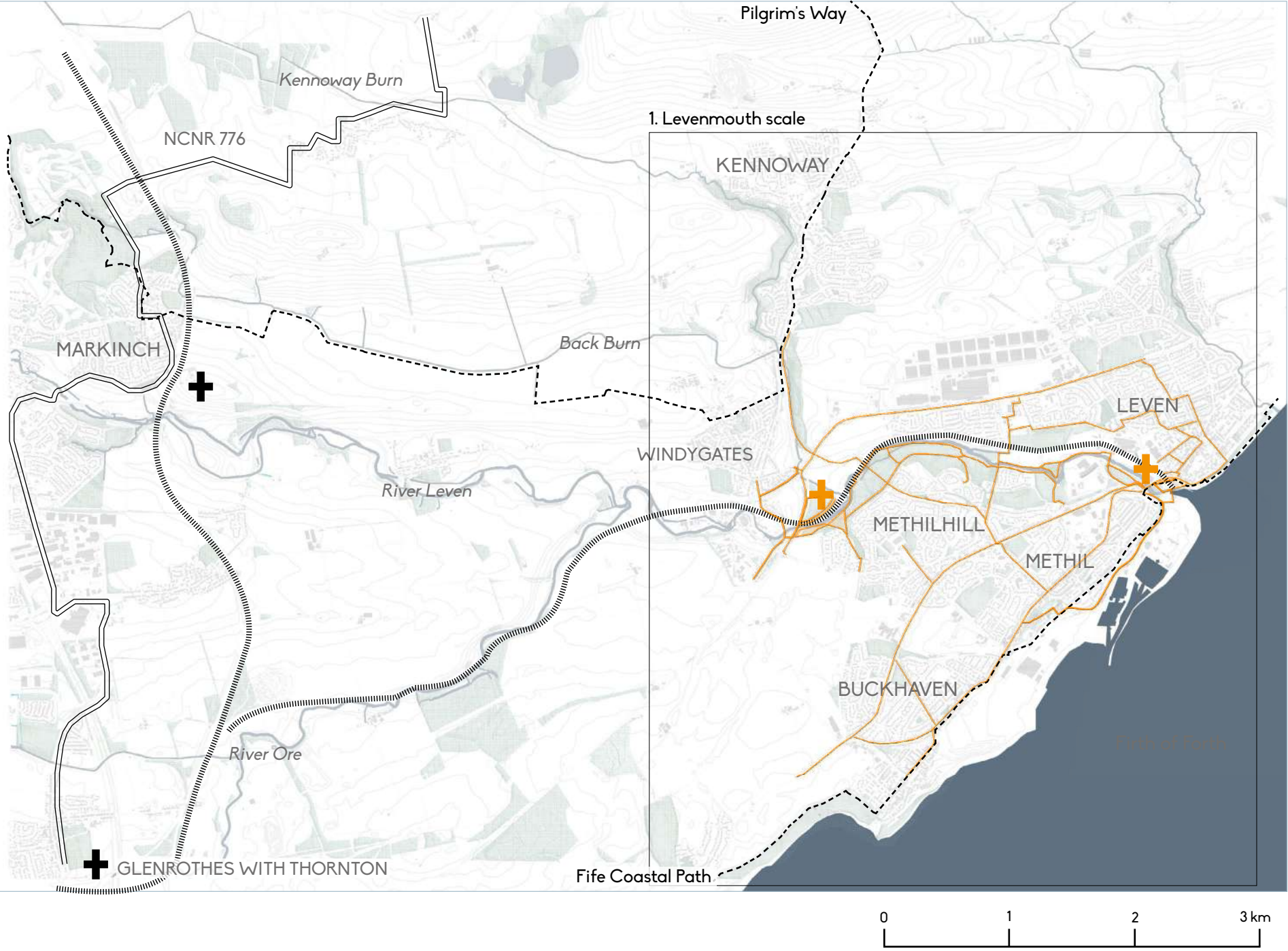
- 1. Broad design principles - **The Levenmouth scale** including integration of Amey's active travel network connections to Windygates, Kennoway, Buckhaven and potentially to Markinch and further west to Glenrothes.
- 2. Site specific information - The **River Park scale**. The 5km stretch of the River Leven corridor from Windygates to the Firth of Forth at Leven.
- 3. Detailed site studies - The **Garden scale**. An increased level of study and design for six key connecting spaces within the River Park situated around crossing points along the river. The two garden scale studies at each end of the River Park include connections to the new rail stations at Cameron Bridge and Leven.



A multi-scalar approach: the three scales explored by the masterplan



The River Leven viewed from marshy grassland near Kirkland Dam



Context

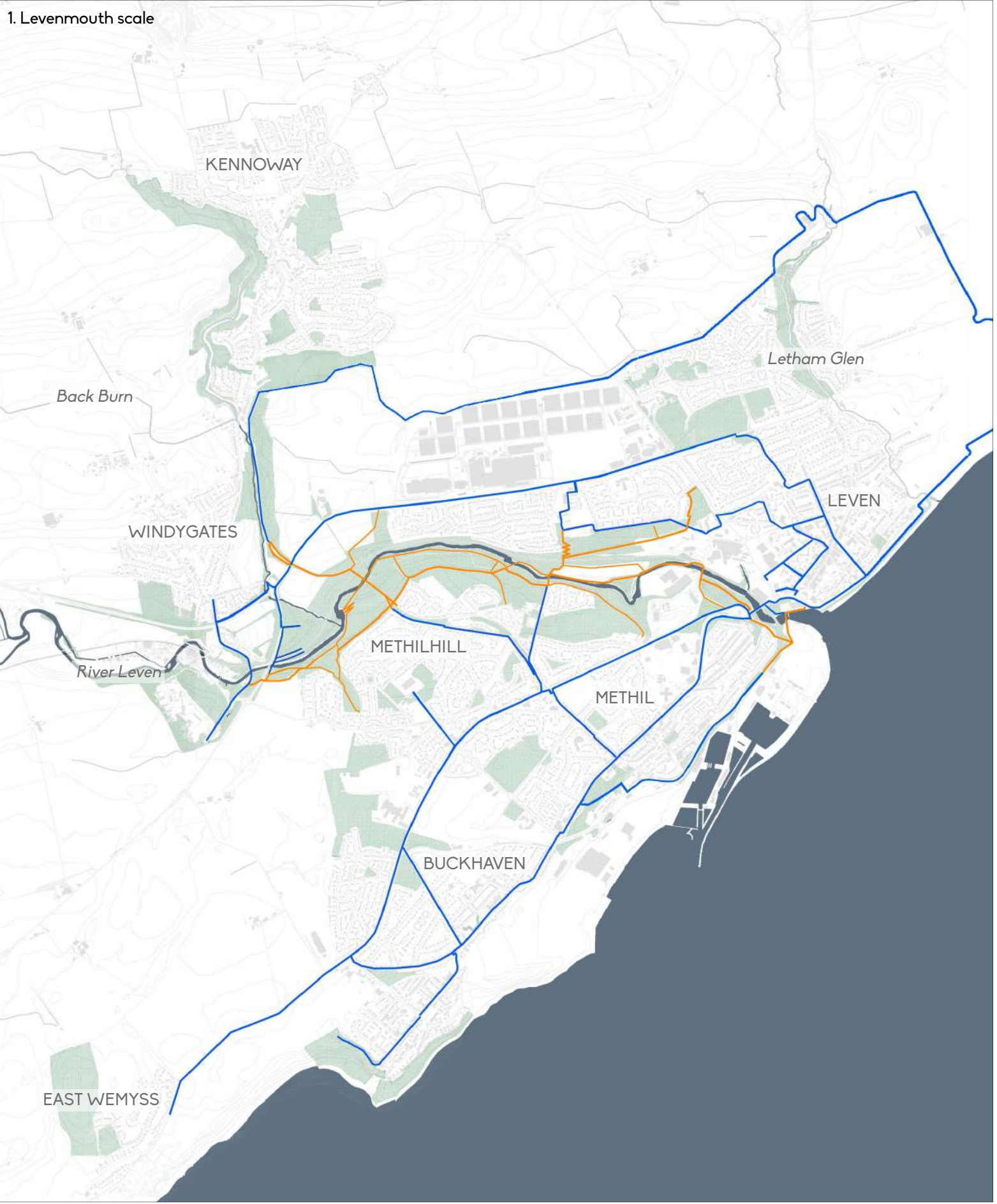
Legend

- Rail-line
- Existing long distance footpath
- ==== National Cycle Network Route 776
- ✚ Existing train station
- Proposed Active Travel Network
- ✚ Indicative locations of Levenmouth train stations

The re-opening of the Levenmouth rail-line will provide significant social benefits and opportunities, with greater access to jobs across Fife and a direct route to Edinburgh, which is estimated to be a 70-75 minute journey.

The adjacent diagram identifies two of the most significant existing pedestrian routes (the Fife Coastal Path and the Pilgrim's Way) which the Connectivity Project will join up with as part of a wider strategy to connect traffic-free routes within the surrounding area. Furthermore, the proposed active travel network will also extend into the local neighbourhoods within Levenmouth to provide a more connected walking and cycling network (see masterplan section for more detail).

The National Cycle Network Route 776 runs north from Kirkcaldy to Milldeans Wood north of Glenrothes, linking Route 76 and Route 1. A future extension of this route along side the River Leven approximately 5km east from Markinch could connect up with the proposed path network at Windygates.



Active Travel Network

Legend

- Existing greenspaces
- River Park routes
- Active travel network overview (for detailed breakdown of route typologies see Levenmouth Connectivity_ Additional Routes Final Report produced by Amey 03/06/2021)

Since the original Visioning commission in 2018 Iglu have extensively surveyed the existing routes within the river valley and sense-checked the most practical and feasible connecting routes with locals during the various engagement events which have been held in Levenmouth and online.

