

# Canterbury's Riverside: Achieving a connected network

A strategy for the riverside corridor between  
Chartham and Sturry 2015 to 2020

**Transportation and  
Environment August 2016**



<b>Contents</b>	<b>Page numbers</b>
<b>1.0 Introduction</b>	<b>4</b>
1.1 Present-day context	4
1.2 Previous riverside studies	5
1.3 Vision statement and deliverable benefits	5
<b>2.0 Location of strategy and study area</b>	<b>7</b>
<b>3.0 Policy context</b>	<b>11</b>
3.1 Canterbury District Local Plan Publication Draft 2014	11
3.2 Canterbury Landscape character and Biodiversity Appraisal (Draft August 2012)	12
<b>4.0 Detailed design policy</b>	<b>15</b>
4.1 Space requirements for creation of new sections of riverside walk	15
4.2 Land ownership and management of the Riverside Corridor	17
4.3 Shared path surfaces for walking and cycling	17
4.4 Path width and surface treatment	17
4.5 Lighting	19
4.6 Furniture	22
4.7 Structures	23
4.8 Signage	24
4.9 Planting	25
4.10 Wildlife	26

4.11	Recreation	28
<b>5.0</b>	<b>The network of parks, gardens and open spaces in Canterbury</b>	<b>30</b>
5.1	The existing network of riverside spaces	30
5.2	Individual character and whole-route design?	33
5.3	Future vision for each space	36
<b>6.0</b>	<b>Enhancing existing sections</b>	<b>39</b>
6.1	Condition survey	39
<b>7.0</b>	<b>Creating missing sections</b>	<b>42</b>
7.1	Funding opportunities	46
<b>8.0</b>	<b>Future management</b>	<b>47</b>
8.1	Themes to guide future management	47
8.2	Partnership working with external organisations, friends groups and volunteers	49
<b>9.0</b>	<b>Action plan</b>	<b>51</b>
<b>10.0</b>	<b>Monitor and review</b>	<b>55</b>
<b>11.0</b>	<b>Appendices</b>	
	Appendix 1: River Stour and floodplain restoration plan Shalmsford Street to A2 (February 2013)	
	Appendix 2: River Great Stour Restoration Plan Canterbury	
	Appendix 3: Fishing on the River Great Stour, Canterbury	
	Appendix 4: Palette of furniture and materials for Canterbury's Riverside	

## 1.0 Introduction

### 1.1 Present-day context

Canterbury is synonymous with history and great beauty. It is the birthplace of christianity in Britain and a destination for pilgrims for hundreds of years; home to an iconic cathedral and a world heritage site, with a distinctive and unique sense of place.

Canterbury's fine-grained medieval street pattern, complemented by the many surviving historic buildings, walled courtyards and open spaces creates an intimate, enclosed townscape brimming with interest. The river connects open spaces and provides a corridor for nature to enter the city; it is this fusion of built form and landscape which makes Canterbury a special place. Canterbury's river is a rare chalk river habitat; its crystal clear waters support an abundance of wildlife both above and below the surface.



The division of the river through the centre of the city into two narrow, fast flowing channels is the result of past human intervention to harness it as a source of power, to make crossing easier, and to exploit it as a source of fresh water.

Today, the river is more accessible than ever before and has become a cherished feature of the city. The riverside footpath system, passing through parks, walled gardens and occasionally being forced to branch away through city streets is well used, attractive and now fully integrated into the fabric of the city.

There remains great potential to extend and upgrade the existing network of routes, spaces and, indeed, the river itself. In 2011 partnership working delivered the three mile 'Great Stour Way' riverside walking and cycling route between Canterbury and the village of Chartham. The challenge now is to create a recognisable identity for the network of riverside routes, to involve local people and to extend eastwards to link Canterbury with the village of Sturry to create an attractive and direct off-road walking and cycling route.



## 1.2 Previous riverside studies

A council policy for opening up the riverside has existed since 1953. In 1973 the local authority published a booklet entitled 'Riverside Area – Footpaths and Recreation'.

The first comprehensive strategy document was approved in 1987 and was entitled 'Canterbury Riverside Parks and Footpaths: Policy Statement'. The focus of this study was opening up public access to the riverside by creating connected routes between Milton Bridge at Thanington and Fordwich. A dedicated multi-disciplinary working group of officers was formed. A generous funding budget was approved for land acquisition, securing agreements with landowners and for constructing the new infrastructure of paths, bridges, walls, railings, signage and planting. This document provided a detailed implementation manual for creating new riverside routes through the urban centre. The appraisal of the heritage interest of the various riverside buildings and spaces reflected the emphasis placed on conservation at that time.

In 2003, the city council produced a revised 'Riverside Strategy'. This was adopted as supplementary planning guidance. It assumed the same study area of Milton Bridge to Fordwich. It was planning orientated, focussing on land use proposals for the riverside in relation to Local Plan policies. It was less prescriptive and detailed than the former strategy.

There was an expectation that proposed Regeneration Areas at Kingsmead, Wincheap and The Tannery would deliver significant new sections of riverside access.

## 1.3 Vision statement and deliverable benefits

The **vision** for the riverside is as follows:

- a welcoming, connected, accessible network of routes and spaces for everyone to use
- shared routes for walking and cycling wherever possible
- a river and riverside environment managed to promote a rich diversity of wildlife



- the involvement of local people in developing and managing the network
- highlights of past history brought to life
- a legible, recognisable identity for the network of routes and spaces
- a well-managed, clean and safe environment presentable at all times of the year

Potential **key benefits** to be delivered:

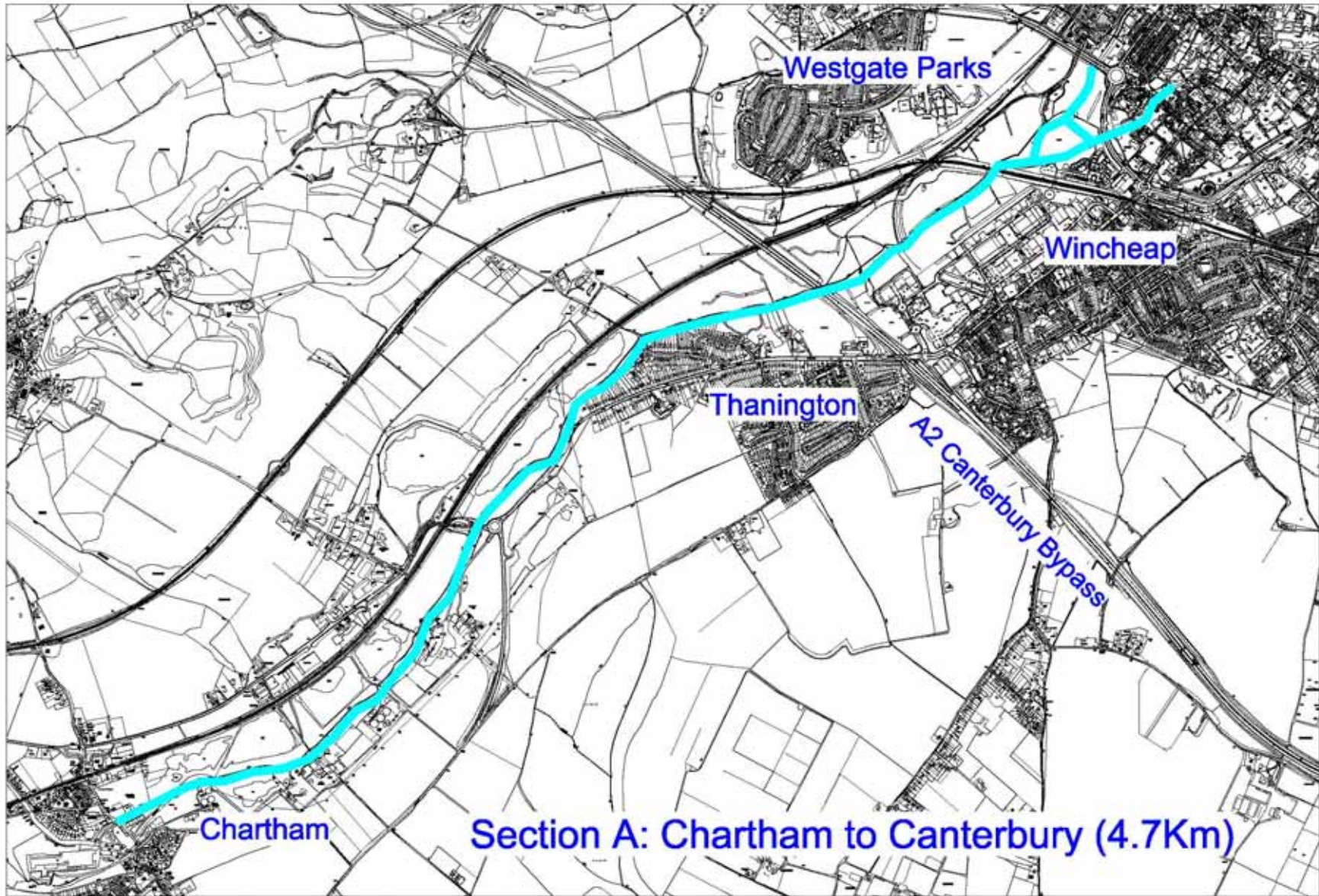
- Encourage more people to walk and cycle off road thereby reducing traffic congestion and air pollution
- Encourage people to be more active to improve their health and well being
- Provide an opportunity for people to have contact with the natural environment and wildlife
- Optimise the potential multi-functional benefits of well-designed and managed riverside open space, for example, flood storage, pollution filter, wildlife habitat / movement corridor, transport corridor for walking and cycling, spaces for active and passive recreation.
- Increase the interest of the city as a destination for visitors and businesses. The riverside corridor provides access to a range of attractive parks and gardens within the city and is a gateway to the wider countryside. It incorporates attractive sustainable walking and cycling routes to local settlements.



## 2.0 Location of strategy and study area

- 2.1 This strategy will be an appendix of the City Council's recently revised Open Space Strategy 2015-2020. The Open Space Strategy records and audits all publicly accessible open space within the district and contains standards for new open space provision. It classifies open space into different types or typologies. The riverside network falls into the category of Green corridors – linear green routes used for walking and cycling with opportunities for wildlife migration.
- 2.2 The agreed study area extends from the village of Chartham in the west to Sturry in the east. For convenience the 'corridor' has been divided into three sections:

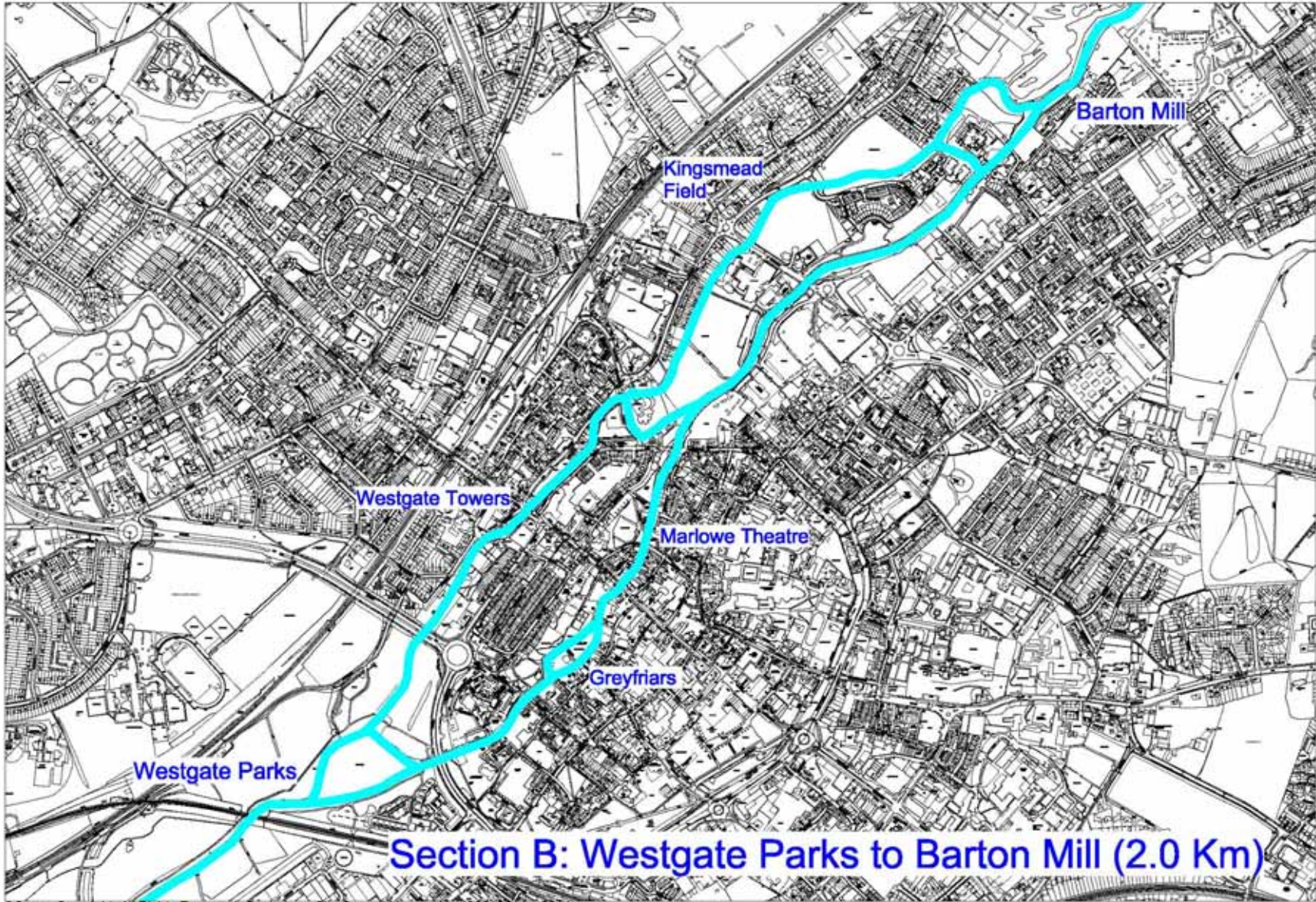




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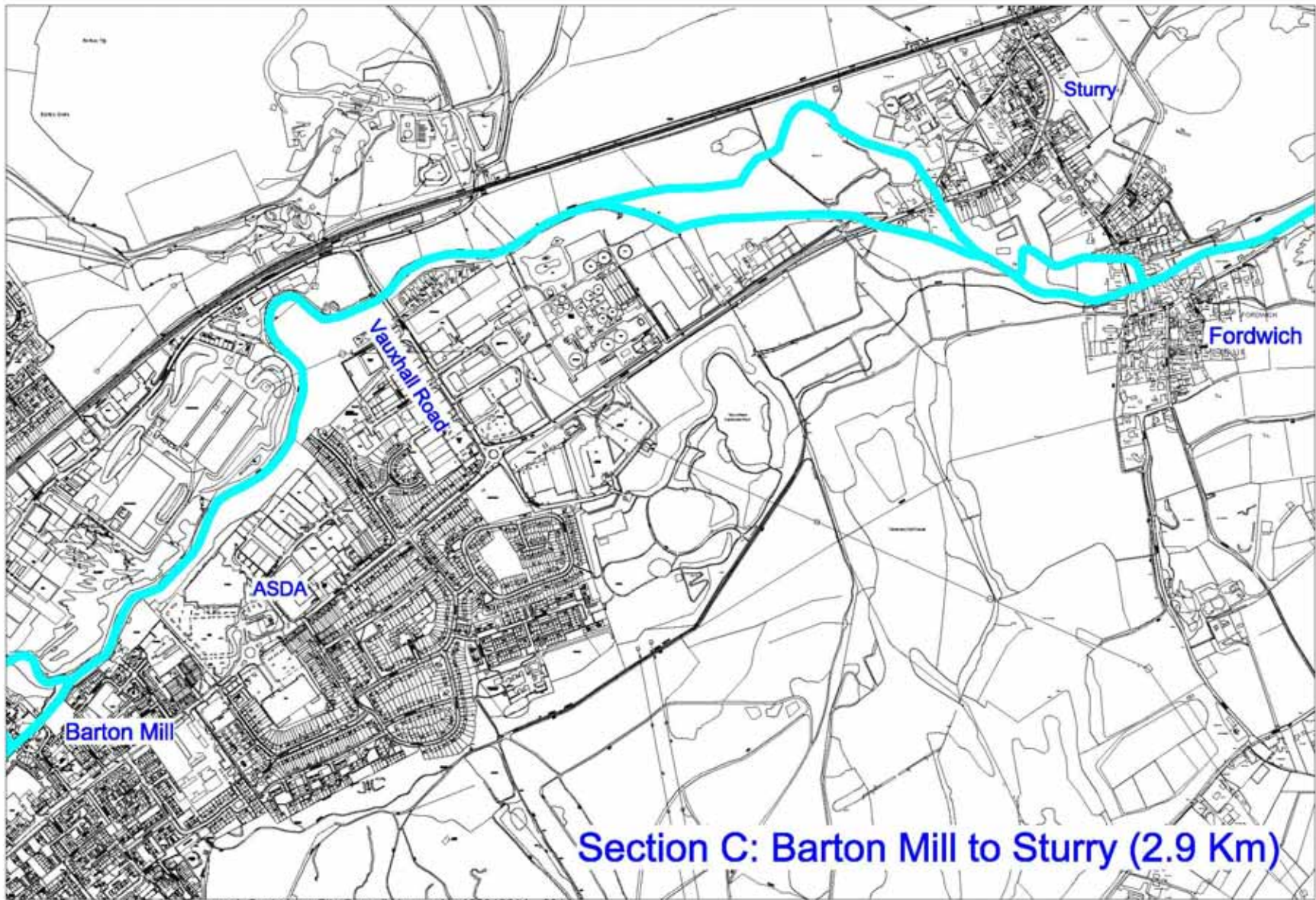






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**Section C: Barton Mill to Sturry (2.9 Km)**



### 3.0 Policy context

#### 3.1 Canterbury District Local Plan Publication Draft 2014

The Draft Local Plan contains specific policies relevant to the river and riverside environment in Canterbury:

##### **Policy CC12 extract:**

The Council will seek to ensure that every opportunity is taken to enhance existing aquatic environments and ecosystems. This will include restoration of natural river features (including riverbanks) and removal of barriers to fish passage when appropriate opportunities arise.

##### **Policy OS13:**

Land identified on the Proposals Maps (Inset 1 and 2) along the River Stour corridors in Canterbury City will be protected from development to enable its future use and contribution towards the riverside corridor, land is also allocated as open space as part of the existing Riverside Strategy.

##### **Policy SP5 summarised extract:**

A Green Infrastructure Strategy will be produced in parallel with the Local Plan. Among the objectives of this strategy will be to:

- provide measures to protect and enhance biodiversity and meet the requirements of the habitats regulations, and
- create and enhance linkages between natural areas and open spaces and areas of undesignated countryside, as appropriate.



### **Policy DBE13 summary:**

Proposals for new outdoor lighting or new developments which include outdoor lighting will only be permitted where it can be demonstrated that there will not be an adverse impact in respect of light pollution, residential amenity, nature and heritage conservation, landscape, environmental lighting levels, and long distance views/vantage points.

### **Policy DBE11 summary:**

In order to achieve high quality design of the public realm, development proposals will be expected to reinforce or enhance existing local character; integrate with existing movement patterns; complement the existing landscape setting; respond to context and be locally distinctive; contribute to a safe and secure environment; provide accessibility to everyone, and create manageable well functioning spaces.

## **3.2 Canterbury Landscape character and Biodiversity Appraisal (Draft August 2012)**

The purpose of the appraisal is to inform the core strategy of the emerging Local Plan and to provide an informative tool for developers, planners, land managers and conservation bodies.

The study identifies areas that require conservation, restoration, reinforcement or improvement. It provides justifications for managing pressures for change in the area without diminishing the value of the landscape and existing potential wildlife habitat networks.

The appraisal supports the principles of the National Planning Policy Framework March 2012 and the 2011 Natural Environment White Paper entitled 'The Natural Choice: securing the value of nature' by assessing character and biodiversity at a wider landscape scale to:

- Identify and describe the local landscape character areas
- Assess the condition and sensitivity of these landscape character areas
- Identify existing priority wildlife habitats and strategic biodiversity networks



The two relevant landscape character areas affecting the river corridor within the study area are:

- a) **Stour Valley – Chartham** (Chartham – Milton Bridge), and
- b) **Stour Valley – Sturry and Fordwich** (Vauxhall Road – Sturry)

The guidelines for both are to **conserve and restore**.

Specifically the guidelines are as follows:

a) **Chartham section:**

- Conserve and restore traditional drainage pattern where it is in decline
- Conserve and restore traditional extensive wetland grazing to enhance the pastoral valley floor setting of the river
- Seek to create new wetland habitat features within floodplain
- Remove detracting features from the valley where practicable
- Soften the impact of the built development by using planting appropriate to the landscape
- Conserve and restore historic buildings and their settings
- Resist built development in the floodplain, particularly near to the river



**b) Sturry and Fordwich section:**

- Reconstruct the urban edge developing riparian belts of trees and shrubs to soften the impact of the built up area on this open and highly sensitive landscape
- Manage watercourses for biodiversity and to maintain landscape pattern where they are in decline
- Encourage traditional grazing pattern on wetland pasture
- Resist further piecemeal erosion of the character area
- Soften the impact of the built development by using planting appropriate to the local landscape
- Enhance the visual characteristics and quality of the Sturry Road approach drawing upon its historic connections



#### 4.0 Detailed design policy

The aim of the following policy statements is to ensure that the creation of new sections of route and the enhancement of existing sections are coordinated to produce a unified riverside environment of good, consistent design quality and recognisable identity.

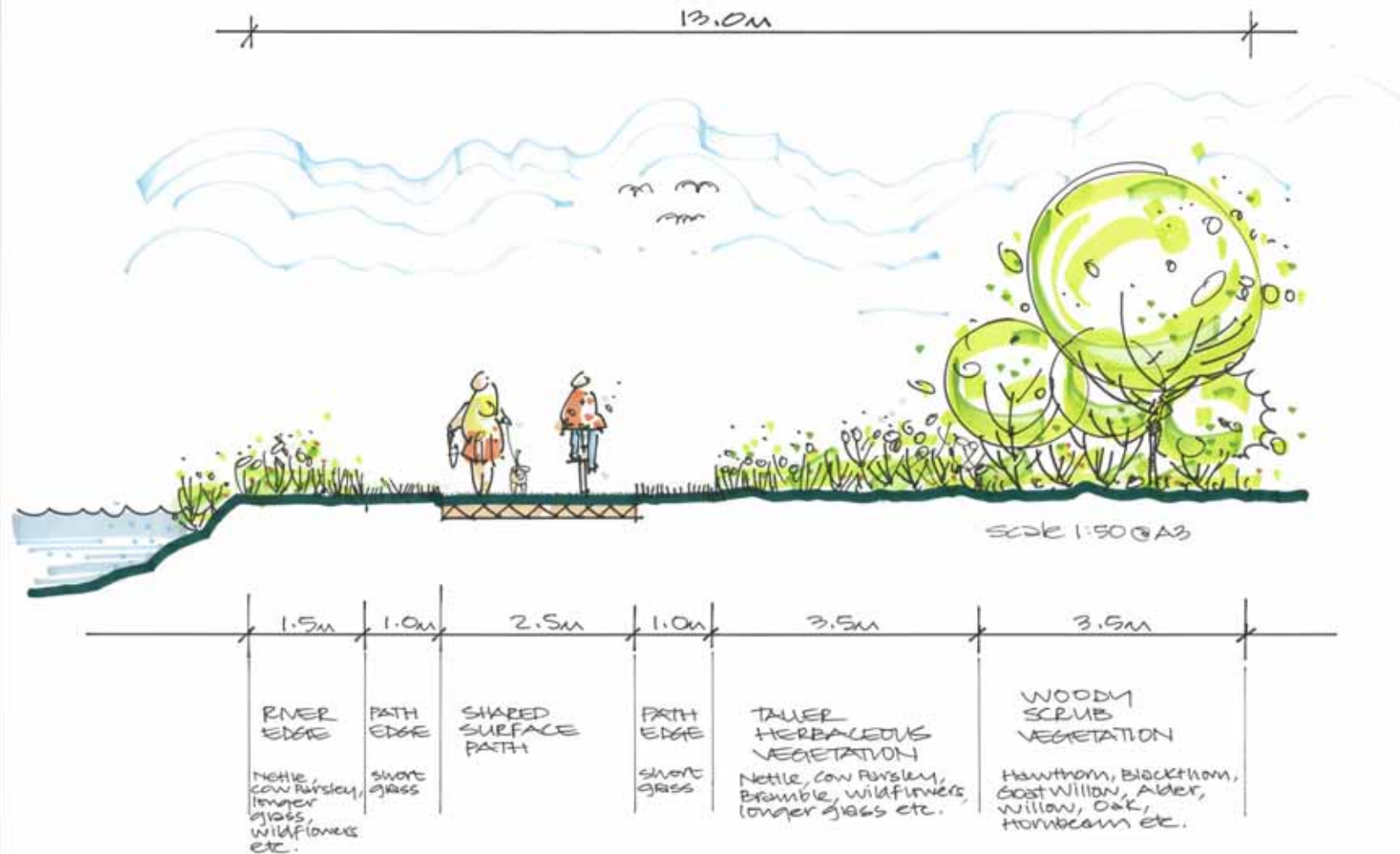
#### 4.1 Space requirements for creation of new sections of riverside walk

The Environment Agency require a minimum width of 8.0m from top of river bank for operational watercourse management reasons. Past experience has shown that this dimension does not provide sufficient space for habitat creation and buffering built development.

The optimum width of 'riverside corridor' required to adequately accommodate access for people to walk and cycle and a rich, varied habitat for wildlife is 13.0m from top of river bank. The cross-section drawing below shows how this width will typically be apportioned.

*Policy RS1: Wherever possible a minimum corridor width of 13.0m shall be reserved for new riverside access routes.*





## Space requirement for new sections of riverside walk (Policy RS1)



## 4.2 Land ownership and management of the Riverside Corridor

Co-ordinated management of the Riverside Corridor as one coherent entity can only be achieved if land ownership and management are unified.

*Policy RS2: Where land adjacent to the river is developed the developer will be encouraged to transfer ownership and management of the riverside corridor (approximately 13m wide access corridor measured from river edge) together with an agreed commuted sum to cover future management to the city council. In addition, the developer will be expected to fund the construction of the new path, furniture, signage and planting in accordance with the city council's design and specification.*

## 4.3 Shared path surfaces for walking and cycling

All riverside routes have been designed to be shared by pedestrians and cyclists without segregation. A largely unmarked and unsigned route places responsibility on users to respect others and act responsibly. This arrangement has worked well over recent years. The behaviour of cyclists shall be kept under review in busy city centre spaces.

*Policy RS3: Hard surfaced riverside path routes shall be shared by pedestrians and cyclists without segregation wherever possible.*

## 4.4 Path width and surface treatment

Sustrans, the UK's leading sustainable transport charity, advise that shared surfaces should be 2.0 - 3.0m wide with 1.0m wide grass margins either side. Our own experience confirms that a hard surfaced width of 2.5 – 3.0m with 1.0m grass margins either side works well.

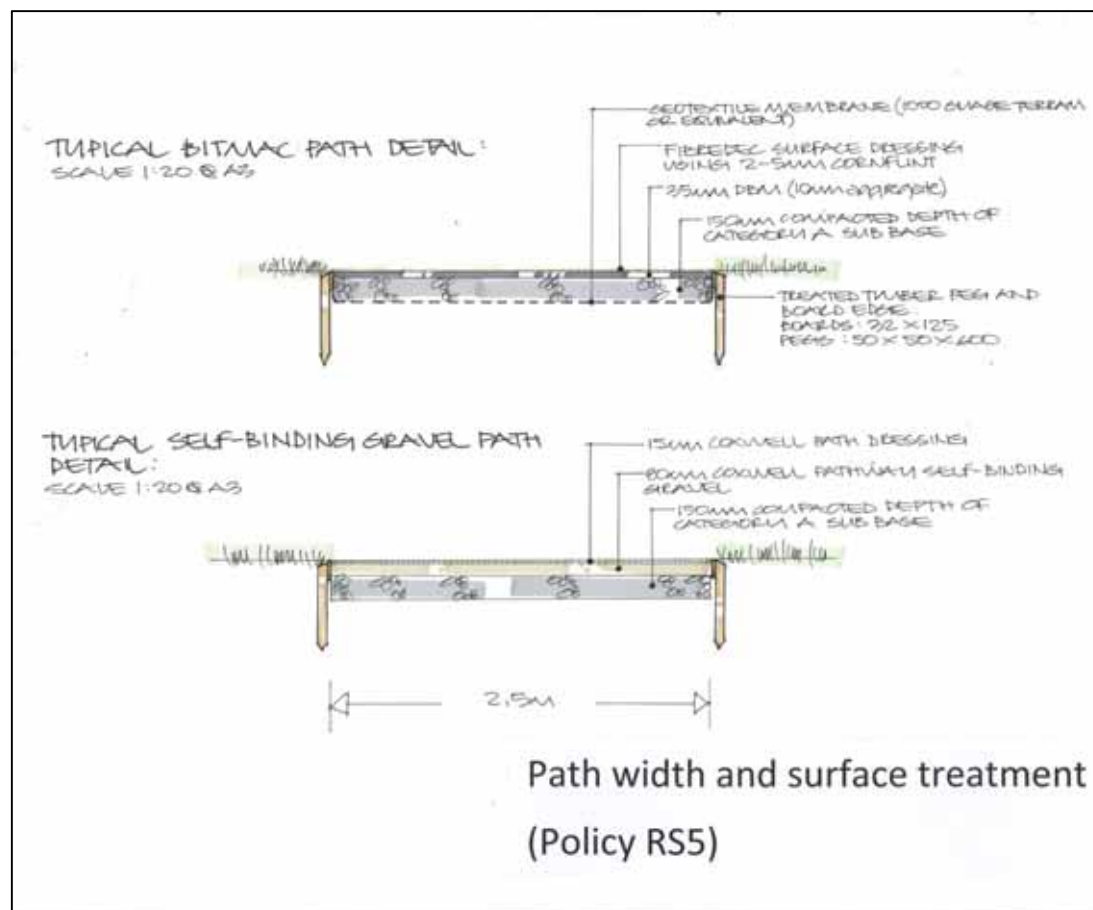
*Policy RS4: Shared surface path widths shall be a minimum of 2.5m in width with 1.0m wide cut grass margins either side to present a managed appearance.*

The consensus of opinion amongst users favours bitumen macadam as the most suitable path surface material.