The River Park routes mostly follow existing desire lines as the most direct connections between destinations. Throughout the concept design phase Amey and Iglu have frequently collaborated both on-site and remotely to ensure that the wider active travel network and the river park routes connect up seamlessly.

Visualisations of the river park path typologies are presented in the Illustrating the Proposals section on page 54-55.



BEFORE



AFTER

Active Travel Network Summary

The Active Travel Network was developed by specialist consultants as well as close working with the project team and the Sustrans Places for Everyone Team.

- Urban Active Travel Network developed by Amey, supported by Fife Council and Sustrans.
- The River Park and River and Rail Crossings developed by Iglu Studio, supported by Green Action Trust, Fife Council and Sustrans.
- Green Network developed by Forth Rivers Trust (FRT) and supported by Buglife, Fife Council, Fife Coast and Countryside Trust (FCCT), Iglu Studio and NatureScot.

Feasibility study

Active travel consultants Amey assessed and identified a proposed Levenmouth wide active travel network and from that developed a concept design.

A feasibility study assessed all existing, potential and community proposed routes in the area. The network was then divided into **38km** of routes categorised into Key Routes, Connecting Route and Riverside Routes.

- **Key routes** – along strategic travel corridors which provide better active travel infrastructure between communities and to trip generators;

- **Connecting routes** – provide connection between other types of routes. Shorter than key routes and predominantly located within residential areas as opposed to along main radial roads;
- **Riverside routes** – links through and along the river and proposed River Park. These will serve as both recreational and functional routes.

These routes were then assessed against the scheme objectives to create a proposed priority network of approximately **24km** (see page 13). Of this 24km, **10km are segregated** achieved through the reallocation of road space, reconfiguration of current layouts, and removal of parking (example provided above). A further **11km** of shared use riverside routes are proposed within the River Park.

Key urban active travel routes

For the trafficked and urban sections of the proposed network, a concept design was developed based on the core design principles outlined in Sustrans' Places for Everyone guidance and other relevant design guidance. Aiming to achieve a consistent network of bi-directional cycle provision and parallel footway, initial appraisals have shown that this can be accomplished on 10km of the proposed routes through the reallocation of road space, reconfiguration of current layouts, and removal of parking.

Where significant constraints exist and the desired type and width of provision could not be accommodated, a hierarchy of provision was adopted of:

1. Segregated, bi-directional provision using desirable widths and buffers;
2. Segregated, bi-directional provision using minimum widths and buffers, where space was limited;
3. On-road cycle provision with traffic calming where the speed limit is 20mph and traffic flows do not exceed 2000 veh/day plus widening of footway to desired width, but if not possible to minimum width; and
4. Shared provision only considered along short sections where no other provision could be delivered.

Key aspects of the proposals include:

- Road narrowing, removal of hatching, removal of parking
- The minimum road width considered is 6m as many of the routes run along key distributor roads which are also bus routes
- At-grade crossings, parallel crossings and single-stage signalised crossings
- Vehicle free bridges
- Change of major roundabouts to signalised junctions
- Continuous footways

Green Networks

Green networks offer ways to enjoy the outdoors close to home and provide safe and quiet off-road access to all sorts of urban greenspace – and to other local amenities and the wider countryside. Activities involved in creating green networks help to reduce habitat fragmentation, contributing to habitat networks and biodiversity, as well as to human health and well-being. A well connected and thriving ecosystem can play a major role in mitigating the climate emergency through solutions such as reforestation, carbon sequestration and natural flood management.

The Green Network (GN) workstream for the Connectivity Project is led by Forth Rivers Trust (FRT) and includes NatureScot, Fife Council, Fife Coast and Countryside Trust and Iglu Studio. The GN team are tasked with analysis of the existing green network in Levenmouth, including riparian corridors, grassland and woodland and the development of proposals to increase wider ecological connectivity within the project area.

Some of the key outputs emerging from this process to date include:

- The identification of existing areas of amenity grassland suitable for renaturalising to rough grassland (through liaison with the Grounds Maintenance Service department at Fife Council)
- The identification of appropriate woodland management principles for areas of existing woodland and potential opportunities for further planting (see Woodland assessment and enhancement opportunities report May 2020)
- The identification of suitable pollinator corridors (see River Leven Pollinator Corridor Report July 2020)
- The identification of habitats, species and invertebrates within the river valley (see Habitat and Species Management Plan 1st Draft June 2020)
- The creation of a habitat toolkit aimed at enabling community ownership through self-directed transformation and management of a range of habitat areas within the Levenmouth area (see Grassland section of the Levenmouth Habitat Toolkit)



View of ancient willow trees at the river edge



WIDER ECOLOGICAL CONTEXT

Legend

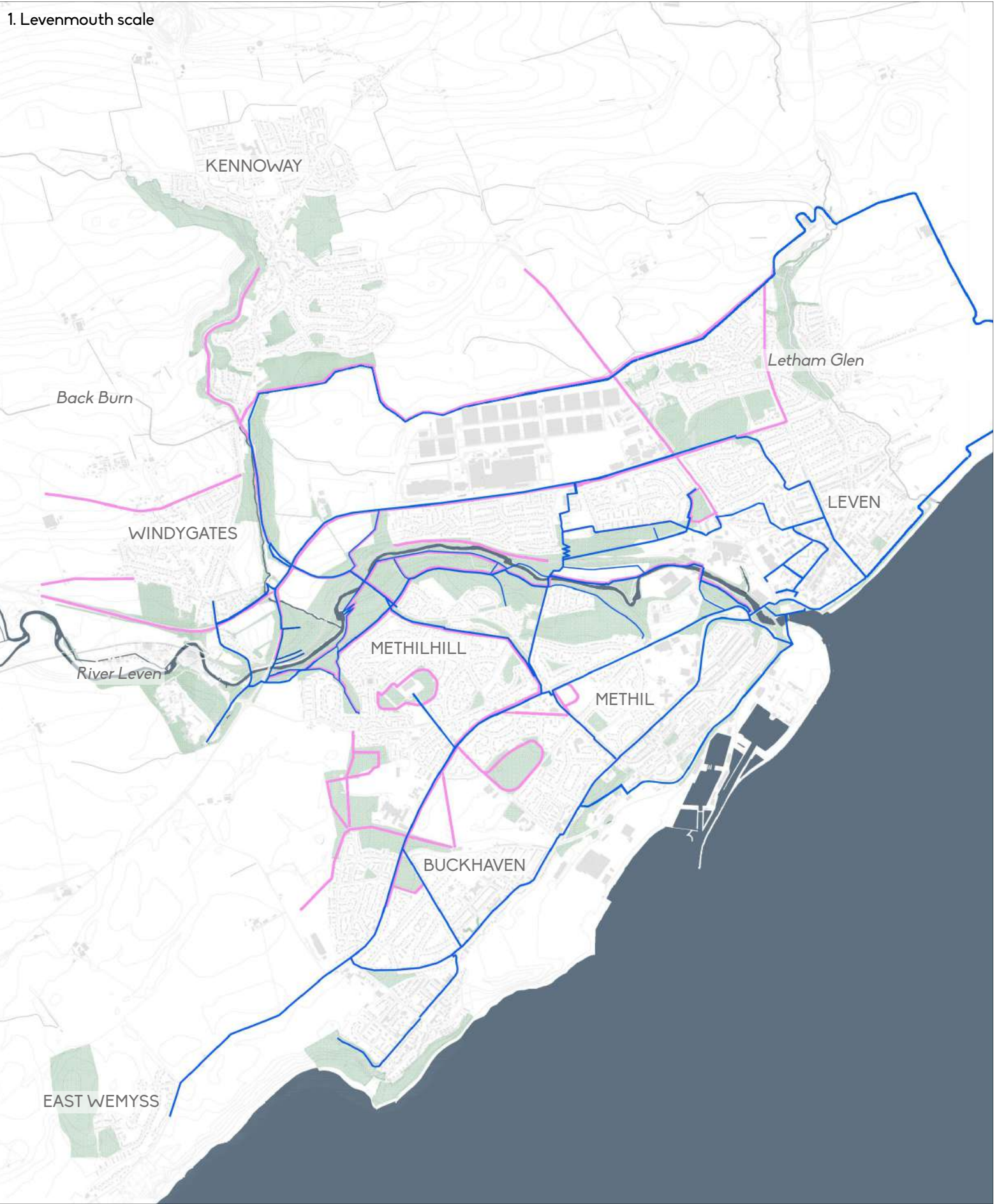
- Existing greenspaces (parks, riparian corridor, woodlands)
- Existing vacant and derelict land (to be brought back into use)
- Proposed green network connections (linkages for improved species movement)

The ecological approach for the Connectivity Project must emanate as much from the mosaic pattern of the surrounding landscape as from the project area itself. Correspondingly, we have broadly investigated the wider landscape context at the Levenmouth scale and beyond.

To ensure ecological connectivity and maintain healthy natural processes, rivers, streams and tributaries within the catchment should form part of a varied mosaic of habitat types along with farmland, woodland edges, linear habitats and open ground. This includes bare ground, inundated wetlands, shrubs, trees, coastal habitats, hedgerows and grassland/wildflower areas. Reforesting riparian corridors will provide a valuable habitat for species, help to stabilise slopes and absorb both diffuse agricultural pollution and excess water produced by heavy rainfall.

The areas of vacant and derelict land identified provide the function of connecting patches within the green network when combined with pollinator corridors, hedgerows and native woodlands.

A well connected cycle and pedestrian network linking Levenmouth with Buckhaven, Kennoway and Glenrothes and beyond, will provide opportunities for further ecological connectivity. This can be achieved by establishing a variety of habitats such as native hedgerows, and pollinator corridors alongside the active travel routes.



POLLINATOR CORRIDORS

Legend

- Existing greenspaces
- Proposed active travel network
- Proposed pollinator corridors

Up to 32km of partially continuous corridors have been identified on the adjacent diagram for potential transformation into pollinator corridors. These types of corridors vary from roadside verges to active travel routes alongside schools, parks, greenspaces and arable land.

Originally illustrated in the Green Network Phase 1 Report produced by Forth Rivers Trust in June 2019, the proposed pollinator corridors have huge potential for engagement opportunities with schools and local community groups. The GN Phase 1 Report also provides a breakdown of the different types of paths the pollinator corridors would follow (eg, roadside paths, park edges, verges). In addition, the corridors could be significantly enhanced if local businesses and residents are encouraged to strategically plant wildflowers on their premises. Local farmers are also key to this proposal with corridors running alongside arable land requiring the controlled management of pesticide use.

A detailed description of the steps needed for communities to transform amenity grassland to wildflower areas is provided in the Levenmouth Habitat Toolkit Grassland chapter.

Fundamental to any potential development project is an understanding of the site, the space, the place. This understanding is gained through a wide range of techniques including field study, desktop research and engagement. The following pages present a collection of panels that illustrate some of the surveys carried out by the project team, including a range of information and material gathered from the comprehensive survey of the existing path network within the river valley, through to the Phase One Habitat Survey, landownership within the river park area and a CAD base with 1m OS contours. Flood modelling is currently being undertaken by Atkins as part of the River Restoration commission and the results from this will inform the masterplan once the information is received.

Fundamental was the field survey, the analytical survey, walking the site, observing and recording the visible (and invisible) archaeological and historic features in the landscape. The field survey work included noting man-made features such as buildings, structures, new and historic, derelict areas such as the Creosote site, along with managed vegetation. In addition natural habitats and geological and ecological phenomena were recorded. As such the field survey work was an especially powerful tool to understanding the development and evolution of the river valley, its cultural shifts and historical traces. This, combined with desk-based research of current and historic maps, aerial photographs, historical documents, oral testimony and the findings of the previous Stage 1 research, was key to understand fundamental aspects of the river. This work underpins the design process and also the conservation, protection and interpretation of the landscape.

Walking and observing the site over the past three years it is important to note the realisation of the river and river valley as a dynamic, sensory and unique place. This is something experienced every day by those who inhabit and use the site and who have conveyed this message through the engagement process.

“landing...the moment when a designer reacts to the difference between his or her preconceived idea of a place and the reality that appears during the first steps of a visit”
Christophe Girot

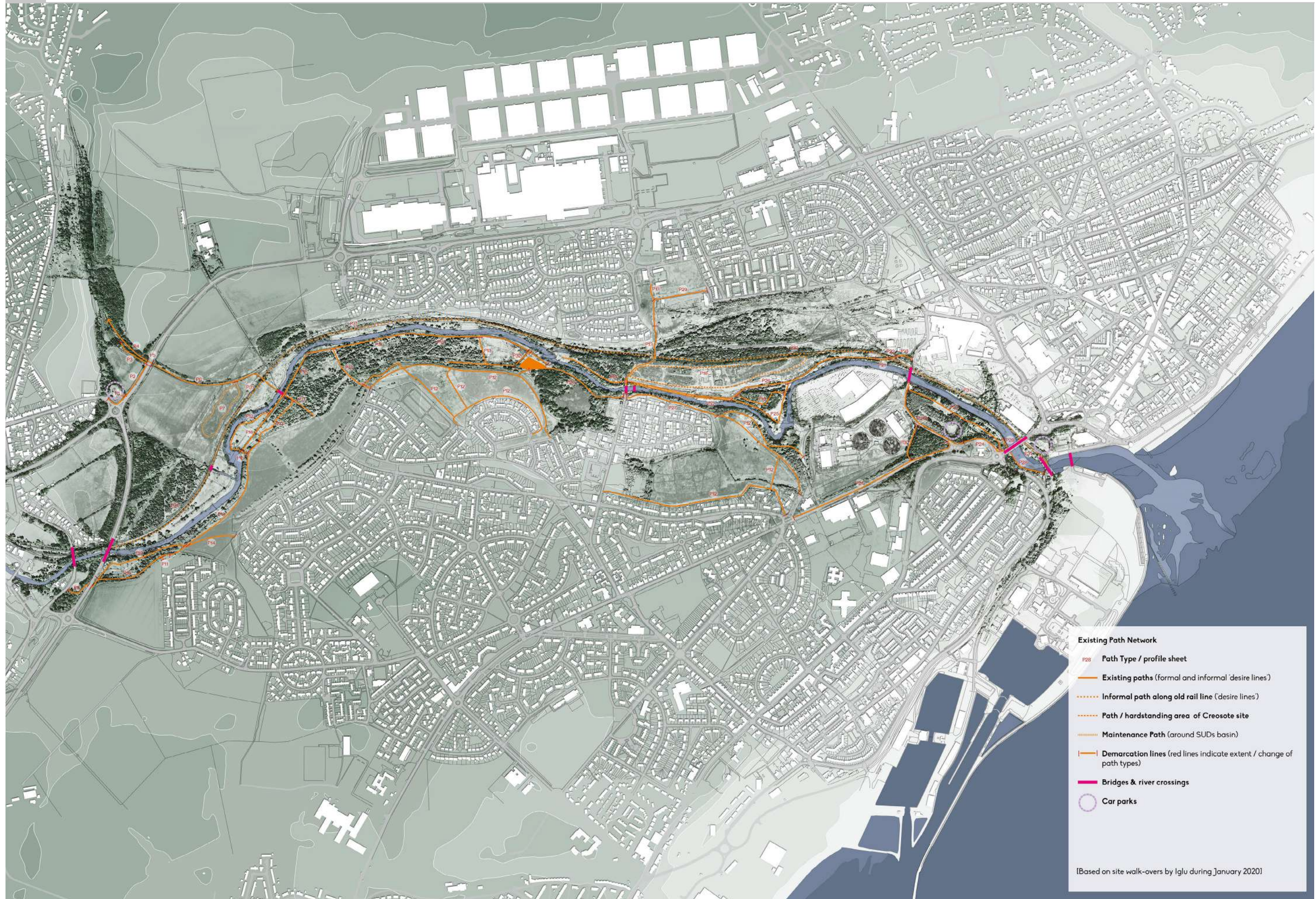
Local Development Plan:

The survey panel opposite right, illustrates the key allocations and designations of the FIFEPlan Local Development Plan (LDP). The LDP was part of the considerations in the Stage 1 development process and is important to the landscape of the River Park in respect of Green Network linkages with neighbouring communities and villages.

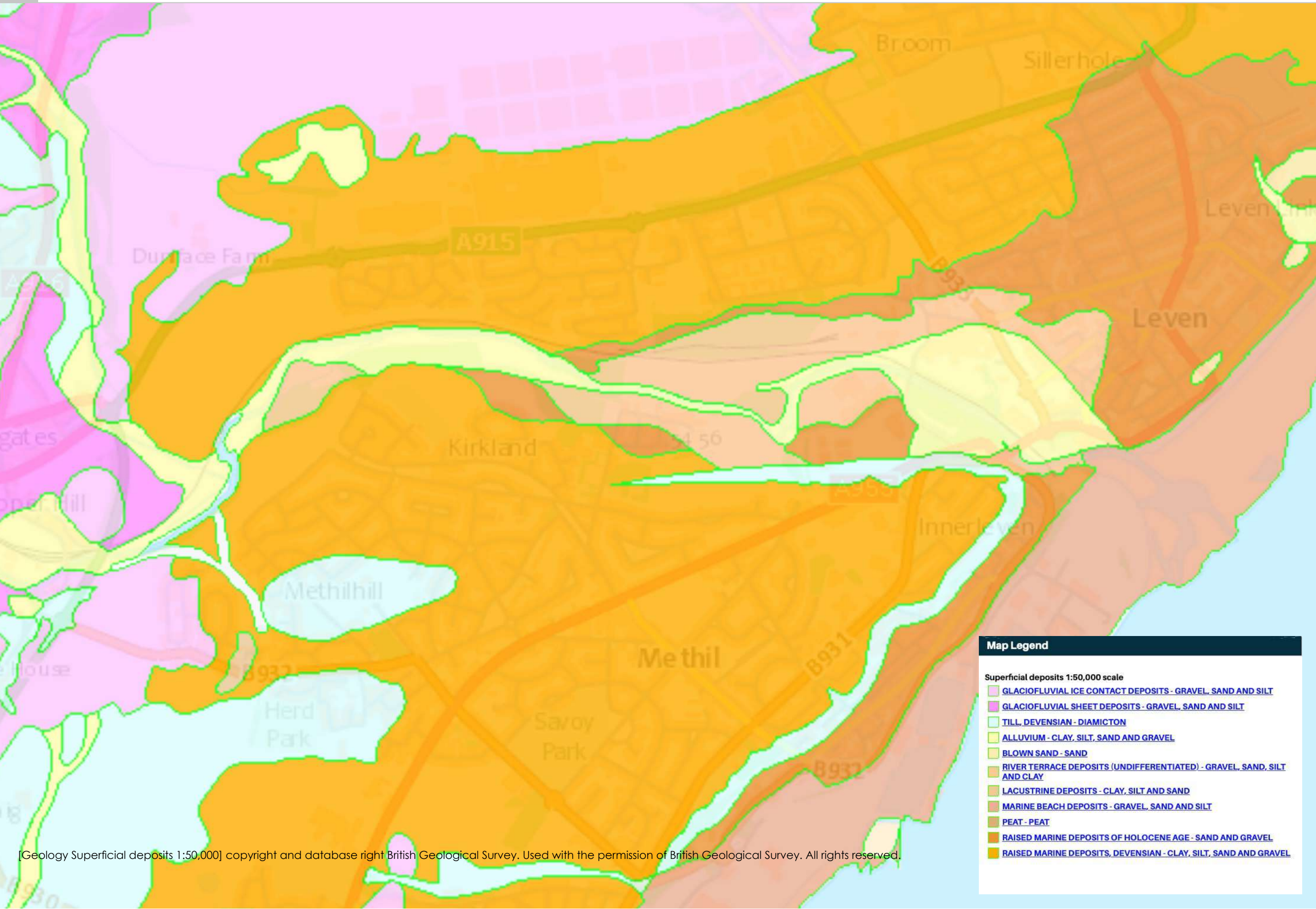
Key for further consideration and development is the LDP allocation of the Creosote site as a Safeguarded Employment Area. This allocation has been part of on-going discussions with Fife Council and with the owners of the Creosote site, with a view to the removal of the allocation in the forthcoming LDP review process in line with the masterplan proposals to transform the site for community use.