Machine laid bitumen macadam is the preferred choice because of the smooth surface which is well suited to cycling and low maintenance. When bitumen macadam is used the edging is important. Treated softwood timber forms a stable edge and enables more natural curved alignments to be achieved. Macadam weathers in appearance and if concrete edging is used it will soon become covered by vegetation. Bitumen macadam paths can be made to appear more 'natural' by the application of a bonded natural stone aggregate to the surface. This adds an extra cost and is likely to wear away over time.

Self-binding path gravel provides an alternative to macadam and is best suited to areas outside the city centre in open countryside. The surface is porous with a loose texture. The material is a mix of different sized aggregate and is combined with a fine clay dust. It is laid using a heavy roller with a water jet to produce a compacted surface which binds together with usage. The surface can be topped-up if low spots occur. A timber edge is commonly used to retain this surface.



*Policy RS5: The preferred choice of material for view path surface construction shall be bitumen macadam.*



## 4.5 Lighting

A balance needs to be struck between the provision of artificial lighting for pedestrians and cyclists along certain lengths of the riverside and maintaining a dark sky to protect habitats for wildlife. River corridors, especially in urban centres, provide an excellent foraging habitat for nocturnal wildlife such as bats.

Increased lighting is a particular problem for bat populations. Bats are specifically adapted for low light levels. Lights, particularly those with high ultraviolet (UV) levels attract large numbers of insects which can result in a depletion of numbers from the riverside habitat.

Artificial lighting in the wrong place at the wrong time is a pollutant which can harm the natural environment.

Riverside lighting shall conform to the following requirements:

- Avoid light spillage into the night sky
- Use narrow spectrum bulbs less damaging to wildlife
- Use medium to low level lighting columns (less than 4.0m high). Low level light sources reduce ecological impact, but are more prone to malicious damage.
- Direct illumination away from the river and riverside vegetation down towards the access route
- Use energy-efficient LED lighting at 30 watts where possible for pedestrian routes to provide an illumination level of 20 lux (55 lux is the standard ambient illumination level)
- Incorporate sensor controlled devices to trigger illumination by the movement of an approaching user

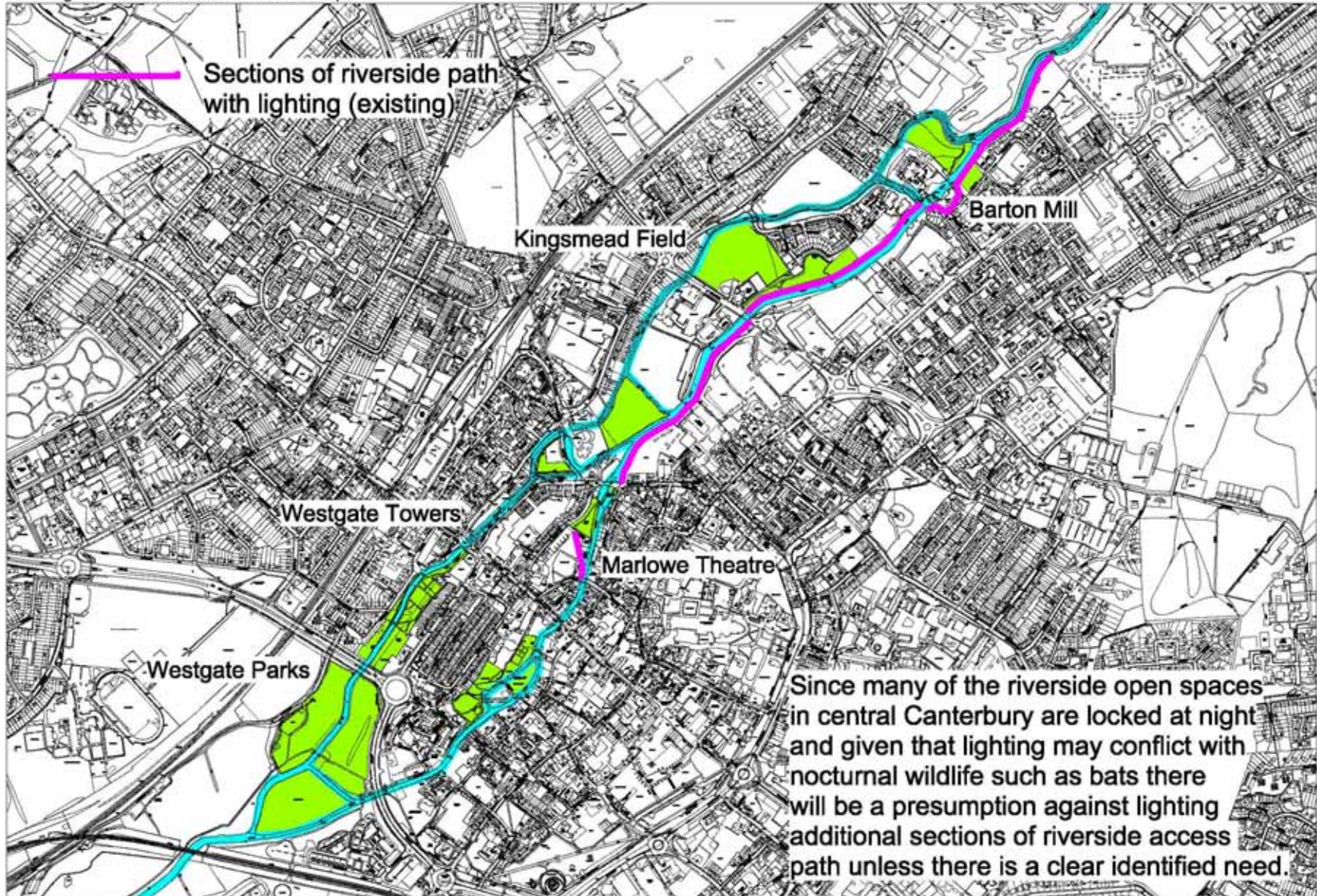


The section of the riverside with existing lighting columns extends from St. Radigunds to Parham Road. The lighting was installed by the City Council and developers at the request of the city council. Most of the lighting pre-dates the aforementioned best practice and does not conform.

*Policy RS6: Existing lighting to be adapted to conform with agreed best practice for Canterbury in order to mitigate adverse impact on bats and the night sky. New lighting to be designed to conform with best practice. It is not expected that routes other than principle routes in the urban centre will need to be illuminated.*



Existing illuminated sections of riverside path



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## 4.6 Furniture

Furniture refers to seating and litter bins.

- **Seats**

Seats should not be installed unless the location is suitable. A seat should be positioned in a sunny, sheltered location with a view. Ideally a seat should back against a fixed element such as a wall, railings, fence, hedge or tree to provide a visual 'anchor' and to provide a sense of security. Seats should be comfortable with a back and arm rests, although this will not be the case in every instance. Seats should be set back from a path by at least 2.0m wherever possible. Seats with a view of the path will help provide informal surveillance.

Seats provide an opportunity to reinforce the identity of Canterbury's riverside. The style of seat for urban settings should differ from that used in open countryside and rural environments. It is acknowledged that certain historic gardens and parks in Canterbury may have a particular style of seat not used elsewhere. Although there are maintenance advantages to standardisation, in the interest of creating a sense of place it cannot always be achieved.

The route between Chartham and Canterbury features several 'landmark' sculptural seats crafted by artists. Sculptural seats such as these work well along the longer rural stretches because they help legibility and wayfinding and serve as distance markers. Care should be taken to avoid siting 'sculptural seats' at too frequent intervals.



*Policy RS7: To strengthen route identity a standard seat type has been selected for both urban and rural settings. Occasional well-sited sculptural 'landmark' seats will be installed to add interest and aid navigation (see Appendix 4).*

- **Litter bins**

The black metal 'Earth Anchor Big Ben' litter bin (see appendix 1) is appropriate for both urban and rural situations and is now in widespread use throughout the district. For these reasons this litter bin has been adopted under the council's maintenance contract for Canterbury's riverside.

Litter bins should be carefully sited at junction points and should not be positioned too close to seats where unpleasant odours and insects discourage usage. The longer rural stretches should not be interrupted by litter bins. Users should be asked to take their litter home with them or deposit it in the nearest litter bin.

*Policy RS8: A standardised litter bin type is used for the riverside (see Appendix 4).*

#### 4.7 Structures

Structures include hard landscape elements such as walls, railings and bridges which are key components of the riverside infrastructure. Walls and railings provide enclosure, control movement and add richness to the townscape experience of urban areas. Existing structures need to be regularly inspected and maintained in good condition. The design of new walls, railings and bridges should have the input of a professional architect or landscape architect to ensure design quality and sensitive integration with the local context. The context will determine the most appropriate design, materials and construction techniques.

Bridges provide key visual punctuations along the riverside corridor. They connect, provide a platform for views of the river and, if well designed provide memorable architectural features.

Existing bridges need to be regularly inspected and maintained. New bridges need to be designed to fit the context and other bridge design in the locality. Bridges need to conform to access and safety standards in terms of widths and handrail heights. They can be narrower than adjacent paths. The height of a bridge over water will be determined by the requirements of the Environment Agency. A level transition



between path and bridge should be achieved where possible to promote ease of access for pedestrians and cyclists. Refer to PROW requirements as enforced by KCC.

*Policy RS9: New walls, railings and bridges represent important infrastructure elements and need to be appropriately designed in sympathy with local context to enhance local distinctiveness (see Appendix 4).*

## 4.8 Signage

In relation to the riverside walk, there are three types of sign:

- **Welcome**

Most often used in relation to a static space such as a principal park or garden with identifiable boundaries. Commonly fixed to an existing wall or railings at an access point. A welcome sign at key access points serves to advertise the name and existence of the space; to highlight features and facilities available (plan of site with key); and to provide contact details of owner or managing organisation.

- **Directional**

Typically a finger post sign, this type of sign (related to linear routes) confirms the existence of the route; may display distances to destinations; and, advertises the route to those who do not currently use it. National cycle routes shall be indicated by a small but easily recognisable adhesive sign attached to the post of directional signs.

- **Information**

Most commonly a lectern type panel designed to convey information to enrich the user experience. The information may relate to notable historic structures or events, past use of the site, wildlife or landscape interest. Website and app downloads may be provided for further information.





It is important for signage to be coordinated, consistent, clear and relevant to users. It should be used judiciously and sited at key locations.

An easily recognisable logo specifically designed for a space or linear route will strengthen identity. A logo for Canterbury's riverside walk will be produced.

*Policy RS10: Welcome and information signs should be designed to incorporate riverside branding wherever possible to provide a consistency and sense of place. The style and size of the sign should be appropriate to the location and accessible to the user. Wherever possible these signs should be fixed to existing walls and railings to minimise 'clutter'. Two different types of directional signs shall be used: stainless steel post with metal finger signs for urban centres and timber marker posts for open countryside (see Appendix 4).*

#### 4.9 Planting

The emphasis is on managing existing areas of planting rather than new planting design. Only isolated, short sections of the the river corridor feature groups of trees. In open countryside trees such as willow and alder occasionally punctuate the riverside landscape. Management may involve coppicing trees and shrubs, cutting grass at different frequencies and allowing river-edge planting to develop with minimal disturbance.

In situations where new planting is required the following principles should be followed: outside the urban area plant selection should be native species characteristic of the riverside and local area. Indigenous plants strengthen local landscape character and provide food, shelter and 'stepping stones' to aid safe movement for a diverse range of wildlife.

Within the urban boundary there will be opportunity for carefully selected non-native species to be planted subject to context. Wherever possible tree species in urban areas should be native.

Tree planting requires careful consideration. Trees and tall shrubs will impact on views, the ecology of the riverbank and river and the sense of safety perceived by users.



Planting design needs to be undertaken by a suitably qualified officer taking into account local landscape character, user requirements and wildlife interest.

*Policy RS11: New planting should be composed of native species and should be designed by a suitably qualified officer. River corridor vegetation should be managed to create an attractive, safe environment maximising variation of habitat for wildlife. In certain instances in urban areas it may be appropriate to consider planting individual non-native 'landmark' trees, but rural areas should prioritise native species planting.*

#### 4.10 Wildlife

The river and its associated drainage channels are key habitat features supporting a range of fish, mammals, birds and invertebrates. Chalk rivers are characterised by clear water of shallow depths, an abundance of river gravels, good assemblages of plants and relatively stable water flows. Through good water catchment management the environment of the Great Stour should be supporting trout, eels, water voles, otter, our native cray fish, bats and a wide range of birds in good numbers.

Over recent decades many of our chalk rivers have been damaged by nutrient enrichment and unfortunately the Great Stour is classified as being eutrophic as a result of high levels of phosphate. Eutrophication, or over fertilisation of rivers leads to excessive growth of algae which smothers out other aquatic plants and animals. Phosphates get into water courses as a result of run-off from agricultural fields fertilised with phosphorous compounds. However, the main source is from household effluent from sewage treatment works and septic tanks. The EU Water Framework Directive adopted in 2000 demands both clean and biologically healthy rivers. As a result huge investment is being made to improve the effectiveness of sewage treatment plants. It is hoped that, over time, the main source of phosphates to our rivers will be significantly reduced.

In February 2013 the Kentish Stour Countryside Partnership produced a practical study detailing specific river restoration projects to enhance biodiversity interest in the river and its immediate corridor. It was called the 'River Stour and Floodplain Restoration Plan, Shalmsford Street to



the A2'. By creating variations to the profile of the bottom of the river and to riverbanks the flow of the river will become more varied. Variation creates niches to accommodate a greater diversity of wildlife.

The second phase of the study has recently been completed for the river from Rheims Way to Fordwich Bridge. Both studies will be included in this strategy as appendices. It is hoped that as and when funding becomes available a prioritised programme of project implementation will be possible.

*Example of a specific project to enhance the biodiversity of the river in the Westgate Gardens.*



*Before removal of vertical timber edge*



*Timber edge removed and bank regraded*



*One year later: bank planted with native marginal plants*



*Policy RS12: The environment of the river and river corridor provides a range of very important habitats and safe movement corridor for wildlife, particularly through the urban centre of Canterbury. Wherever possible new design and landscape management decisions shall promote biodiversity. The in-channel river passing through Canterbury shall be enhanced as a linear movement route for wildlife.*

#### 4.11 Recreation

The two main recreational activities associated with the river are the managed use of watercraft (boats, punts and canoes), and fishing, which is unmanaged between Toddlers Cove and Sturry.

Well-managed recreational use of the river can make a valuable contribution to making Canterbury's riverside a more popular and attractive place.

- **Watercraft**

Punt and boat hire has been successfully managed by Canterbury City Council's licencing section for a number of years. There are now three licenced operators within the city centre. Two operating on the southern channel or 'Kings River' and one from the Westgate Towers on the northern channel. Punting is able to animate the river without major disturbance to wildlife. It is popular with visitors to the city, and provides a valuable contrast to the busy shopping streets. It contributes to dispersing tourists and broadening economic activity within the city.

The city council will work actively with interested groups/organisation in an effort to accommodate a range of river-based activities.

An alternative potential base for canoe hire at Kingsmead (opposite Kingsbrook Park) is also currently being investigated. This stretch of river is not used by punts or rowing boats, is deeper and has in the recent past been used for canoe launching.



Well managed, licenced recreational activities such as boating and punting add vitality and interest to the river, extend the offer to visitors and reveal hidden parts of the city without disturbance to other users and wildlife. Present usage appears to be at full capacity

*Policy RS13: Maintain licenced boating and punting activities on the river at sustainable levels. Consider capacity of the river in given location before approving any new water-based interests.*

- **Fishing**

Tonford fly fishing club manage the river for trout fishing from the railway bridge just upstream of Toddlers Cove to Chartham. The Canterbury and District Angling association manage the section from the Mill Pool at Sturry to Plucks Gutter for course fishing. The stretch of river between Sturry and the start of the Tonford fly fishery is unmanaged.

A more serious threat to fish populations is being posed by overseas visitors who customarily eat course fish instead of returning them to the river as is the tradition in this country. The Environment Agency have been pressing for signs with symbols to be displayed to indicate course fish are not to be killed and eaten.

Interestingly, the 1987 Riverside Strategy noted the capacity of the river to accommodate boating and fishing as being limited. It advised the need for an assessment of the river's capacity to accommodate both activities to be carried out.

The 2003 strategy reinforced this message by stating that both fishing and boating have the potential to disturb other users and wildlife. It is important on a small river such as the Stour that boat use is carefully managed.

The city council has produced an Advice Note relating to fishing in Canterbury (see Appendix 3).

*Policy RS14: The city council shall work in partnership with the Environment Agency, the Kentish Stour Countryside Partnership, and local friends groups to develop a policy to educate anglers and to manage unrestricted fishing between Canterbury and Sturry to avoid fish stocks being further depleted.*



## 5.0 The network of parks, gardens and open spaces in Canterbury

### 5.1 The existing network of riverside spaces

**Table 1: Riverside parks, gardens and open spaces accessible to the public**

Name	Type	Area (Hectares)	Ownership	Management	Locked at night
Westgate Parks: <ul style="list-style-type: none"> <li>• Toddlers Cove</li> <li>• Bingley Island</li> <li>• Tannery Field</li> <li>• Westgate Gardens</li> </ul>	Park	2.0 1.7 2.0 1.7	CCC	CCC	No No No Yes
Tannery Park	Park	0.3	Private	Private	Yes
Greyfriars Garden	Gdn	0.3	CCC	CCC	No
The Franciscan Gardens	Gdn	0.6	Private	Private	Yes *
Butterfly Garden	Gdn	0.008	CCC	CCC	No
The Causeway	OS	0.2	CCC	CCC	No
Solly's Orchard	Gdn	0.3	CCC	CCC	No
Bus Company Island	OS	1.1	CCC	CCC	Yes (access by appointment)
Kingsmead Field	OS	1.8	CCC	CCC	No
Kingsbrook Park	Park	0.6	Private	CCC	No
Barton Mill	OS	0.9	CCC from 2016	CCC from 2016	No
Sargeants Parade	OS	0.2	Private	Private	No
Vauxhall Avenue Field	OS	2.7	CCC	CCC	No

(CCC : Canterbury City Council; OS: open space; Gdn: Garden)

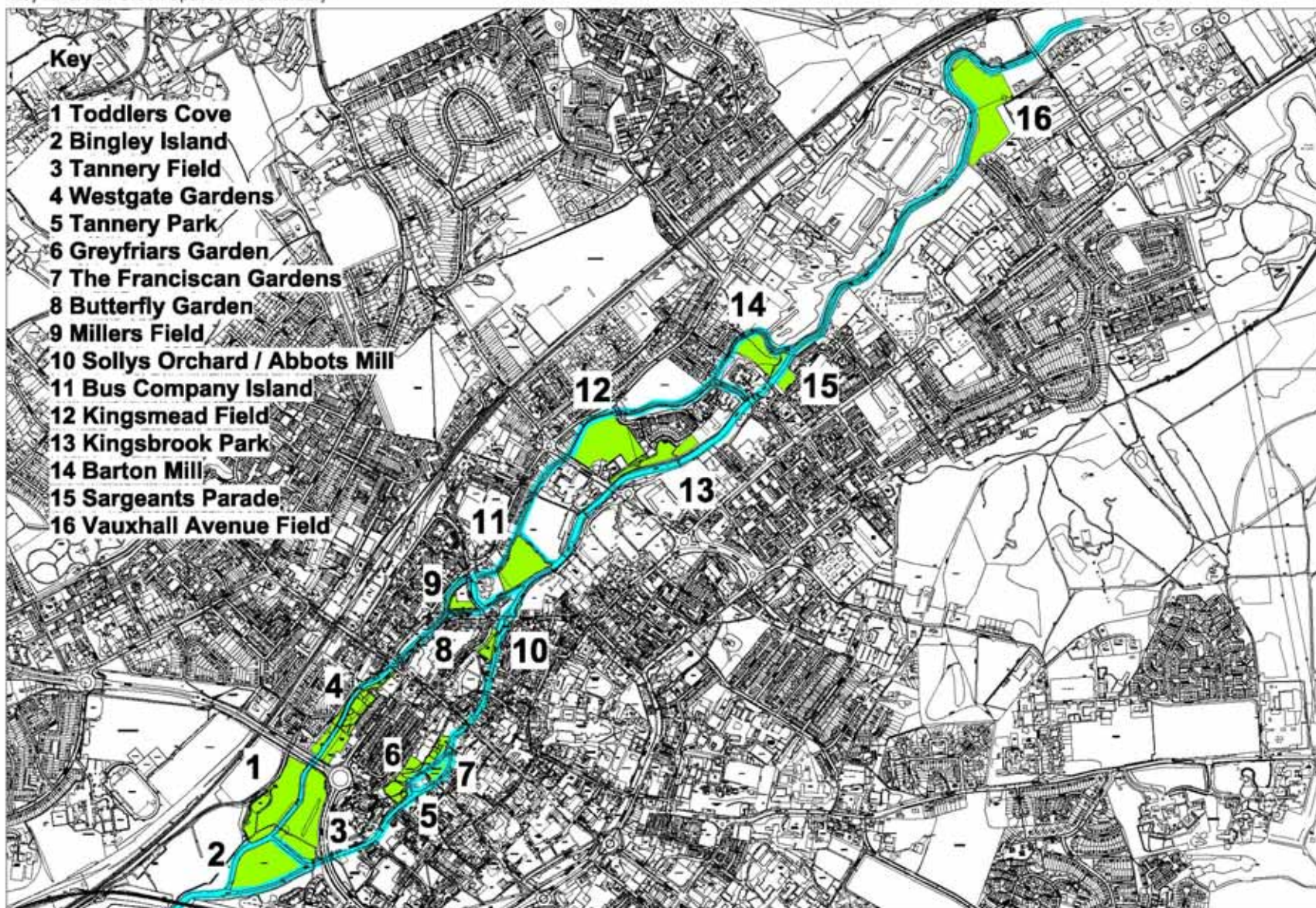
(\*The Franciscan Gardens are open at the discretion of The Eastbridge Hospital Trust, from Easter Monday to 30 September, 10am to 4pm, Monday to Saturday. Closed on Sundays.)



The assemblage of parks, gardens and open spaces associated with the linear riverside corridor as it passes through the urban centre of Canterbury has a combined area of 16.4 hectares. Most of the sites are owned and managed by the City Council. These spaces make up the green spine of the river corridor through the city; they provide great variety in terms of spaces with different functions, and a heritage trail revealing hidden parts of the city.



Key Riverside Green Spaces in Canterbury



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## 5.2 Individual character and whole-route design?

Each of these 'static' spaces possesses its own individual character. It is important to identify and understand the essence of the character of each space to guide future change. In this way proposed changes are more likely to strengthen character and historic sense of place.

It would be wrong to try to dilute individual character and variation in an attempt to unify the spaces into a single, easily recognisable riverside walk brand. The approach should be to identify and strengthen individual character and user experience, and, through design, provide subtle indications that the spaces form part of the riverside walk network.

This is best achieved through the choice of colour of the metal work of furniture, gates and railings and signage. Path surface treatment is a powerful way of unifying the route, but may not be practical or cost effective in all instances. Coordination of signage (welcome, directional and information) with the use of standardised design and the inclusion of a distinctive logo (see appendix 1) is the most practical way of highlighting the riverside route within these spaces.

**Table 2: Description of the character and function of riverside spaces**

Name	Character/function
Westgate Parks: <ul style="list-style-type: none"><li data-bbox="190 917 436 965">• Toddlers Cove</li><li data-bbox="190 1045 436 1093">• Bingley Island</li></ul>	<ul style="list-style-type: none"><li data-bbox="537 917 2038 1045">• Informal grass open space with random groups of trees. Accommodates natural timber play area, toilet block and parking. Opportunity to vary grass cutting to further emphasise informal character. Line of pollarded willow trees separate space from river. Destination for children and families in fine weather.</li><li data-bbox="537 1045 2038 1173">• Secluded island managed for nature conservation interest. Circular, unsurfaced, informal path route. Area of short grass contrasting with tree groups and areas of tall, native herbaceous vegetation.</li></ul>



Name	Character/function
<ul style="list-style-type: none"> <li>Tannery Field</li> <li>Westgate Gardens</li> </ul>	<ul style="list-style-type: none"> <li>Buffer space between Rheims Way and river on two distinct levels. Lower area subject to flooding when river level rises. No existing function. Orchard with wildflower understorey proposed. Noise from road and poor views make space uncomfortable to be in for any length of time.</li> <li>Attractive, enclosed, linear riverside park formerly private garden to Tower House. Ornamental planting of shrubs, herbaceous perennials and bulbs provide year round seasonal interest. The presence of the river, which is very visible, is the main point of interest and makes this park very popular.</li> </ul>
Tannery Park	<p>Informal 'pocket park' laid out to grass with sparse tree planting. Incidental toddlers play space with seats overlooking river.</p> <p>Space has strong natural surveillance from overlooking apartments. It is hoped this important connecting space will be opened to the public to provide access between the city centre and the Westgate Parks complex.</p>
Greyfriars Garden	Hidden, enclosed space laid out to grass and trees with winding path links to adjacent spaces. Narrow branch of river forms southern boundary but not very visible. Quiet, contemplative space. People pass through space or use it to access neighbouring primary school.
The Franciscan Gardens	Secret walled garden with historic Greyfriars chapel built over river channel. Access hidden by way of narrow path and two bridges. Traditional wildflower meadow and wall enclosed garden space, formerly formal garden. Wonderful tranquil atmosphere providing a secluded sanctuary for people and wildlife in the heart of the city.
Butterfly Garden	Very small walled garden space overlooking river. Link space between The Causeway and city centre. Natural stone paving combined with narrow plant beds and seating. Opportunity to grow nectar-rich plants attractive to bees and butterflies, however partly in shade for most of the day. No apparent theme to planting.
The Causeway (Miller's Field)	'Island' space surrounded by river on all sides. Car park added leaving 'L' shaped grass space without clear function. Riverside path link to North Lane car park and city centre but not widely used. Structural lime tree planting maturing well. A space passed through rather than lingered in, due to presence of car park and lack of interest.



Name	Character/function
Solly's Orchard	Intimate walled garden space with south-facing aspect. Sunny and sheltered for most of the day. Unfortunately view of river obscured by boundary wall. Orchard theme to planting. Space connects, by way of series of footbridges over sluice gates, to site of former Abbots Mill. Sight and sound of rushing water and deep mill pool with brick bridge backdrop creates very attractive, memorable space.
Bus Company Island	Wooded island in centre of river managed for nature conservation with a pond, wet margin and a series of grassed, wooded and orchard areas, for amphibian, reptile, bird and invertebrate interest. Access is not promoted due to the local nature reserve designation and wildlife value of the undisturbed site. Wildlife monitored by University of Kent students.
Kingsmead Field	Flat, open grass space beside northern channel of river. Formerly used for hockey and cricket but now used by local people for informal sport and recreation, including casual kick-about football, and for occasional fun-fairs and circuses. High beech hedge to screen Kingsmead Road on western boundary. Several mature weeping willow trees on northern boundary indicate line of lower level river channel. Two key functions: informal recreation and wildlife habitat.
Kingsbrook Park	Small 'pocket park' space within centre of new housing development. Separated by abrupt change in level from lower riverside walk. There is a play area for younger children. The play area is the only part of the park suitable for active play. However some areas of the open space are suitable for outdoor leisure/recreational activities such as picnicking, sitting etc.
Barton Mill	Unmanaged area of dense willow woodland and small area of open grassland, flanked by river. Expected to come into the possession of CCC (from developer) during the lifetime of the Riverside Strategy. To be managed for nature conservation with limited public access.
Sargeants Parade	Rectangular open grass space in centre of new student housing development. Designated protected open space in Local Plan. No clear function. Good natural surveillance.



Name	Character/function
Vauxhall Avenue Field	Informal, rough grass open space beside river on eastern suburban edge of the city. River obscured by high earth bund from part of the open space. Previously developed with youth facilities and has planning for parking. Pylon, substation and recent sea cadet headquarters all protected by steel palisade fencing.

### 5.3 Future vision for each space

Table 3: Vision for specific riverside spaces

Name	Future vision
Westgate Parks: <ul style="list-style-type: none"> <li>• Toddlers Cove</li> <li>• Bingley Island</li> <li>• Tannery Field</li> </ul>	<p>Destination riverside play and picnic meadow. Natural timber, pollarded willows along river boundary, longer grass in less intensively used parts of the site. Car park with links to off-road walking and cycle routes to Chartham and Whitstable mean this space has potential to become a gateway to the open countryside.</p> <p>Semi-natural island managed as a secluded wildlife refuge. Public access provided but not positively promoted. Subtle management of vegetation : coppiced willow thickets, damp areas with sedges and native flora, shorter meadow areas and cut grass paths though taller native herbaceous vegetation. Occasional groves of alder, willow aspen and single specimen black poplar. Older pollarded willows to be retained for hole nesting birds. Increased surveillance and access through the area to the Bingley Court development may reduce unauthorised activity and costs of enforcement and clearance in the longterm.</p> <p>Traditional Kentish orchard with wildflower understorey. Shorter meadow grass from main path access outwards. Outer edges allowed to grow longer with 1-2 cuts per year. Tree division between Tannery Field and Bingley Island managed to eventually replace existing line of lombardy poplar trees. Native species such as alder and willow introduced.</p>



Name	Future vision
<ul style="list-style-type: none"> <li>Westgate Gardens</li> </ul>	Native woodland shaw on earth bank separating orchard on higher plateau from lower riverside water meadow. Informal, ornamental riverside park restored to take on the character of the garden of a private residence. Mature specimen trees and colourful herbaceous borders set within immaculate lawns.
Tannery Park	Incidental 'pocket park' . Occasional tree groups within gently contoured grass landscape. Differential grass cutting to allow areas of longer grass to flourish. Cut grass paths. Riverside meadow space enclosed by buildings and existing trees.
Greyfriars Garden	Secluded open space passed through or arrived at by accident. Enclosed, introverted space featuring trees and grass. Longer grass margins. Opportunity to plant small group of fruit trees.
The Franciscan Gardens	Part of 'hidden Canterbury'. Not connected to the linear riverside trail through Canterbury. Traditional wildflower meadow and formal walled garden with historic chapel straddling river channel.  Mature trees and flint and brick walls. Bridges over river offering glimpsed views along narrow, winding river channels.
Butterfly Garden	Small, intimate walled garden space. Colourful nectar-rich plants to encourage pollinating insects.
The Causeway	Grass open space with riverside sculpture. Visual impact of car park 'softened' by planting. Colourful wildflower grass sward. Winding path route from car park to butterfly garden.
Solly's Orchard	Groups of orchard trees, areas of longer grass with wildflowers, scented climbing roses on south-facing wall. Nectar-rich herbaceous perennial planting to attract bees and butterflies. Comfortable seats set back from winding path.
Bus Company Island	Protected, concealed glade within woodland managed as an island wildlife refuge with controlled accessPond with boardwalk and soft mud margin, managed longer grass areas, log piles. Nest boxes for wide range of birds, bats and invertebrates.