It should be noted that the surveys included in this report are of the river park area and any surveys of the wider Levenmouth area have been covered by Amey and included in the Levenmouth Connectivity_Additional Routes Final Report produced 03/06/2021.









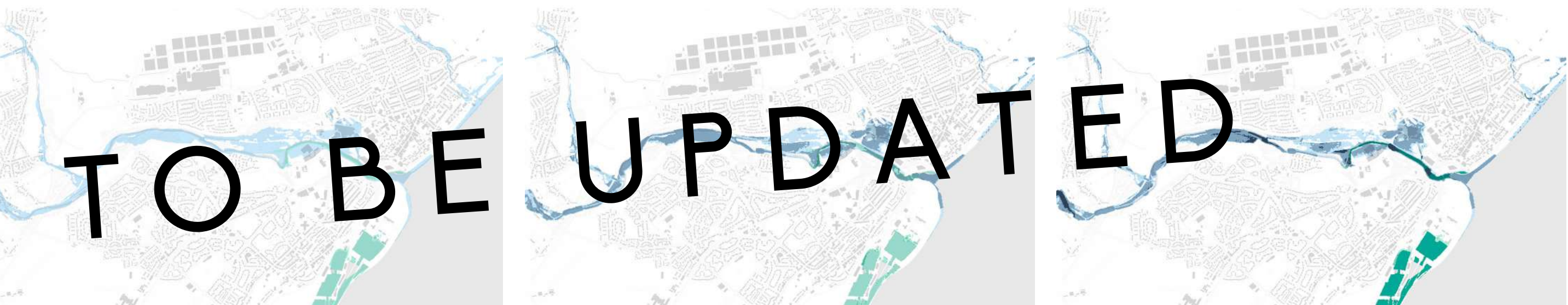


High likelihood of fluvial and coastal flooding (1:10 chance any one year)

Medium likelihood of fluvial and coastal flooding (1:200 chance any one year)

Low likelihood of fluvial and coastal flooding (1:1000 chance any one year)

- Up to 30cm
- Between 30cm and 1m
- Greater than 1m



High likelihood of fluvial and coastal flooding - to a depth of 30cm

High likelihood of fluvial and coastal flooding - depth between 30cm and 1m

High likelihood of fluvial and coastal flooding - depth greater than 1m

Flood modelling is currently being undertaken by Atkins as part of the River Restoration commission.



^
View upstream from the footbridge near Kirkland Dam

"It is interesting sometimes to stop and think and wonder what the place you are currently at used to be like in times past, who walked there, who worked there and what the walls have seen."
Patrick Geddes

Telling the story

The following section contains further research into the background and heritage of the Levenmouth area along with a summary of the engagement process, including the early public events held in February and March 2020, details of the post-Covid-19 alternative engagement approach and an outline of emerging community desired outcomes. For a detailed report on the engagement process to date please refer to the Levenmouth Active Travel and River Park Concept Design - Engagement Report issued 23/09/2021.



^
C-listed footbridge from former Kirkland Works, late 19th century

“Prior to the rapid urbanisation of the 1800's, Scotland's rivers were of very good quality. The deterioration of river water quality throughout the 19th and 20th centuries was mainly caused by the discharge of sewage and changes in agricultural and industrial practices which accompanied the economic lifestyle of the time. Significant efforts to restore Scotland's rivers did not occur until 1965. Reductions in heavy industry, the enforcement of new legislation and heightened environmental awareness have all contributed to improvements in river quality.”

Long-term river water quality indicator, SEPA

The River

The River Leven stems from Loch Leven, winding its way through the intensively farmed, industrialised and heavily populated valley before entering the Firth of Forth at Leven.

There is one significant tributary within the project area at the western end, the Kennoway Burn, which is also the focus of a river restoration project currently being undertaken by SEPA and led by CBEC. There is a minor tributary at the eastern end of the river with mature broadleaved trees overhanging the water. It is almost completely inaccessible, wedged between Sainsburys and an industrial estate with security fencing. This burn is within the tidal range, which extends west from the estuary to the Dam Wood.

The river corridor and all of its biodiversity is protected both by the steep valley formation of the landscape and the generous distance from neighbouring housing developments. The Kirkland housing south of the Creosote Site is approximately 25m from the river and the Mountfleurie housing above the northern slopes is around 35m though the inaccessible nature of the slopes increase this distance in practice. In addition, the majority of the site provides a significant buffer protecting wildlife and habitats from disturbance. Furthermore, in the absence of formal paths, users of the site have created a series of desire lines which mostly maintain an element of protection for the surrounding habitats.



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The river itself is full of potential for migrating salmon, sea trout, eels and lamprey. Flounder are also common within the tidal zone. The pools created above the two dams at Kirkland Dam and Burn Mill Dam, provide deep water for adult trout to feed in and to take cover. The pool at Burn Mill Dam would be ideal for learning to fish as it is so accessible and contains plenty of brown trout. The dams act as a major barrier for migrating fish however, and there is a need to reconfigure the dams to incorporate fish passes to allow fish upstream access to spawn or feed.



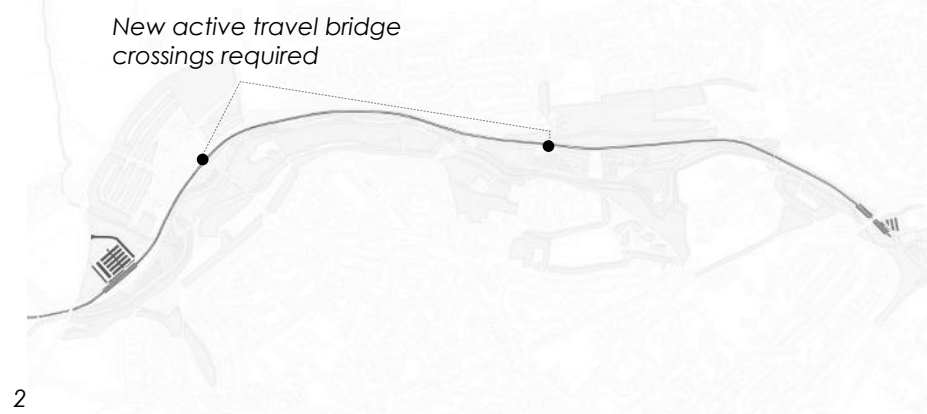
2

IMAGES

- 1 View upstream of Burn Mill Dam
- 2 The river, tributaries, dams and tidal zone



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IMAGES

- 1 View west of the Iron Brig from rail-line
- 2 The rail-line running through the river park

The Rail-line

The rail-line connecting Thornton and Leven via Cameron Bridge was opened in 1854 and served the local industry for over a century. The rail link stopped running passenger services in 1969 though partial freight use between Cameron Bridge distillery, the Methil docks and Methil power station continued until 2001.

In August 2019, the re-opening of the Levenmouth rail link was announced by Transport Scotland with an expected opening in 2023 to better connect communities within Fife and beyond (a trip to Edinburgh is expected to take 70-75 minutes).

Two rail stations will be installed as part of the project: one at Cameron Bridge and one at Leven. Network Rail presented the two preferred station layout concept design proposals to the public for consultation in the summer of 2021 - these proposals are illustrated in this report on page 66. Iglu Studio also prepared alternative masterplan responses to accord with each initial option to ensure that the river park path network will connect with pedestrian and cycle routes emanating from the stations. The twelve sketch options can be viewed in the supporting document Rail Station Options - Masterplan Considerations.

The concept design masterplan illustrated on pages 44-45 has been updated to include the station location layouts as selected by Network Rail. The Detailed Design stage 3 in 2022 will see continued collaboration between the project team and Network Rail to ensure that active travel routes connect from the river park to the stations themselves.

Integrating the rail-line and the active travel network

Currently the disused rail-line is a popular walking route for locals both for recreation and to quickly navigate sections of the river valley (eg. from the Leisure Centre at the estuary to the Creosote site/Methilhill/Mountfleurie). The installation of a new path network within the river park is fundamental to replace the popular pedestrian shortcuts currently well used by the community.

The new path network will require at least two new active travel bridge crossings and one existing replacement over the re-opened rail-line (locations identified on the adjacent diagram). One north-west of the existing river crossing near the Kirkland Dam and one at the northern entrance of the Creosote site. There is the potential requirement for additional rail-line crossings depending on the final station locations.