Name	Future vision
Kingsmead Field	'Riverside Green' with two key functions: informal recreation and wildlife habitat suitable for informal recreation and occasional events. Unobstructed central grass space with pollarded willows along northern boundary with river. Seating on boundaries. Areas of longer grass meadow with wildflowers. Reinstated circular walk around island (subject to feasibility assessment) and creation of path link between Kingsmead Field and Kingsbrook Park riverside subject to public consultation. Amenity picnic area and toddler play provision (subject to public consultation).
Kingsbrook Park	Compact residential neighbourhood on an island between two branches of the river. Accessible circular riverside walk around the whole island. Small open space with toddlers play facility on south side of development. Four sculptural riverside seats on decks along southern branch of the river.
Barton Mill	Land set apart from the riverside route. Damp willow woodland managed to create greater habitat diversity – coppicing, pollarding, thinning. Area of associated open grassland on infertile soil to be managed as longer grass wildflower meadow. Site to be managed for reptiles.
Sargeants Parade	River separated from this space by steep tree-covered bank. The Parham Road development lacks open space. The consensus of local community feedback is that this open space is important and should be retained as communal open space.
Vauxhall Avenue Field	Neighbourhood play area with multi-games court set within landscape close to the end of Vauxhall Avenue. Riverside walking and cycling route bisecting space linking Canterbury with Sturry.  New bridge over river close to Sea Cadets centre.  Grass open space suitable for informal ball games and dog walking.  Boundaries to be planted with native thorn hedge planting. Longer grass margins to the open space.



## 6.0 Enhancing existing sections

### 6.1 Condition survey

Table 4: Condition survey of riverside spaces

No	Name	Condition survey (items requiring action)
1.0	Westgate Parks <ul style="list-style-type: none"> <li>• Toddlers Cove</li> <li>• Bingley Island</li> <li>• Tannery Field</li> <li>• Westgate Gardens</li> </ul>	<ul style="list-style-type: none"> <li>• Surface dressing of paths</li> <li>• Covered by HLF project</li> <li>• Surface dressing of paths</li> <li>• Surface dressing of paths; planting design improvements</li> </ul>
2.0	Bingley Court	<ul style="list-style-type: none"> <li>• Drovers bridge to be either opened or closed off</li> <li>• Weed tie to be screened with planting; information sign</li> <li>• New length of path to connect development with city centre via south bank of river through Rheims Way underpass</li> </ul>
3.0	Rheims Way underpass	<ul style="list-style-type: none"> <li>• Graffiti solution (CCTV)</li> <li>• New improved LED lighting</li> </ul>
4.0	Tannery Park	<ul style="list-style-type: none"> <li>• Solution to replace/adapt step access next to Rheims Way underpass</li> </ul>
5.0	Greyfriars Garden	<ul style="list-style-type: none"> <li>• Surface dressed paths</li> <li>• Improved seating</li> <li>• Areas of longer grass</li> <li>• Habitat enhancement</li> </ul>
6.0	The Franciscan Gardens	<ul style="list-style-type: none"> <li>• Small habitat enhancement additions (by the Eastbridge Hospital Trust)</li> <li>• Interpretation signage</li> </ul>



No	Name	Condition survey (items requiring action)
		(NB. Need to discuss and agree with land owner)
7.0	Victoria Walk Marlowe Theatre	<ul style="list-style-type: none"> <li>• Bulb planting</li> <li>• Bat and bird boxes</li> </ul>
8.0	Butterfly Garden	<ul style="list-style-type: none"> <li>• Nectar-rich planting to attract bees and butterflies</li> <li>• Interpretation signage</li> </ul>
9.0	The Causeway	<ul style="list-style-type: none"> <li>• New path link</li> <li>• Artwork</li> <li>• Planting to 'filter' views of parked cars</li> <li>• Interpretation signage</li> </ul>
10.0	Solly's Orchard	<ul style="list-style-type: none"> <li>• Review seating Interpretation signage</li> <li>• Repaint railings, gates and bridges</li> <li>• Roses and honeysuckle against wall</li> <li>• Longer grass</li> <li>• Nectar-rich planting</li> <li>• Use/ideas for enclosed space by river bridge</li> </ul>
11.0	Bus Company Island	<ul style="list-style-type: none"> <li>• Thinning of mature trees</li> <li>• Hibernacula</li> <li>• Repair timber boardwalk to pond</li> <li>• New interpretation board</li> <li>• Orchard restoration</li> <li>• Consider bird and bat boxes</li> </ul>
12.0	St Radigunds Bridge to Kingsmead Bridge	<ul style="list-style-type: none"> <li>• Wider shared path for pedestrians and cyclists (3.0m min. width)</li> <li>• Investigate siting cycle path on edge of car park and reconfiguring parking space</li> </ul>



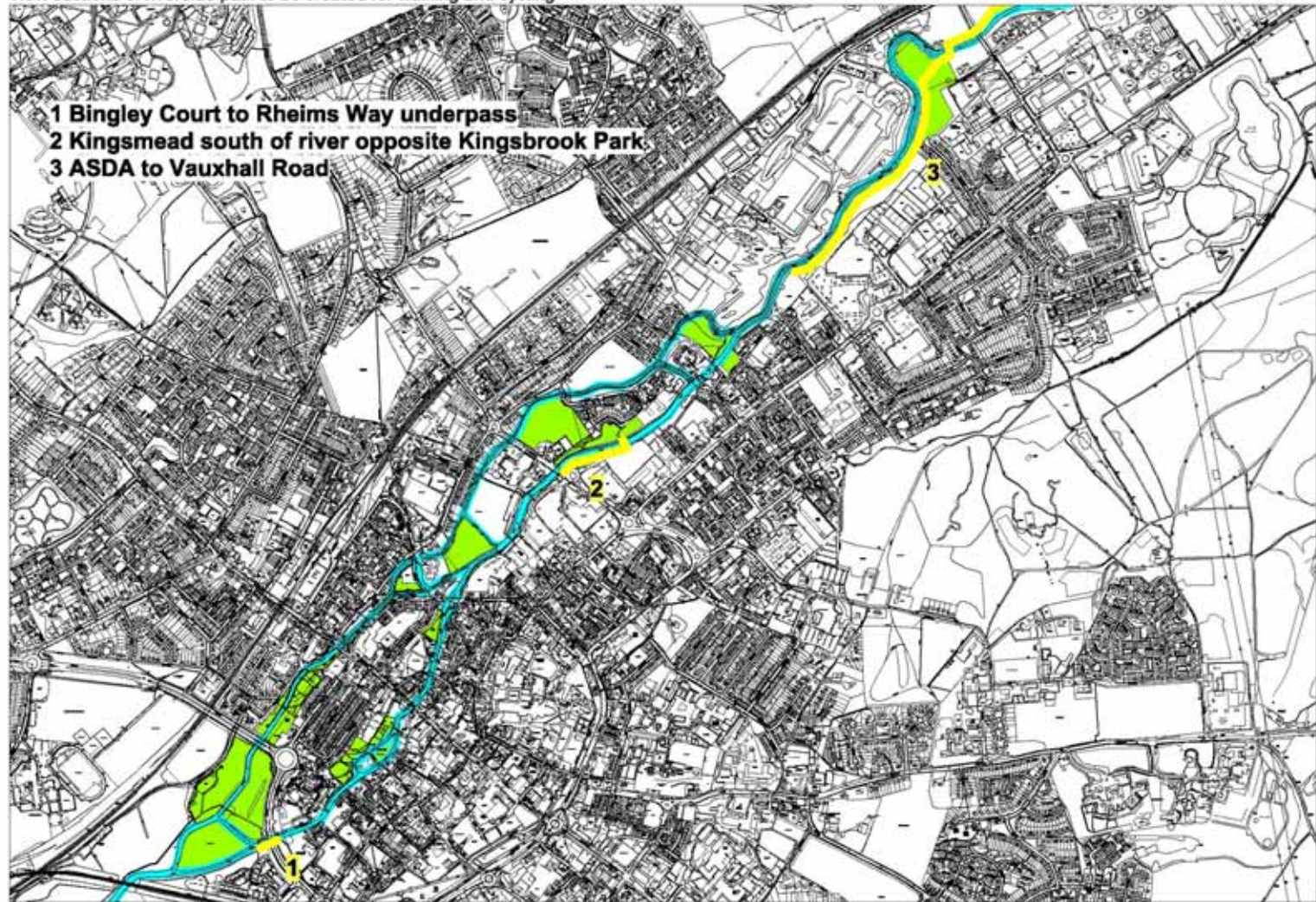


No	Name	Condition survey (items requiring action)
		<ul style="list-style-type: none"> <li>• Replacement pedestrian and cycle bridge opposite Kingsmead junior school</li> <li>• Wider path on north side of river between replacement bridge (above) and Kingsmead bridge</li> <li>• Repair eroded grass margin</li> </ul>
13.0	Kingsmead Field	<ul style="list-style-type: none"> <li>• New seating on edge of space</li> <li>• Pollarded willows on riverside boundary</li> </ul>
14.0	Kingsbrook Park	<ul style="list-style-type: none"> <li>• Areas of longer grass subject to consultation</li> <li>• Bird and bat boxes</li> <li>• Investigate improved path access on north and east boundaries of Kingsmead island</li> </ul>
15.0	Kingsmead Bridge to Barton Mill	<ul style="list-style-type: none"> <li>• Surface dressed path</li> <li>• Convert existing lighting to LED</li> <li>• New foot bridge to replace temporary bridge</li> <li>• Cut grass margins to path</li> </ul>
16.0	Barton Mill	<ul style="list-style-type: none"> <li>• Investigate low-level management options after transfer of land to council</li> </ul>
17.0	Sargeants Parade	<ul style="list-style-type: none"> <li>• Determine realistic use of space</li> </ul>
18.0	Barton Mill to Asda	<ul style="list-style-type: none"> <li>• New LED lighting of consistent type</li> <li>• Surface dressed path</li> </ul>
19.0	Vauxhall Avenue Field	<ul style="list-style-type: none"> <li>• New shared (surface dressed) path</li> <li>• New play area subject to funding (0-12+ years)</li> <li>• New screen planting</li> <li>• New foot bridge</li> </ul>



## 7.0 Creating missing sections

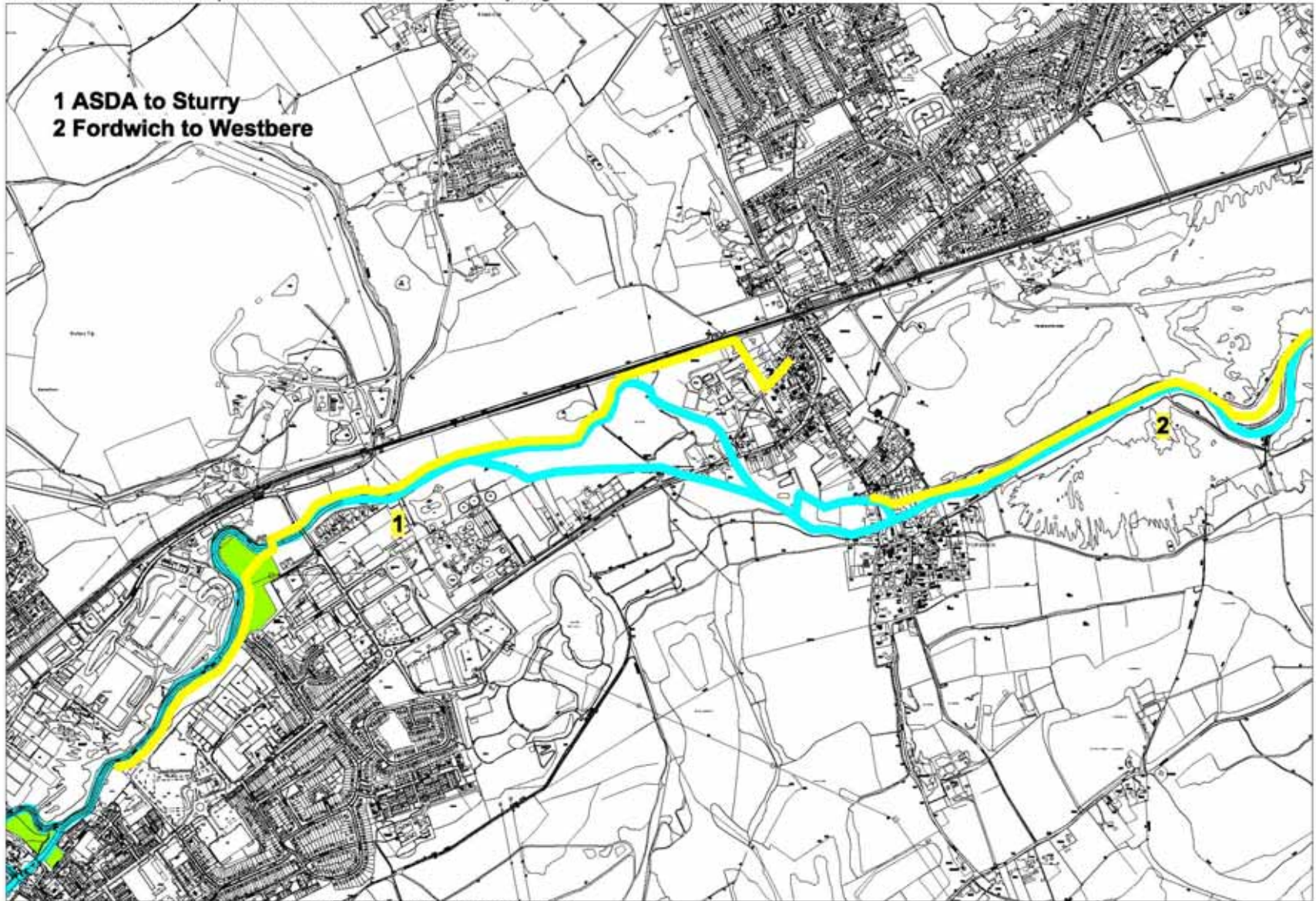
New sections of riverside path to be created for walking and cycling