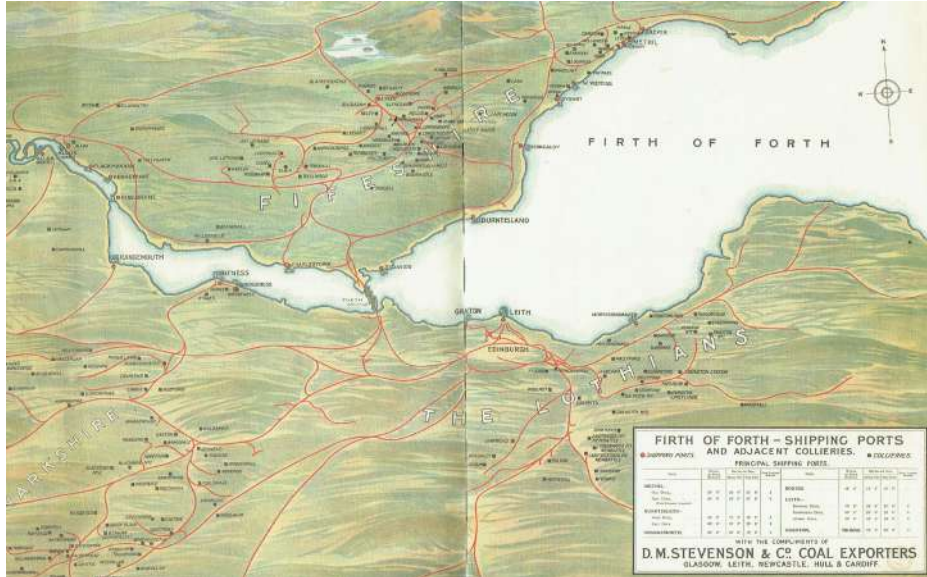
History of the area



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1100-1800

The oldest record of Leven dates back to the middle ages, specifically the first half of the 11th century when the village was gifted to the Culdees of Loch Leven. In reality the 'village' most likely only comprised of a manse and a couple of cottages. The first evidence of the existence of a riverside settlement and port at Leven relates to the 1546 donation of funds to repair the monastery at 'Levynnismouth.' It is also referred to as a small weaving village, suggesting that textile production was one of the first industries to establish in the area.

In 1609 the town was elevated to the status of Burgh of Barony which unlike a Royal Burgh was only able to grant the landowner (in this case the Archbishop of St Andrews) the option to hold weekly markets, rather than participate in foreign trade.

By the end of the 18th century, Leven was a thriving burgh with three ships and opportunities to engage in the Dutch and East Seas trades. Handloom weaving was now the principle industry in the area, with significant advances also made in salt extraction (hence the name Methill Pans), coal mining, rope manufacturing and bleachworks. A fishing fleet was able to supply the entire town with sufficient supplies of fish, including salmon caught locally in the river.

1800-1900

The story of the conurbation of Levenmouth is fundamentally connected to the Industrial Revolution. The lowering of Loch Leven in 1828 to serve industrial needs along the length of the River Leven saw the construction of several mills on the riverbanks in Leven itself.

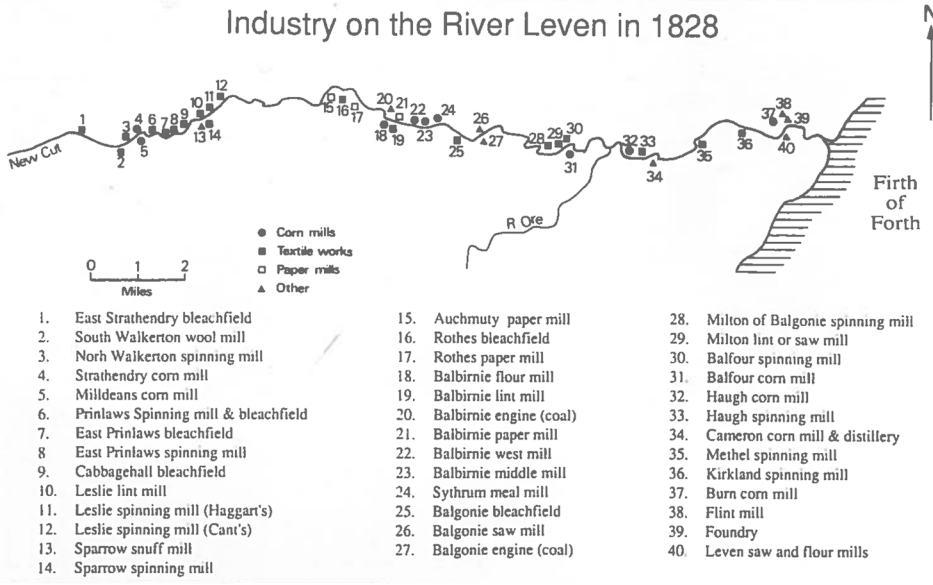
Handloom weaving remained one of the key trades of Leven until 1835, providing employment for hundreds of locals who worked from their own homes. This was superseded by the establishment of five spinning mills for flax and tow. Of significant note was the balance of both male and female employees.

The discovery of extensive beds of coal in Fife in the mid 19th century transformed Methil into one of Scotland's most significant coal ports, at its peak exporting millions of tons of coal every year around the world. During this period many rail-lines were built to serve the coalfields in the region, including the five-mile Thornton to Leven railway line via Cameron Bridge, which opened in 1854.

It was at this point that Leven started to attract tourists, steam-boats would depart for Edinburgh from the port twice a day in summer and once in winter.

IMAGES

- 1 William Roy Highlands map (1747-1752)
- 2 Geology map (1860-1940)
- 3 Firth of Forth - Shipping Ports and Adjacent Collieries (1914)
- 4 Industry on the River Leven (1828)



4

REFERENCES

- 1 Bygone Leven, Eunson, E. 1991

History of the area



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1900-2020

Coal mining continued as the primary industry and source of employment in the area until the 1960s. After WWI, Methil became Scotland's main coal port, by 1923 exporting over 3,000,000 tons per year. The docks were connected to the nearby colliery at Wellesley (in Buckhaven) which employed over 1,600 people. The discovery of cheaper sources of energy in the 1960s, such as North Sea oil and gas, along with the emergence of nuclear power brought about the beginning of the decline in the UK coal industry.

Regardless, Methil power station was built in 1965 on the site of a former golf course to burn coal slurry from the coal-washing plants of Fife's coalfields. Following the move into North Sea oil extraction, coal mining was supplanted as the main industry in the area by oil platform construction. The Wellesley colliery was used as the site for construction of huge rig 'jackets,' though employment in the area fluctuated due to the cyclical nature of the market.

The Levenmouth rail-link stopped operating passenger services in 1969 though it was still partially used until 2001 as a freight line between the Cameron Bridge distillery and the Methil Docks and power station. The power station was decommissioned in 2000 and demolished in 2011.

As of 2018, the Levenmouth area was the most deprived area of Fife. Manufacturing and construction are still the dominant forms of employment, predominantly Diageo and the Fife Energy Park along with retail and education/health services, although there is a relatively high level of unemployment in the area compared to other towns of a similar size in Scotland. Car ownership is low, meaning that many residents in the area are reliant on public transport.

In August 2019 the Scottish Government announced that the Levenmouth rail connection would be re-opened with two new stations constructed in Cameron Bridge and Leven.

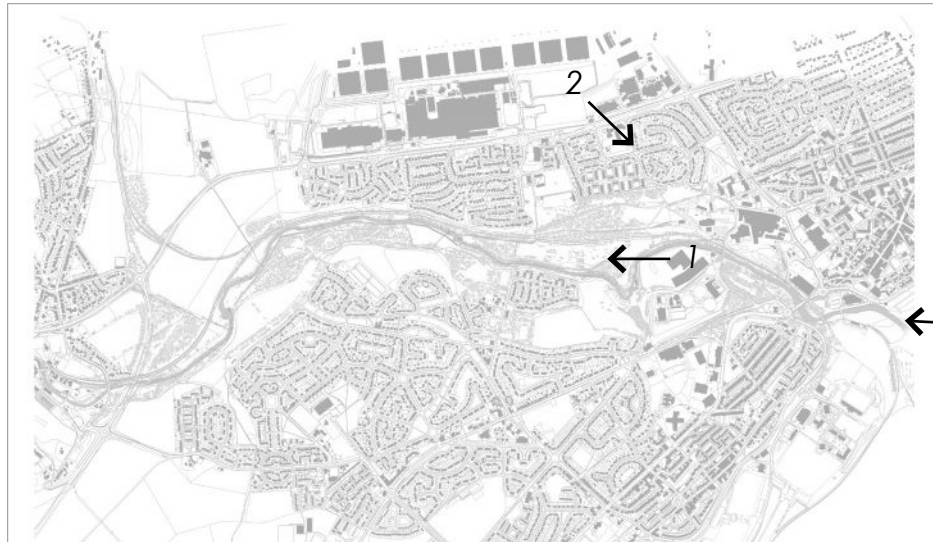
Above and on the following pages are some of the historical plans and photographs of Levenmouth, showing the evolution of the area and the growth and decline of industry along the river. The final Heritage panel on page 29 shows the historic traces of the mills and industry within the river valley.

It is anticipated that the re-opening of the rail-line together with the regeneration of the River Leven as part of the Connectivity Project will help boost the local economy and make this proud area of mid-Fife a thriving place to live, work and visit again.