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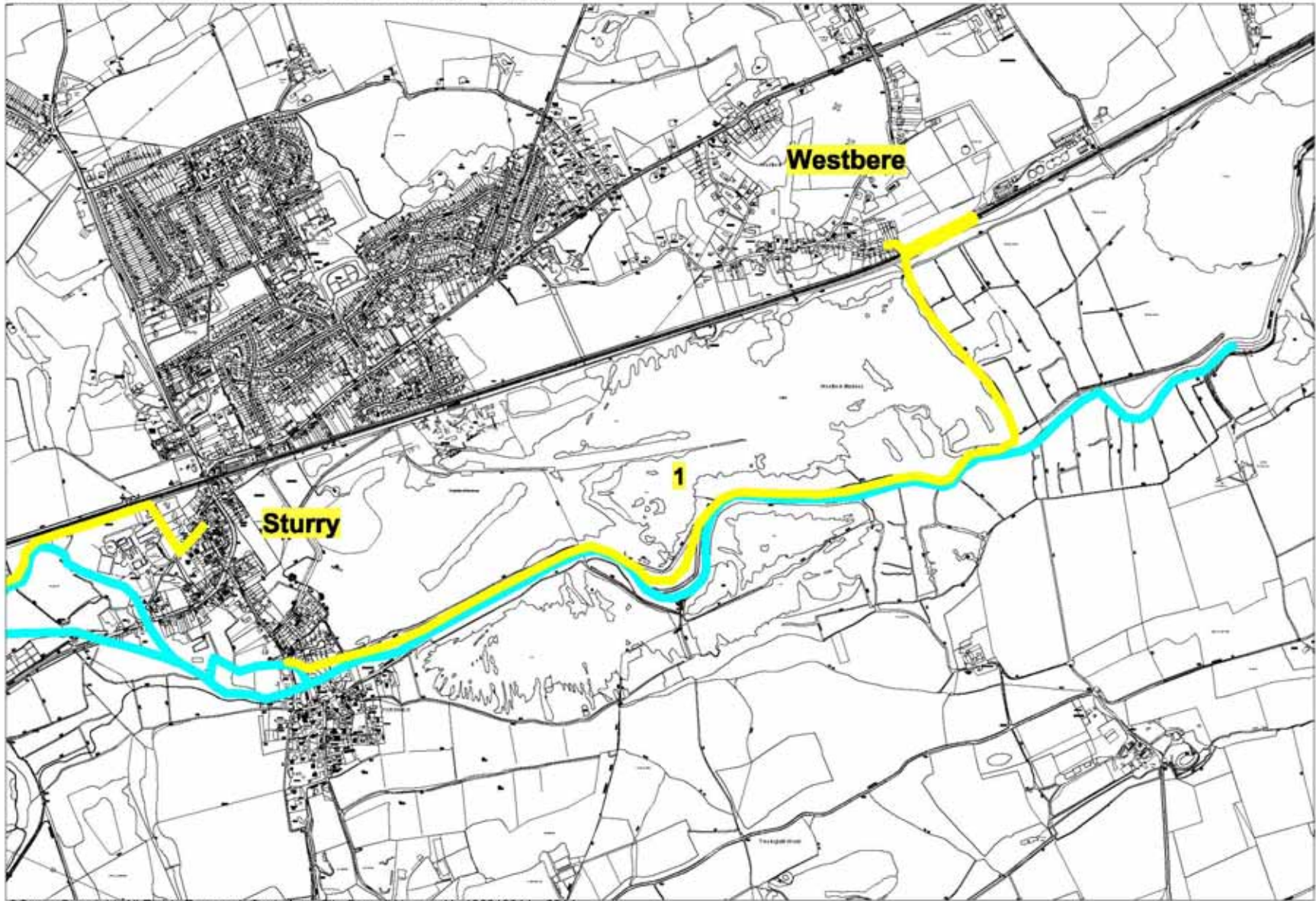
New sections of riverside path to be created for walking and cycling



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New sections of riverside path to be created for walking and cycling



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The following sections of riverside access do not exist and need to be provided to complete the network (Chartham to Sturry):

**Table 5: Missing sections of access path**

No.	Name	Landowner	Approximate length of new path	Construction cost estimate July 2014
1.0	Kingsmead (south of the river opposite Kingsbrook Park)	<ul style="list-style-type: none"> <li>• CCC</li> </ul>	140m	£50,000
2.0	ASDA to Vauxhall Avenue (Note: Need to link path to ASDA entrance)	<ul style="list-style-type: none"> <li>• ASDA</li> <li>• Private landowner</li> </ul>	480m	£150,000
3.0	Vauxhall Avenue to Vauxhall Road	<ul style="list-style-type: none"> <li>• CCC</li> </ul>	460m	£250,000
4.0	Vauxhall Road to Sturry	<ul style="list-style-type: none"> <li>• South Eastern Power Networks Plc</li> <li>• Kings School</li> </ul>	1,350m	£350,000
5.0	Bingley Court to Rheims Way underpass	<ul style="list-style-type: none"> <li>• KCC</li> </ul>	35m	£20,000
6.0	Fordwich to Westbere	<ul style="list-style-type: none"> <li>• TBC</li> <li>• Feasibility to be determined</li> </ul>	3,506m	£400,000
7.0	Westbere to Hersden (Parallel with railway)	<ul style="list-style-type: none"> <li>• TBC</li> <li>• Feasibility to be determined</li> </ul>	920m	£220,000

Note: estimated construction costs include path construction, furniture, signage, planting and bridges where identified.

In some cases implementation will involve land purchase or legal agreements with landowners. These potential costs, unknown at the time of writing this strategy, have not been included in the above table.



## 7.1 Funding opportunities

The city council is well placed to coordinate efforts to obtain funding for these worthwhile off-road walking and cycle routes. It is likely funding will be needed to purchase land, enter into access agreements with landowners and to construct path routes. The following funding opportunities are available to the city council:

- Section 106 funding from new developments for specific sites
- Community Infrastructure Levy (tariff imposed on new developments and used district-wide for range of specific infrastructure, eg. Transport, education, open space)
- Canterbury City Council capital funding
- Local Transport Plan Fund (Kent County Council)
- Local Sustainable Transport Fund (Kent County Council)
- Sustrans (national interest group promoting walking and cycling)
- Central Government initiatives to support sustainable transport projects
- Heritage Lottery Fund

Local government funding for capital projects such as these is typically unpredictable. By agreeing a schedule of highly desirable projects with an approximate cost the authority will be better placed to take advantage of funding opportunities when they arise.

In terms of the strategic perspective Kent County Council will be working with Ashford Borough Council to extend the riverside walking and cycling route from Godmersham to Wye and on to Ashford.

Canterbury City Council will be investigating the feasibility of extending the riverside route from Fordwich to Westbere and then on to Hersden following a path running parallel with the south side of the railway line to the former Chislet Holt railway crossing.



## 8.0 Future management

A key aim of this strategy is to create a continuous riverside corridor trail with a recognisable identity. Existing sections will be upgraded to meet the design quality of new sections.

Once this has been achieved the challenge will be to manage the infrastructure and riverside environment in accordance with agreed management principles in order to further develop and promote ease and pleasure of use by people walking and cycling, design quality aimed at reinforcing a recognisable identity and habitat enhancement to encourage greater wildlife diversity.

## 8.1 Themes to guide future management

If a set of themes and aspirations can be agreed by designers, users and those responsible for managing contracts, improved management regimes are likely to result.

The following table sets out themes, aspirations and management actions required.

**Table 6: Enhanced future management**

Theme	Aspiration	Management action
Welcoming	<ul style="list-style-type: none"><li>• Welcoming signage at appropriate locations</li><li>• Range of events</li></ul>	<ul style="list-style-type: none"><li>• Ensure signage is presentable and clean</li><li>• Ensure entrance points are open with closing time clearly stated (where space locked at night)</li><li>• Support and encourage appropriate events to attract people</li></ul>
Clean	<ul style="list-style-type: none"><li>• Litter-free</li><li>• Graffiti –free</li><li>• Dog-mess free</li><li>• Clear pathways</li></ul>	<ul style="list-style-type: none"><li>• Well-placed litter bins in appropriate locations at access points and key intersections</li><li>• Avoid over-provision of litter bins. Instead encourage people to take waste home or to nearest bin</li><li>• Avoid separate bin for dog waste</li></ul>



Theme	Aspiration	Management action
	<ul style="list-style-type: none"> <li>• Clean furniture and signs</li> <li>• Unpolluted river free of inorganic debris</li> </ul>	<ul style="list-style-type: none"> <li>• Speedy removal of graffiti</li> <li>• Furniture and signs to be cleaned regularly (especially when located beneath trees)</li> <li>• Organised river clean up events twice per year</li> </ul>
Safe	<ul style="list-style-type: none"> <li>• Natural surveillance optimised</li> <li>• Presence of other people</li> <li>• CCTV in secluded urban spaces</li> <li>• Well maintained paths</li> </ul>	<ul style="list-style-type: none"> <li>• Tree cover to be managed to promote appropriate views to river from nearby buildings</li> <li>• CCTV cameras and associated signage to be maintained in good working order</li> <li>• Lighting to be inspected and maintained in good working order</li> <li>• Any Section of route noted as being perceived as unsafe to be redesigned to mitigate issue(s)</li> <li>• Regular inspections of path surfaces with defects repaired speedily. Reporting system required to enable users to report defects.</li> </ul>
Green	<ul style="list-style-type: none"> <li>• Planting of trees and shrubs of appropriate species in appropriate locations</li> <li>• Balance of open and semi-enclosed spaces (grass and trees)</li> </ul>	<ul style="list-style-type: none"> <li>• Existing trees, hedges and shrubs to be managed to enable easy and comfortable use of the riverside path by walkers and cyclists</li> <li>• Grass margins to be maintained to a maximum height of 50mm to indicate regular management</li> <li>• All new planting to be coordinated /designed by officer responsible for riverside</li> <li>• Worn areas of grass (due to shade cast by trees, occasional winter flooding or desire lines following more direct routes) to be repaired at appropriate time of year using appropriate seed mix</li> </ul>
Recognisable	<ul style="list-style-type: none"> <li>• Identifiable brand for the route</li> <li>• Appropriate signage in appropriate locations</li> <li>• Recognisable logo</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure all signs and furniture are maintained in good condition</li> <li>• All metal work such as railings, gates, bins, seats, lighting columns and signs are repainted on a regular basis using agreed colour</li> <li>• Avoid addition of adhoc furniture, signage and planting since this will dilute the strength of the image</li> </ul>





Theme	Aspiration	Management action
	<ul style="list-style-type: none"> <li>Unified colour of railings, lighting columns, furniture and signs etc</li> </ul>	
Wildlife-friendly	<ul style="list-style-type: none"> <li>Predominantly native tree and shrub species</li> <li>Areas of longer grass/vegetation</li> <li>Access for people on one side of river and wildlife on the other</li> </ul>	<ul style="list-style-type: none"> <li>Identify and agree areas where grass and river bank vegetation can be left to grow longer</li> <li>Always maintain shorter grass margin to all paths (min.1.0m wide) to indicate area is managed</li> <li>Discourage people to access certain areas through use of vegetation (nettles, bramble etc) or use fencing or railings</li> <li>Where possible (particularly in urban areas) promote access for people on one side of the river leaving a 'quiet' riverbank on the other for wildlife</li> </ul>

It is hoped that agreement of this strategy will enable all involved in the management of riverside spaces to come together to adjust existing procedures to produce a better coordinated, more pro-active management programme.

The contracts team of the City Council responsible for managing open spaces have agreed to implement the management actions set out in table 6.

## 8.2 Partnership working with external organisations, friends groups and volunteers

The city council work directly with the Environment Agency (EA) and the Kentish Stour Countryside Partnership (KSCP) as well as the following friends groups with interest in specific sections of the riverside:

- The 'Love Hambrook Marshes Trust'



- The Friends of Westgate Parks
- The Friends of Kingsmead Field
- The Friends of the Riverside (Greyfriars garden, Butterfly garden, Miller's Field, Solly's Orchard and former Abbots Mill site)
- The Abbots Mill Project

This strategy recognises that working with interested local people in the form of friends groups is central to the successful delivery of a high quality, vibrant, well managed riverside environment.

The linear nature of the riverside corridor lends itself to accommodating a number of different interest groups. The city council in conjunction with the KSCP/EKCIP coordinate the Friends of Westgate Parks and the Friends of the Riverside and work with the Friends of Kingsmead Field.

Involvement fosters 'ownership', interest and enables the riverside environment to be better understood and cherished. Local people may be able to undertake tasks which the local authority is no longer able to resource, such as, historical research, event organisation, guided tours, and website creation and management. External organisations are able to apply for funding for agreed projects to maximise budgets.

A key aim of this strategy is to establish an overarching framework within which interest groups can make a meaningful contribution. The agreement of future visions for these spaces is part of this process. Partnership working involving the City Council in a coordinating role, external organisations and friends groups is the preferred way of working.



## 9.0 Action plan

Table 7: Action plan

No	Subject	Action	Lead	Date	Indicator	Priority
1.0	<b>Deliver strategic sections of missing riverside access path</b>					
1.1	ASDA to Vauxhall Avenue: new path	<ul style="list-style-type: none"> <li>Secure consent of landowner(s)</li> <li>Secure planning consent and funding</li> <li>Construct new path</li> <li>Implement furniture, signage, planting etc</li> </ul>	T&E	By June 2016	Completion/no. users	H
1.2	Vauxhall Avenue to Vauxhall Road: new path and bridge	<ul style="list-style-type: none"> <li>Secure planning consent and funding</li> <li>Construct new path</li> <li>Install new walking and cycling bridge</li> <li>Implement furniture, signage, planting etc</li> </ul>	T&E	By Dec 2017	Completion/no. users	M
1.3	Bingley Court to Rheims Way underpass: new path	<ul style="list-style-type: none"> <li>Secure consent of landowner (KCC)</li> <li>Check need for planning consent</li> <li>Obtain funding</li> <li>Construct new path</li> </ul>	T&E	By June 2016	Completion/no. users	H
1.4	Kingsmead bridge eastwards to new foot bridge (south side of river): new path	<ul style="list-style-type: none"> <li>Ensure space reserved in Kingsmead redevelopment plans for new path</li> <li>Developer to fund new path as integral part of development</li> </ul>	T&E	On-going	Completion/no. users	M
1.5	Kingsmead Field	<ul style="list-style-type: none"> <li>Enhance the field in accordance with the agreed Management Plan</li> <li>Investigate reopening of pedestrian access beneath Stonebridge Road Bridge in order to reinstate circular walk around the island.</li> </ul>	T&E	On-going	Decision on feasibility	M



No	Subject	Action	Lead	Date	Indicator	Priority
1.6	Vauxhall Road to Sturry: new path	<ul style="list-style-type: none"> <li>• Ensure space reserved for riverside path in plans for Sturry bypass</li> <li>• Secure consent of landowner(s)</li> <li>• Secure planning consent and funding</li> <li>• Construct path</li> </ul>	T&E	By Dec 2019	Completion/no. users	M
1.7	Fordwich to Westbere: new path	<ul style="list-style-type: none"> <li>• Secure consent of landowner(s) to surface worn path</li> <li>• Secure planning consent and funding</li> <li>• Construct path</li> </ul>	T&E	By Dec 2020	Completion/No. of users	M
1.8	Westbere to Hersden: new path	<ul style="list-style-type: none"> <li>• Secure consent of landowner(s)</li> <li>• Secure planning consent and funding</li> <li>• Construct path</li> </ul>	T&E	By Dec 2025	Completion/No. of users	M
<b>2.0</b>	<b>Deliver key infrastructure to improve access and movement in Canterbury</b>					
2.1	Existing footbridge opposite Kingsmead Junior school: replacement bridge	<ul style="list-style-type: none"> <li>• Secure consent of landowner(s)</li> <li>• Secure agreement of EA</li> <li>• Check if planning consent needed</li> <li>• Obtain funding</li> <li>• Replace bridge with new walking and cycling bridge</li> </ul>	T&E	By Dec 2016	Completion/No. of users	H
2.2	Existing footbridge at Barton Mill: replacement bridge	<ul style="list-style-type: none"> <li>• Secure consent of landowner(s)</li> <li>• Secure agreement of EA</li> <li>• Secure planning consent</li> <li>• Replace bridge with new walking and cycling bridge</li> </ul>	T&E	By Dec 2015	Completion/No. of users	H