IMAGES

- 1 Telegraph Pole and Railway Sleeper Works (1932)
<https://canmore.org.uk/collection/01257434>
- 2 Durie Foundry and docks development (1935)
<http://canmore.org.uk/collection/1438719>
- 3 Methil Power Station (1989)
<http://canmore.org.uk/collection/1672413>

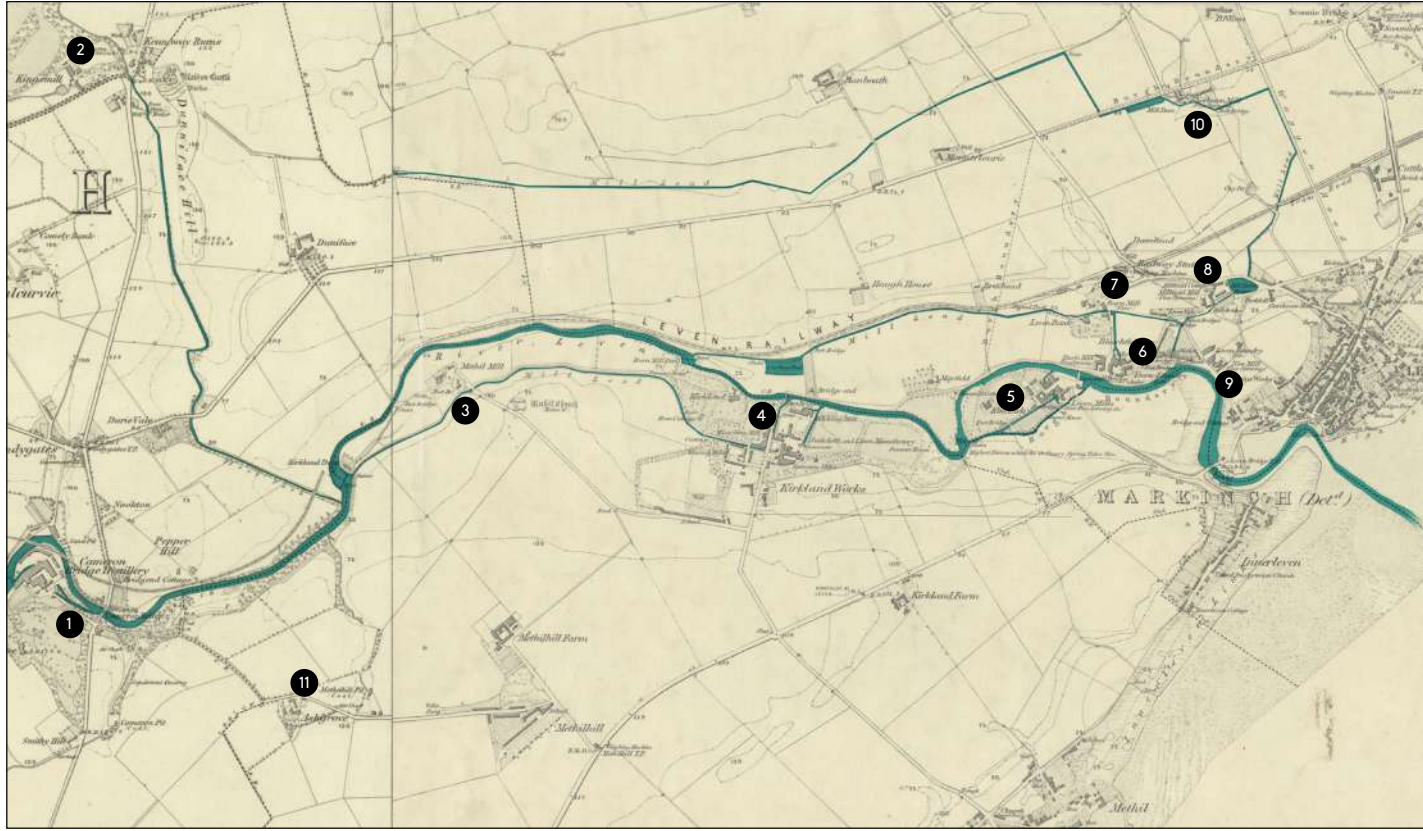
IMAGE LOCATION MAP



REFERENCES

- 2 Levenmouth Local Strategic Assessment, Fife Council, 2018

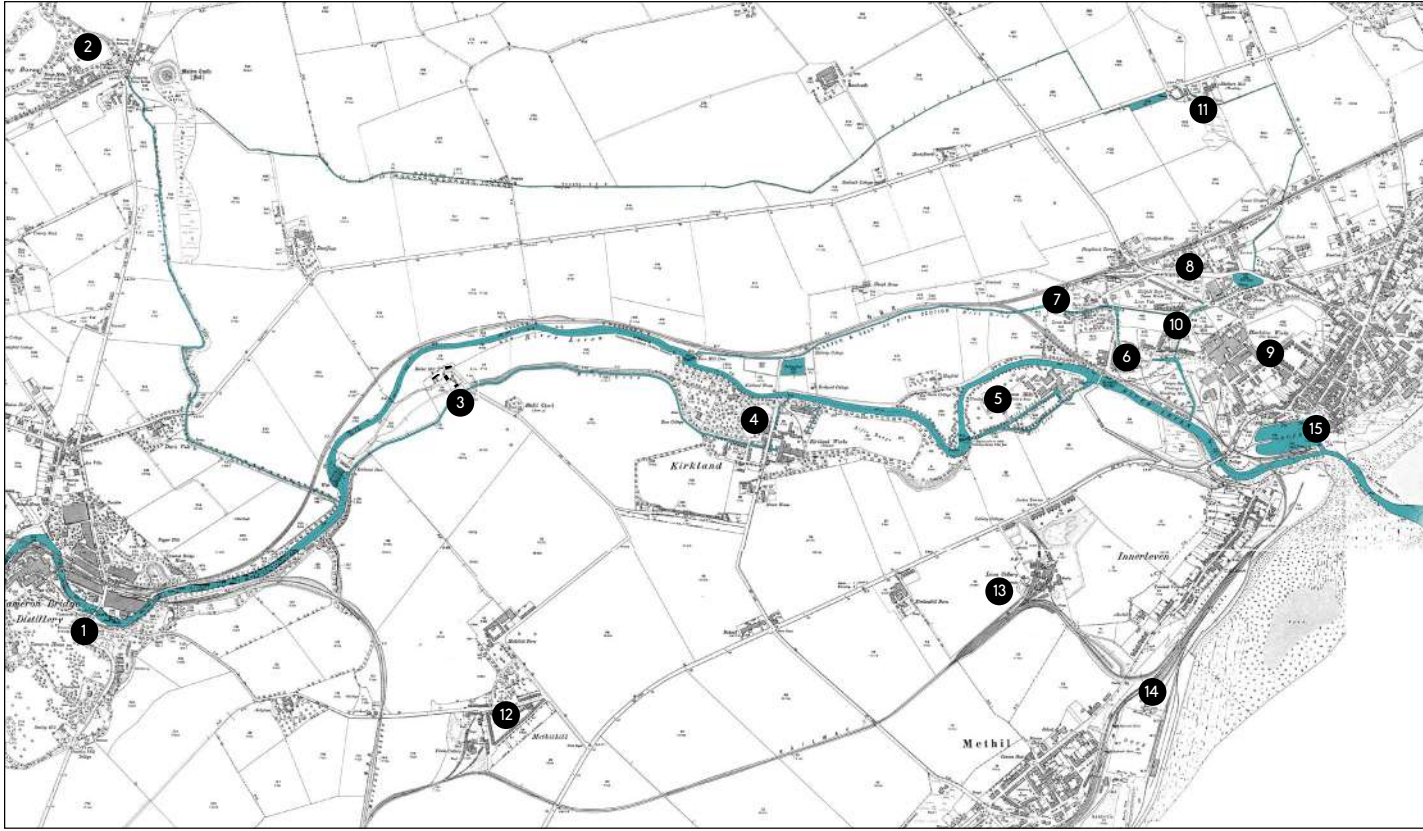
Historic maps



OS 6 inch 1843-1882

Industry

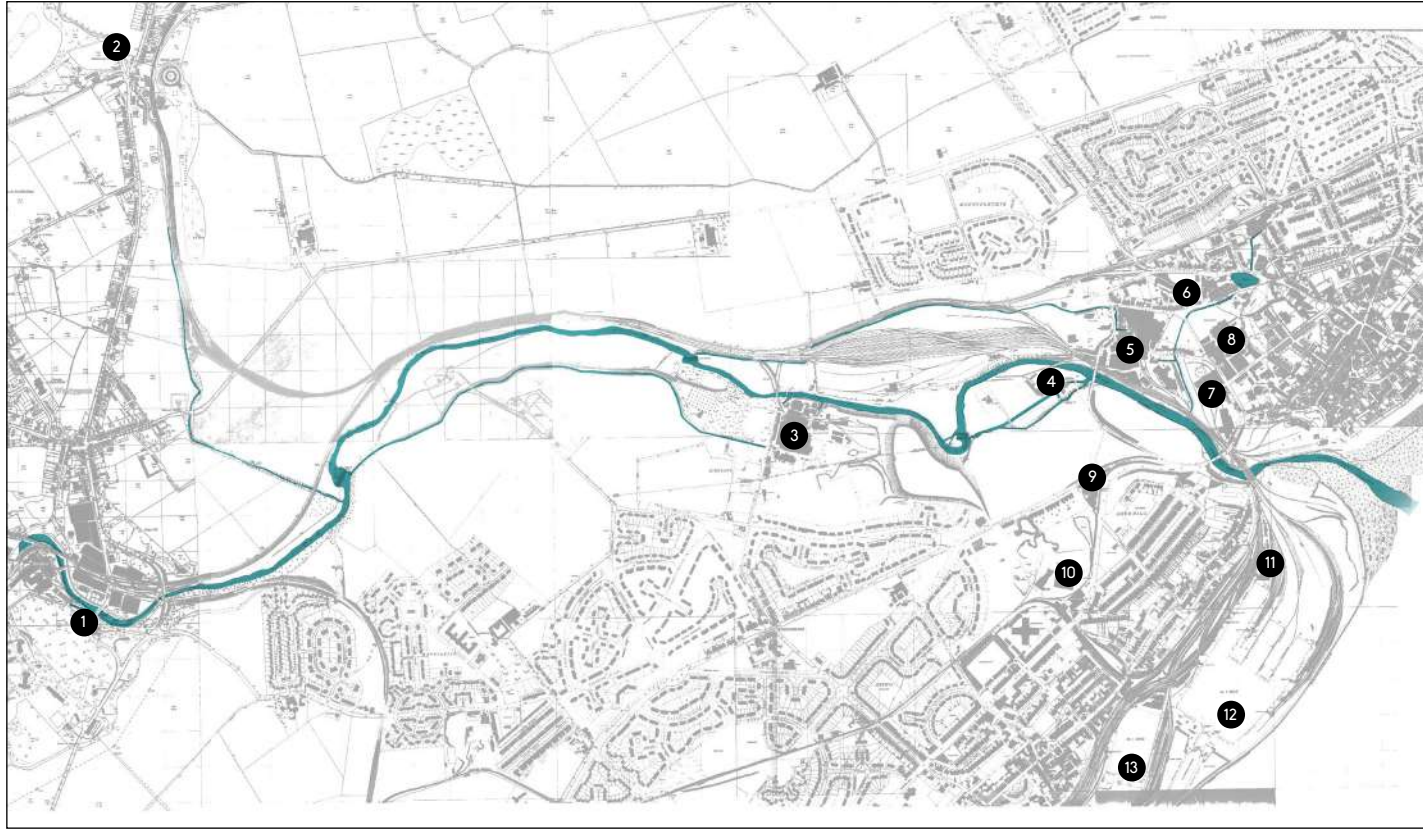
1. Cameron Bridge distillery
2. King's Mills (oatmeal and barley)
3. Methil Mill (spinning)
4. Kirkland Works (weaving, bleaching, linen manufacturing)
5. Leven Mills (flax spinning)
6. Durie Mill + Foundry (flax spinning + iron)
7. Burn Mill (flour)
8. Millfield Mill (flax spinning)
9. Leven Foundry (iron) + New Mill (flax spinning)
10. Shotburn Mill (thrashing)
11. Methilhill Pit (coal)



OS 25 inch 1892-1905

Industry

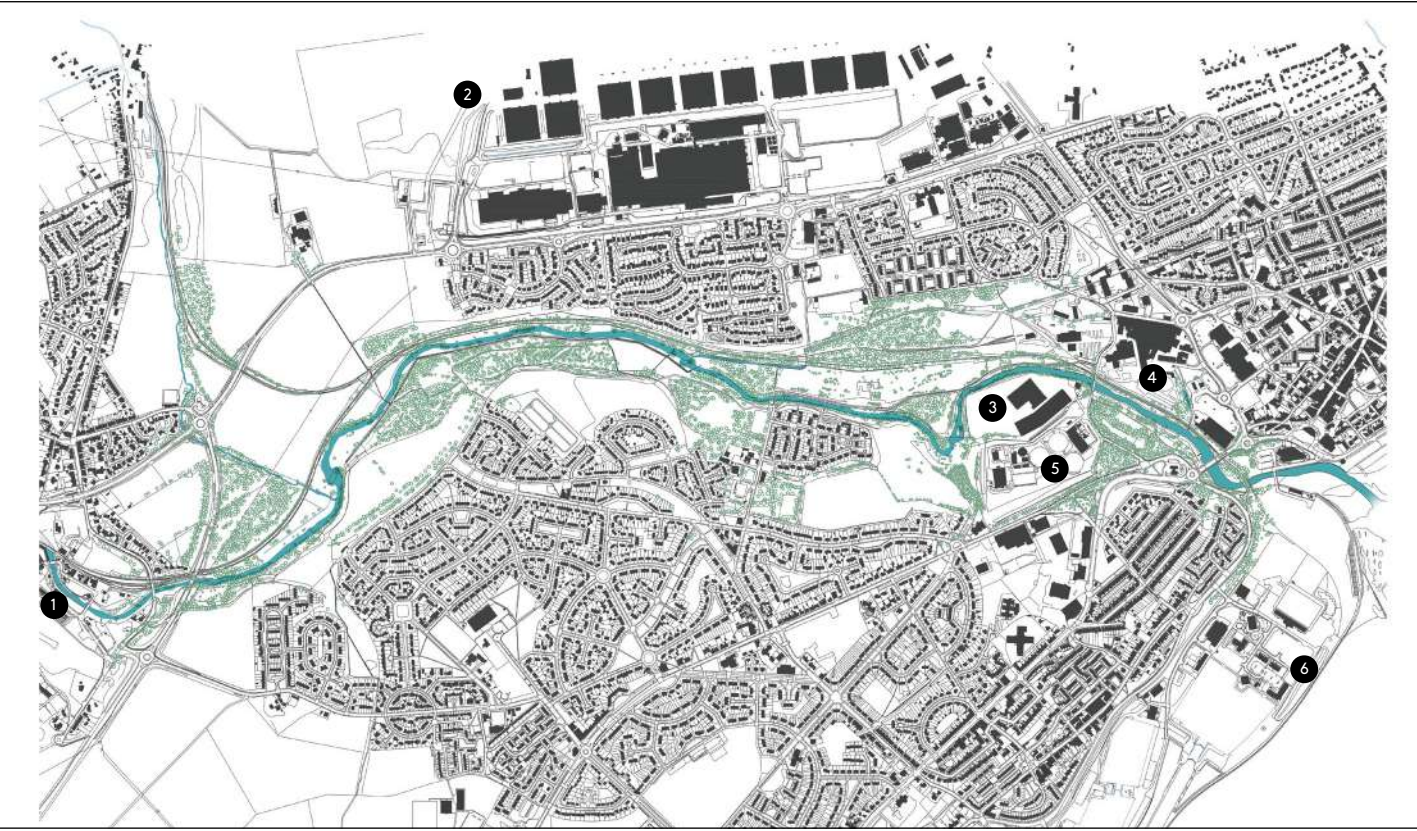
1. Cameron Bridge distillery
2. King's Mills (oatmeal and barley)
3. Methil Mill (spinning)
4. Disused Kirkland mill (flax spinning)
5. Leven Mills (oilcake and bone)
6. Wemyss Saw Mill
7. Burn Mill (threshing)
8. Millfield Mill (paper) + Millfield Rope and Twine
9. Hawkshaw Works (flax spinning)
10. Riverbank Mill (flax spinning)
11. Shotburn Mill (thrashing)
12. Pirniehill Colliery
13. Leven Colliery
14. Methil Dock No.1
15. Leven Dock



OS 1944-1969

Industry

1. Cameron Bridge distillery
2. King's Mills (oatmeal and barley)
3. National Steel Foundry
4. Leven Mills (fertilisers)
5. Durie Foundry (iron)
6. Fife Paper Mills
7. Wemyss Saw, Planing and Moulding Mills
8. Hawkshaw Works (flax spinning)
9. Methil Brick Works
10. Aberhill Works (fertilisers)
11. Hydraulic Power Station
12. Methil Dock No.3
13. Methil Dock No.1

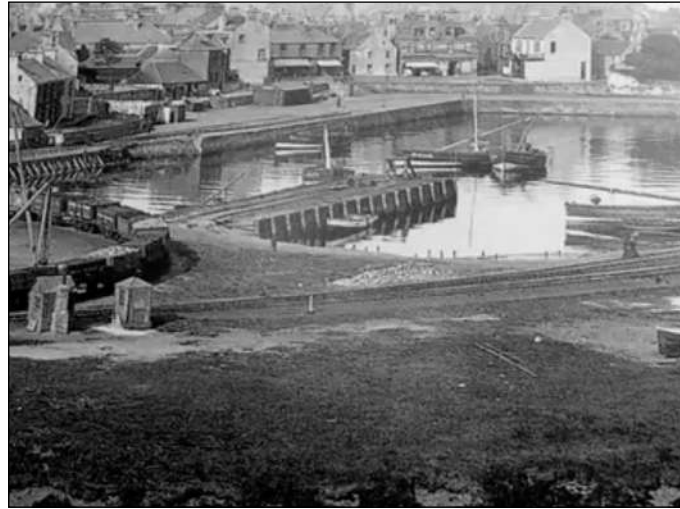


OS 2020

Industry

1. Cameron Bridge distillery
2. Diageo Global Supply
3. Donaldson James and Sons (timber merchant)
4. Pfaudler Balfour (manufacturer)
5. Waste Water Treatment Plant
6. Fife Renewables Innovation Centre

Historic photos



IMAGES ^ >

- 1 Leven docks (1889)
- 2 Leven docks (date unknown)
- 3 The Bawbee Brig (1907). Bygone Leven, Eunson, E. 1991
- 4 Mill opposite the Iron Brig (1908). Bygone Leven, Eunson, E. 1991
- 5 A boiler being towed from the Durie Foundry (1920s). Bygone Leven, Eunson, E. 1991
- 6 Donaldson and Sons Sawmills and Timber Yard (1932) <http://canmore.org.uk/collection/1257450>
- 7 Bruce and Co. Telegraph Pole and Railway Sleeper Works (1932) <https://canmore.org.uk/collection/1257437>
- 8 Cameron Bridge distillery (1980) <https://canmore.org.uk/collection/00570076>