No	Subject	Action	Lead	Date	Indicator	Priority
2.3	St. Radigunds car park: improved shared walking and cycle movement	<ul style="list-style-type: none"> <li>Investigate feasibility of accommodating cycle path within car park</li> <li>Investigate feasibility of constructing wider shared path to replace existing</li> <li>Secure planning consent and funding</li> <li>Construct new path</li> </ul>	T&E	By June 2017	Completion/No. of users	H
2.4	Kingsmead north side of river opposite Kingsmead Junior School: new wider path	<ul style="list-style-type: none"> <li>Secure consent of landowner(s)</li> <li>Secure planning consent and funding</li> <li>Construct new, wider path</li> </ul>	T&E	By June 2018	Completion/No. of users	M
2.5	Millers Field / The Causeway: new short path link	<ul style="list-style-type: none"> <li>Secure planning consent and funding</li> <li>Construct new path</li> </ul>	T&E	By Dec 2015	Completion/No. of users	H
2.6	Tannery access steps leading to Rheims Way underpass: improve access	<ul style="list-style-type: none"> <li>Amend design to improve access for wheelchairs and cycles</li> <li>Secure planning consent and funding</li> <li>Implement design change</li> </ul>	T&E	On-going	Completion/No. of users	L
2.7	Riverside access through Tannery open space (Rope Walk)	<ul style="list-style-type: none"> <li>Agree daily opening and closing of Tannery open site</li> </ul>	Dev Mgt	By Nov 2015	Opening of access link	H
<b>3.0</b>	<b>Surface dressing existing paths</b>					
3.1	Westgate Parks : unify park and increase impact	<ul style="list-style-type: none"> <li>Add available funding to Westgate Parks budget</li> </ul>	T&E	By Dec 2015	Completion/Positive comments	H
3.2	Sollys Orchard, Millers Field to Barton Mill	<ul style="list-style-type: none"> <li>Obtain funding and implement upgrade</li> </ul>	T&E	On-going	Completion/Positive comments	M
<b>4.0</b>	<b>Lighting (upgrading existing to LED)</b>					
4.1	St. Radigunds to ASDA	<ul style="list-style-type: none"> <li>Obtain cost and funding</li> <li>Implement upgrade</li> </ul>	T&E	On-going	No. of users (people and bats)	M



No	Subject	Action	Lead	Date	Indicator	Priority
<b>5.0</b>	<b>Furniture and signage</b>					
5.1	Greyfriars Franciscan Garden, Sollys Orchard, Millers Field, St. Radigunds to Kingsmead Bridge	<ul style="list-style-type: none"> <li>Identify where new seats, bins and signs needed.</li> <li>Obtain funding</li> <li>Implement upgrade</li> </ul>	T&E	By Dec 2016	No. of users / positive comments	M
<b>6.0</b>	<b>Wildlife habitat enhancement</b>					
6.1	In-channel river enhancement works	<ul style="list-style-type: none"> <li>Programme of prioritised works to be agreed</li> <li>EA consent to be obtained</li> <li>Funding to be obtained</li> <li>Implement works</li> </ul>	KSCP	On-going	No. of indicator species	M
6.2	Terrestrial enhancement works	<ul style="list-style-type: none"> <li>Programme of prioritised works to be agreed</li> <li>Funding to be obtained</li> <li>Implement works</li> </ul>	T&E	By Dec 2016	No. of indicator species	M
<b>7.0</b>	<b>Enhanced maintenance and management</b>					
7.1	Agree enhanced management of riverside spaces	<ul style="list-style-type: none"> <li>Agree approach using principles</li> <li>Agree specific changes</li> <li>Implement changes</li> </ul>	T&E	By Dec 2015	No. of users / positive comments	H
<b>8.0</b>	<b>Visitor numbers</b>					
8.1	Monitor number of users	<ul style="list-style-type: none"> <li>Install people and cycle counters at key locations to record number of users</li> </ul>	T&E	By Dec 2016	User number information	M



## 10.0 Monitor and review

The action plan provides a framework for the monitoring of this strategy.

The action plan will be implemented not by the city council acting alone, but by working closely with partner organisations, interest groups and the community.

Even the best plans need review to ensure they remain targeted and relevant. This strategy should always be thought of as a work in progress, able to accommodate changing circumstances, political and organisational change and new or different funding opportunities.

Annual reviews, carried out with a forum representing a wide range of local interests are recommended with opportunity created to amend, add or delete actions in line with what the city council and community wish to achieve.



*Opening new link path*



# River Stour & Floodplain Restoration Plan Shalmsford Street to A2



February 2013



Conserving, enhancing and promoting the  
countryside and urban green space of the Stour  
Valley





## **River Stour & Floodplain Restoration Plan – Shalmsford Street to A2**

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Andy Thomas	Wild Trout Trust
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## Contents

	<u>Page</u>	
1.0	Introduction	5
2.0	Catchment Overview	5
3.0	Shalmsford Street to Chartham Corn Mill	6
3.1	River Character	6
3.2	In Channel Recommendations	7
3.3	Surrounding Land Character	7
3.4	Surrounding Land Recommendations	8
4.0	Pickleden Stream/ Shalmsford Street Dyke	8
4.1	River Character	8
4.2	In Channel Recommendations	9
5.0	Chartham Corn Mill to Chartham Paper Mill	9
5.1	River Character	9
5.2	In Channel Recommendations	10
5.3	Surrounding Land Character	10
5.4	Surrounding Land Recommendations	11
6.0	Chartham Paper Mill Problems and Solutions	11
6.1	Recommendations	13
7.0	Chartham Paper Mill to Horton Manor	13
7.1	River Character	13
7.2	In Channel Recommendations	14
7.3	Surrounding Land Character	14
7.4	Surrounding Land Recommendations	15
8.0	Horton Manor to Milton Manor Roundabout	15
8.1	River Character	15
8.2	In Channel Recommendations	15
8.3	Surrounding Land Character	16
8.4	Surrounding Land Recommendations	16
9.0	Milton Manor Roundabout to Tonford Bridge	17
9.1	River Character	17
9.2	In Channel Recommendations	18
9.3	Surrounding Land Character	19
9.4	Surrounding Land Recommendations	19
10.0	Tonford Bridge to A2	19
10.1	River Character	19
10.2	In Channel Recommendations	20
10.3	Surrounding Land Character	20
11.0	Conclusion	20
12.0	Table of Actions and Costings	21

## Illustrations

		<u>Page</u>
Figure 1	Map of Stour – Shalmsford Street to A2	6
Figure 2	Map of Recommendations between Shalmsford Street and Chartham Corn Mill	Appendix
Figure 3	Map of Recommendations for Pickleden Stream/ Shalmsford Street Dyke	Appendix
Figure 4	Diagram of Appropriate Removal of Bur-Reed	Appendix
Figure 5	Installation Method for Large Woody Debris	Appendix
Figure 6	Soft Revetment Installation Method	Appendix
Figure 7	Map of Recommendations between Chartham Corn Mill And Chartham Paper Mill	Appendix
Figure 8	Recommendations around Chartham Paper Mill	Appendix
Figure 9	Map of Recommendations between Chartham Paper Mill and Horton Manor	Appendix
Figure 10	Map of Recommendation between Horton Manor and Milton Manor Roundabout	Appendix
Figure 11	Map of Recommendations between Milton Manor Roundabout and Tonford Bridge	Appendix

### **1.0 Introduction**

The Kentish Stour Countryside Partnership has undertaken a survey of the River Stour between Shalmsford Street and the A2 in order to identify potential restoration projects within the channel and the floodplain, which would enhance the biodiversity and hydromorphology of the river corridor.

This report follows a 2008 walkover survey conducted by Nigel Holmes on behalf of the Environment Agency and complements a series of improvements to the river corridor downstream of the A2 completed by the Kentish Stour Countryside Partnership in Autumn 2012. These improvements include scrape and pond creation, a series of in-channel improvements through the creation of low flow channels, pools, riffles and berms and the installation of woody debris in small sections of the watercourse.

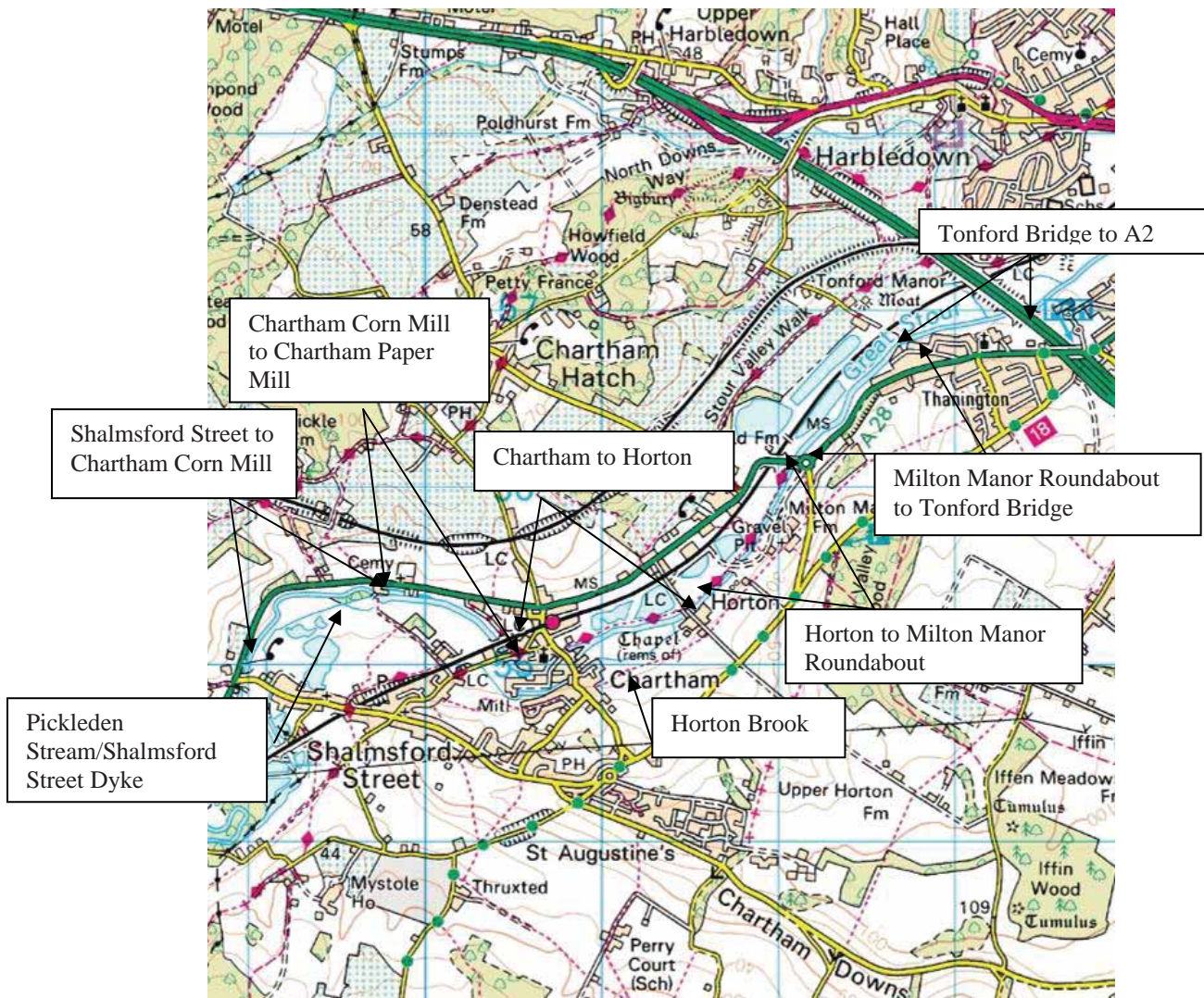
The report is based on a series of walkover surveys and consultation meetings with Environment Agency officers, The Wild Trout Trust, Stour Fisheries, Tonford Fly Fishers, Mid Kent Fisheries, Natural England, Brett Aggregates and Argo Wiggins.

The report was funded by the Environment Agency through Water Framework Directive Funding and identifies improvements to 5000 metres of the River Stour.

## **2.0 Catchment Overview**

The River Stour from Shalmsford Street to the A2 flows in a north easterly direction towards Canterbury. The underlying geology is predominantly chalk and the river exhibits many traditional chalk stream characteristics with shallow fast flowing water over gravel and abundant water crowfoot. The channel has been heavily modified particularly around Chartham Corn Mill and Chartham Paper Mill with several large structures creating long areas of slack water up-stream. However in other areas pools, riffles and in-channel islands are being created as the river attempts to re-naturalise

The Environment Agency Water Body Summary Sheet classifies the river as in poor condition with the main element driving classification as fish although phosphates and hydrology also contribute to this status. The Great Stour running through the chalk is designated a Biodiversity Action Plan priority habitat. The river is stocked with trout by Tonford fishing club but also supports some wild river trout and sea trout along with coarse fish, eel and brook lamprey. Parts of this section traditionally supported white-clayed crayfish as recently as 1999.



**Fig 1**

### **3.0 Shalmsford Street to Chartham Corn Mill**

#### **3.1 River Character**

The first 100 metres of the river downstream of Shalmsford Street is a valuable stretch of chalk stream exhibiting many features typical of this habitat, notably low banks, natural berms, shallow riffles and natural pools.

Nigel Holmes indicates in his report; Great Stour – Recommendations for Rehabilitation from Ashford to Canterbury, that the river could be further improved in this location by manipulation of gravel to create variation in the river bed. However, discussions with Tonford Fishing Club revealed that, due to the existing high quality habitat in this location, the club would prefer for river restoration measures to be concentrated elsewhere.

This stretch of the River Stour historically supported white clawed crayfish. The current bed substrate consists mainly of small to medium gravel. Providing some larger river cobbles in this section of river could provide suitable habitat for white clawed crayfish in the future.

Upstream of Chartham Corn Mill the river becomes ponded.

The banks immediately above the mill form a garden and appear to have been mown to the waters edge providing little marginal vegetation.

The river has been fenced throughout this section to protect banks from poaching by livestock. The fences do not visually enhance the river corridor but are set well back with access available through stiles.



**Fencing along banks**



**Bankside management above Chartham Corn Mill**

### **3.2 In –Channel Recommendations for Shalmsford Street to Chartham Corn Mill (figure 2)**

- Place large cobbles in channel to provide habitat for white-clawed crayfish.
- Create an information leaflet for residents owning riverside property on best practice of river margins.
- Visit riverside landowners to discuss bankside management

### **3.3 Surrounding Land Character**

The right bank of the Stour at Shalmsford Street comprises low lying grazing fields, which periodically flood in winter. These fields have great potential for reconnecting the river to its floodplain, potentially alleviating the problems of flooding downstream and providing habitat for a variety of wildlife.

Directly above Chartham Corn Mill. The Pickleden Stream enters the Stour. Between these two channels is an area of woodland. This woodland has been urbanised in places with the addition of vegetable plots but has potential to be restored to wet woodland.



**Wet fields close to Shalmsford Street**



**Vegetable plot in wet woodland site**



**Potential for enhancing wet woodland**

### **3.4 Surrounding land recommendations (figure 2)**

- Create a series of scrapes in the surrounding meadows to retain water and provide habitat for waders, geese and opportunities for wetland plants to colonise.
- Create off line ponds in order to provide refuge habitat for fish, invertebrates and macrophytes during low flow periods.
- Investigate opportunities for diverting ditch connecting Pickleden Stream with Stour in order to allow occasional flooding of the woodland.
- Investigate opportunities for creating ponds and scrapes within the woodland in order to retain water and provide a wetter habitat. (These last options need to be discussed with landowner)

## **4.0 Pickleden Stream/Shalmsford Street Dyke**

### **4.1 River Character**

The Pickleden Stream (Shalmsford Street Dyke) is a tributary of the Stour and managed by the River Stour Internal Drainage Board. The channel is free flowing over gravel and has great potential as a nursery stream for trout and habitat for white-clawed crayfish. Marginal plants show good diversity. However, in places, gravels have become heavily silted and the channel blocked with branched bur-reed possibly caused by a structure placed in the channel beneath a low lying bridge. Japanese Knotweed also occurs on an area upstream of Shalmsford Street. Immediately upstream of the Stour, the channel becomes deep and sluggish. This section of the channel has been fenced and, if bankside vegetation is left unmanaged, it may become coarse, creating a dark corridor and preventing the growth of marginal plants.