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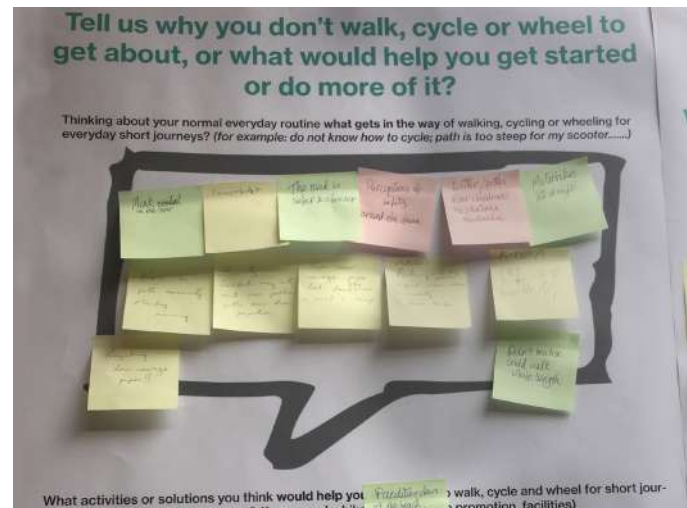
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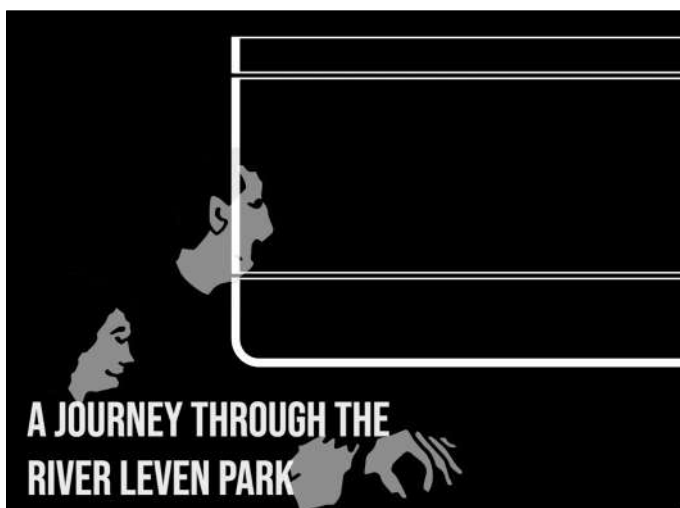
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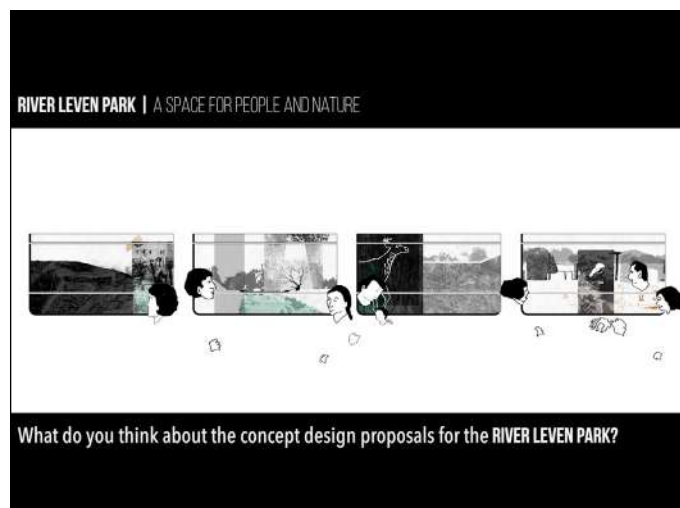
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9



10

IMAGES < ^

- 1 Fish in the classroom exercise at Methilhill Primary School (image: Methilhill Primary School)
- 2 Postcards from the Leven exercise with Levenmouth Academy pupils (image: Fife Council)
- 3 Mountfleurie Primary School pupils releasing fish fry as part of outdoors exercise (image: Mountfleurie Primary School)
- 4-6 Photos from the second engagement event at Methilhill Senior Citizens Centre
- 7 Behaviour change comments recorded at the second engagement event
- 8 Locals give their say at the BRAG market in September
- 9-10 Stills taken from the Journey through the River Leven Park animation

Concept Design Task 2 - Community Engagement

A fundamental part of the Connectivity Project has been about engaging with the local community and addressing issues raised through the development of the Concept Design Masterplan. Fife Council, the workstream lead assisted by Iglu Studio, have achieved this through the facilitation of public events, online and social media events and collaboration with project partners including Forth Rivers Trust, SEPA and principle funding body Sustrans.

While a separate detailed report of the Connectivity Project engagement work to date has also been produced (Levenmouth Active Travel and River Park Concept Design - Engagement Report), the following overview summarises the process so far and emerging community desired outcomes.

Stakeholder event

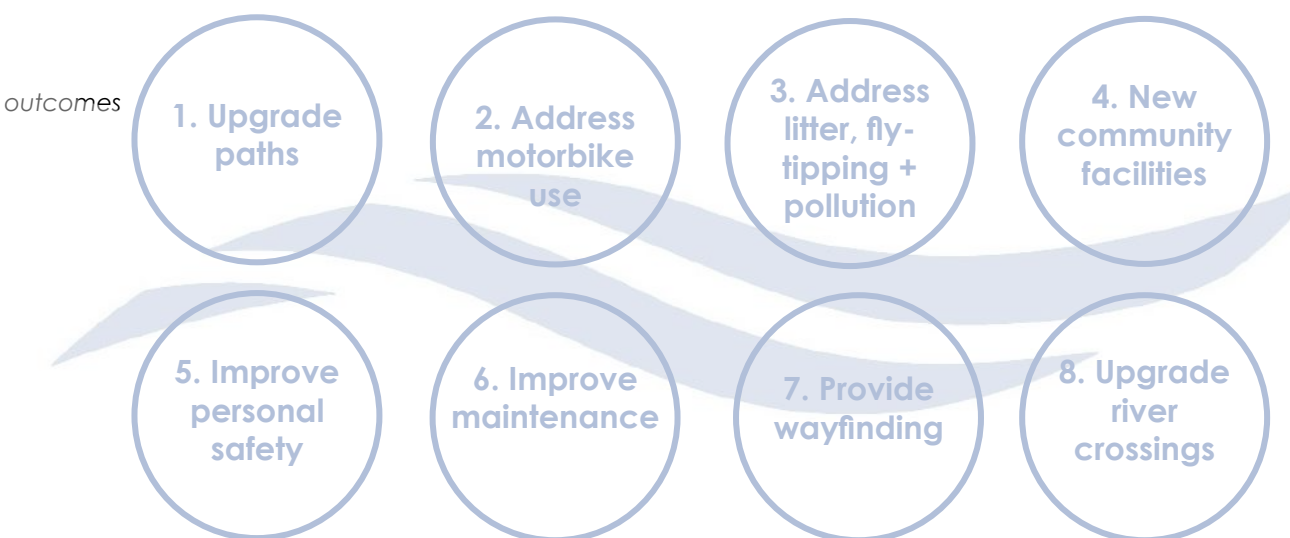
The first engagement event undertaken as part of the Concept Design phase was a stakeholder event organised by Fife Council in November 2019. Invitations were sent out to over 100 local stakeholders, businesses and community groups with 59 recorded attendees participating in the event. This introductory session intended to outline the ambition and scope of the project at an early stage to generate local support and ensure that the broad design principles for the River Park formulated in the Stage 1 Visioning Report were consistent with the views of key local figures. It was a productive exercise: the participants were unified in supporting improvements to the river valley which would benefit the local community and provide recreation facilities and better access to a valuable greenspace.

Public engagement events

Two public events were then scheduled to assess early opinions of the existing river valley from the community to be followed by a third event where an initial draft Concept Design Masterplan for the River Park would be presented and reviewed with locals in person. The first two events were held in Leven and Methilhill in February and March respectively: the final event was cancelled due to the onset of the Covid-19 pandemic. Again, like the stakeholder event, the participants at the two events were fully supportive of the project aims and furthermore were able to provide precise information about both positive and negative issues such as favourite routes for walking, running and dog-walking, wildlife spotting, flooding, fly-

IMAGES >

1 Initial community desired outcomes



tipping and anti-social behaviour amongst others. One of the predominant themes to emerge was that accessibility within the river valley was problematic for wheeling and very limiting for many people with impairments.

Several locals re-iterated that the majority of the existing desire lines throughout the valley were in fact the most practical and direct routes: this knowledge has proven hugely useful to inform the proposed path network.

Alternative engagement

With the onset of the Covid-19 pandemic, the engagement team had to create alternative means of maintaining a connection with the community, usually through digital platforms. This included,

- The release of historic photos of the valley and surrounding area on Twitter as part of local history month
- The organising of an Accessible Rivers Photo Competition on Facebook, the winner of which received over 500 votes
- Cognitive mapping exercises undertaken by local Levenmouth Academy pupils
- Further encouragement to contribute to the Commonplace map resource on theeven.org
- Setting up an information stall at BRAG community markets in Leven which gathered a range of comments from all age groups
- Working with local organisations to distribute emergency food aid packages
- The creation of an animation which outlines the initial Concept Design River Park proposals

- Online 'Town Hall' events open to the public to comment and provide feedback on the initial Concept Design Masterplan proposals.

Engaging with seldom heard voices

From the beginning of the process, the project team have sought to engage with seldom heard members of the community. This included hosting one of the public events at a senior citizens centre, setting up a job club discussion and site visits with the Department for Additional Support within Levenmouth Academy. Furthermore, the animation, titled A Journey Through the River Leven Park, has been narrated and subtitled to provide accessibility to those with sensory impairment. Engagement with seldom heard voices has been thorough so far and the project team will continue to liaise with a range of groups, charities and organisations during the detailed design phase to ensure that the Connectivity Project addresses the social justice principle set out in the Executive Summary on page 5.

A Journey Through the River Leven Park

The launch of the animation in October 2020 was in support of the public presentation of the initial Concept Design Masterplan. The masterplan was accompanied by a conversation through Facebook, an extensive questionnaire and two on-line 'Town Hall' events. The events provided the opportunity for locals to talk to the project team, comment on the masterplan and leave feedback. The overall response was very positive in support of the proposals with many people requesting to become more involved in the Leven Project.