**Marginal plant diversity**



**Blockage causing sluggish flow and siltation problems**



**Coarse bankside vegetation creating dark corridor**

#### **4.2 In-Channel Recommendations for Pickleden Stream/ Shalmsford Street Dyke (figure 3)**

- Install large cobbles in the channel to provide shelter for fish and potentially white clawed crayfish
- Manipulate the planform of the channel to create pools and shallow glides through small scale dig and dump techniques.
- Install small scale woody debris in the channel to create habitat for macrophytes and fly life and vary the channel flow providing natural scouring of gravels and pool creation.
- Remove the obstruction beneath the low-lying bridge that appears to be blocking free passage of water and fish and is creating siltation problems upstream.
- Treat Japanese Knotweed upstream to prevent it spreading.
- Remove 80% of branched bur-reed in linear strips to create a kick affect for water within the channel (Figure 4)
- Undertake a long section assessment of the lower channel to ascertain the need for bed level restructuring through the insertion of gravel in order to re-create a fast flow at this location.

### **5.0 Chartham Corn Mill to Chartham Paper Mill.**

#### **5.1 River Character**

At Chartham Corn Mill, the Stour flows across a weir with a fish pass, of a pool and traverse design, incorporated to the right of the main structure. Beyond the weir the river widens to create a large pool with a shallow wet berm on the right bank. The river here is beginning to naturalise with in-channel bars and islands and a long section of riffle, which potentially provides an excellent spawning site for trout.



Below the footbridge the river is wide; natural in-channel islands are becoming evident and shallow berms provide excellent opportunities for a diverse range of marginal plants.

An increase in hydraulic roughness could be achieved in this area through the felling and securing of woody debris in the channel. (Installation method – Figure 5) This would create habitat diversity by trapping silt which could then be colonised by marginal plants and creating self scoured pools downstream. Furthermore, woody debris in this location could alleviate flooding problems further downstream by encouraging out of bank flows and helping to delay flood peaks.

Further downriver pools could be created beneath overhanging trees to provide shaded areas for fish to lie up.

Above and below the railway line at Chartham there are many gardens reaching down to the river bank. The majority of these gardens have hard revetments to prevent erosion and in some places to provide mooring for boats. This represents a long stretch of river bank devoid of marginal vegetation.

Soft revetments could be created along this stretch through the use of hazel faggots held in place by untreated wooded stakes and back filled with soil before being planted with colourful marginal plants or left to vegetate naturally. (figure 6) This would provide a valuable area of marginal vegetation while also providing additional erosion control for homeowners. Awareness raising among homeowners about the importance of marginal vegetation and best practice is also recommended.

Below the railway line the river is very broad and slack caused by the weir and sluice structures at Chartham Paper Mill. Bank poaching is occurring on the right bank, which may provide conditions for a variety of marginal plants. Changes to structures at the mill would have a major impact on the character of this area, which is currently ponded to such an extent it is almost a wide shallow lake.

## **5.2 In-Channel Recommendations Chartham Corn Mill to Chartham Paper Mill (figure 7)**

- Fell and secure woody debris into the channel at two locations
- Create pools downstream of woody debris at two locations
- Discuss soft revetments with riverside properties that have installed hard revetments. Install where appropriate. (Potential for approximately 160m of soft revetments)

## **5.3 Surrounding Land Character**

The channel between Chartham Corn Mill and Chartham Paper Mill is surrounded by grazed land and, above the railway line, has been fenced on behalf of the Tonford Fishing Club to prevent bankside erosion.

The land has great potential for reconnecting the river with its floodplain through the creation of scrapes and off line ponds. Potential also exists to block land drains and provide some localised flooding possibly helping to alleviate the problems of flooding downriver and providing valuable habitat for wetland bird species, invertebrates and wetland plants.

An area of woodland exists where the channel divides downstream of Chartham Corn Mill. Wet woodland could be recreated here by creating shallow scrapes and pools within the woodland in order to retain water. Manipulation of the small channel bordering the A28 could possibly achieve higher flows onto this land. Wet woodland is a Biodiversity Action Plan Habitat.

#### **5.4 Surrounding Land Recommendations (figure 7)**

- Create a series of scrapes in the surrounding meadows to retain water and provide habitat for waders.
- Investigate possibility of blocking land drains to allow localised flooding providing habitat for wetland wildlife and flood storage potential.
- Create off line ponds in order to provide refuge habitat for fish, invertebrates and macrophytes during low flow periods.
- Investigate opportunities for diverting water from channel running alongside the A28 to create wetter conditions in wooded habitat alongside Stour.
- Create ponds and scrapes within the woodland in order to retain water and provide a wetter habitat. (These last options need to be discussed with landowner)

#### **6.0 Chartham Paper Mill problems and solutions**

A mill has existed in this location for approximately 1000 years. The current mill still produces high quality tracing paper and is owned by Argo Wiggins.

The Stour divides into two branches at the mill site. The upper channel travels under the mill through a series of 4 sluice gates contained within a 70m culvert. It emerges to form a wooded channel contained within stone banks before rejoining the main river outside of Chartham village

The lower arm falls over a very large weir. A fish pass created here 25 years ago allows some fish passage past the structure. The channel then drops over a smaller weir below Chartham village before rejoining the upper arm.

The structures within Chartham Mill represent a major obstacle to fish passage, despite the fish pass in place on the lower arm. They also create large areas of slack, ponded channel upstream. Removing structures and re-grading the river would have major benefits to fish passage and habitat upstream.

Following discussions with the mill manager it appears that the mill's current need for river water is much reduced as water for the milling process is provided by a bore hole. The mill still has a need to retain a head of water though the mill sufficient to operate a sprinkler system. This is a requirement of their insurance policy. However, in theory they have no objection to structures being removed along the river as long as this does not affect the efficiency of their sprinkler system.

Further investigation is needed into the possibility of opening sluices during fish migration or creating an structure which would allow fish passage through the sluices while retaining a water level sufficient to operate the mill's sprinkler system.

However, theoretically it would be possible to remove all weirs on the lower arm without affecting the mills operations. Removal of the large weir would have a major impact on the river upstream and, while this is desirous, it could only happen after further surveys and with extensive consultation with riverside properties and landowners.

A third channel running to the north of the River Stour may provide a temporary solution to fish passage through this section. Horton Brook leads from Horton Manor around the back of Chartham Paper Mill before ending in a shallow channel upstream. It currently does not join the River Stour but terminates in a shallow wet ditch close by.

A fallen tree currently blocks the upstream end of Horton Brook and fish passage is blocked by a series of weirs at the lower end. It is possible that the upstream end of this channel could be linked to the main Stour, blockages removed and either the weirs removed or stepped to allow fish passage through this route. This may be an interim measure which allows fish passage in the short term until work can be undertaken on the mill.

Investigating the feasibility of this project is outside of the scope of this report but providing a fish passage along Horton Brook has major benefits for the health of the river system upstream.



**Weir upstream of Chartham Paper Mill**



**Horton Brook at Chartham**

## 6.1 Recommendations (figure 8)

- Investigate the potential for providing fish passage through Horton Brook.
- Investigate removal of weir at Chartham Paper Mill

## 7.0 Chartham Paper Mill to Horton Manor

### 7.1 River Character

The Stour emerges from Chartham Paper Mill in two channels. Access to the upper channel is restricted but immediately below the mill is a stretch of bank re-enforced with concrete. It is possible that this concrete re-enforcement is unnecessary and can be removed. If not soft revetments should be placed on the inside of this bank to provide some natural habitat. (figure 6) Downstream access was not possible but undoubtedly there is scope for berms, riffles and pools.

The lower arm is slack as it leaves Chartham caused by a lower weir owned by Chatham Paper Mill. The mill manager felt that the mill had no need for this weir and was happy to see it removed.

The left bank has suffered from erosion potentially affecting the Great Stour Way shared use path. However, the Kentish Stour Countryside Partnership has completed a section of soft revetments, which have become well vegetated in places with a variety of marginal plants. Overhanging tree branches are preventing marginal plant growth along some sections of this feature and can be removed. The owner of the adjacent land has no objection to removal of overhanging branches.

The channel below Chartham is generally in good condition and both reports by Nigel Holmes and the Wild Trout Trust indicated that there is a good variety of pools, riffles and glides over a coarse gravel bed. Nigel Holmes felt that vitality could be injected into the system at this location through the manipulation of the gravel bed to create shallow berms pools and riffles. Scour and variation in water speed could also be created in several locations through felling woody debris and securing in the channel. (Installation method- figure 5)

Above Horton Manor the Horton Brook enters, falling over a series of weirs which have been used to create an artificial lake. The brook is a possible route for fish passage past Chartham Paper Mill (see section 6.0) and removal of these weirs would be very beneficial but alternately creating fish and elver passage is desirable.



**Slack water at weir  
downstream of Chartham  
Paper Mill**



**Weirs between Horton Brook  
and Stour**

**erosion barrier at Chartham**

## **7.2 In-channel Recommendations Chartham Paper Mill to Horton Manor (figure 9)**

- Investigate removal of concrete revetments on upper channel or create soft revetments using hazel faggots, untreated wooden stakes and a back-fill of soil to allow marginal plants to flourish (figure 6)
- Remove weir from lower channel
- Cut back overhanging branches alongside lower channel to allow light to reach newly created marginal shelf
- Fell hawthorn on left bank into the river and pin to channel to create fast water and scour.
- Create shallow berms, pools and riffles through gravel installation and dig and dump techniques at locations shown
- Above the footbridge to Horton Manor there is a further opportunity to create berms, pools and riffles through gravel installation, dig and dump techniques.
- Investigate the potential for providing fish passage through Horton Brook.

## **7.3 Surrounding Land Character**

A number of flooded gravel workings border the river to the north. These appear to have natural banks with wooded island and areas of reedbed and are managed as coarse fisheries. These lakes are providing nesting and feeding opportunities to a variety of water fowl and wetland birds.

## 7.4 Surrounding land use Recommendations (figure 9)

- Create further areas of reedbed within the lake to create habitat for reed nesting birds and breeding sites for fish fry

## 8.0 Horton Manor to Milton Manor Roundabout

### 8.1 River Character

Downstream of Horton Manor an Environment Agency flow gauging weir is creating slack water upstream. The weir itself is small and presents only a minimal obstacle to fish passage. Downstream of the weir in-channel habitat quality continues to be good. Nigel Holmes felt that this represented a fine stretch of river with a good gradient and bed dominated by pebbles and coarse gravels. There are excellent riffle areas and several natural berms appearing at the channel margins. Both Nigel Holmes and the Wild Trout Trust felt that the river bed was overly uniform throughout this section but that this stretch of river had great potential if the planform could be manipulated either by creation of berms and pools or through the installation of woody debris. There are several locations downstream of the weir where this work could take place.

Brett Aggregates are in agreement with in-channel works taking place but would prefer these did not take place opposite their offices at Milton Manor Farm.



**Environment Agency flow gauging weir**

### 8.1 In-Channel Recommendations Horton Manor to Milton Manor Roundabout (figure 10)

- Create pool beneath overhanging willow on right bank before sewage works. Use gravel from pool to create riffle on tail downstream.
- Fell two hawthorns on banks upstream of overground pipe. Secure Hawthorns into river bed to create pinch point, allowing fast water to be pushed into a pool created beneath overhanging tree upstream of pipe. The thorny mass of the hawthorns will provide shelter for fish fry and create a opportunities for a diverse fly life to emerge.

- Further downstream, a bankside sycamore could be felled into the channel and secured and a pool created beneath an overhanging oak on the right bank.
- Further downstream a footbridge crosses the channel, immediately upstream of this point a natural berm has begun to form on the left bank, this could be extended out into the channel and a corresponding berm built on the opposite bank to push water into a pool created under the overhanging tree immediately upstream of the bridge.
- Downstream a large tree is overhanging the channel and creating a natural scour point. This tree should not be removed and should be fixed into the bank if necessary as it is creating excellent fast water and scour.



**Fallen tree would need to be secured in the channel**

### **8.2 Surrounding Land Character**

A large flooded gravel pit occurs on the left bank, which has an existing reedbed of value to breeding birds and fish fry. The land to the left is rough grazing and naturally wet. These fields have great potential to be used as occasional flood storage and re-connected to the floodplain through the creation of scrapes and off-line ponds to benefit wetland wildlife.

However Brett Aggregates do not wish to see this work take place feeling that the land is essentially farmland and this work would be out of keeping with their current management.



**Potential for scrapes on field along river**

### **8.3 Surrounding Land Recommendations (figure 10)**

- None due to objections of landowner

## 9.0 Milton Manor Roundabout to Tonford Bridge.

### 9.1 River Character

Downstream of the Milton Manor Roundabout the channel is wide and flat but in places is beginning to re-naturalise with in channel islands and bars appearing. Nigel Holmes noted that the river is attempting to recover from past over-widening at this location with areas of erosion creating natural gravel cliffs and material depositing



into berms on the opposite bank. In places the erosion is beginning to creep close to the Great Stour Way shared use path and it may become necessary to install some soft revetments of hazel faggots to protect the bank.

**In-channel islands beginning to appear**



**Natural erosion could, in time, interfere with Great Stour Way shared use path**

The Kentish Stour Countryside Partnership has installed a kingfisher resting post in the channel. This feature is creating fast moving water but also causing erosion on the bank. A 7m strip of faggoting and back fill could be installed here to protect the bank.



**Kingfisher resting post creating erosion**

Further downstream pools could be created to take advantage of areas of naturally fast water created by in-channel islands with gravel use to create shallow runs downstream. In other locations berms could be built to compliment existing natural berms and create fast water.

Before Tonford Bridge the right bank becomes dominated by urban gardens. The majority of these gardens have hard revetments made of wood or concrete to protect gardens from erosion. These create a long stretch of river bank with no natural vegetation and are unsightly. Soft revetments could be created in-channel from hazel



faggots and untreated stakes and backfilled with soil before planting with colourful wetland plants. (figure 6)

Much consultation with house owners would need to be done before this work could take place but there is potential for 265m of bankside improvements in this area. The resulting narrowing of the channel could compliment an existing berm on the bank opposite the housing. This berm could be widened to create an area of fast water and a pool created downstream to providing lying up areas for trout.

The left

bank would also benefit from additional tree planting to create areas of shade for fish and other wetland wildlife.



**Hard revetments close to Tonford Bridge**



**Natural Berm – A complimentary berm on the opposite bank would create a pinch point of fast water.**

## **9.2 In-channel Recommendations Milton Manor Roundabout to Tonford Bridge (figure 11)**

- Protect 7m of bank close to kingfisher post with soft revetments.
- Create a pool downstream of kingfisher post to take advantage of fast water in this location and the gravel used to create a shallow run downstream.
- Create pool downstream of in-channel islands to take advantage of the naturally fast water.
- Consider the necessity of protecting bank near Great Stour Way from erosion with soft revetments.
- Create berm upstream of electricity pylon to complement an existing natural berm on the opposite bank and push water into a pool created downstream.
- Discuss soft revetments with riverside properties install where appropriate. (Potential for approximately 265m of soft revetments)

- Create berm opposite housing to compliment natural berm on left bank and create area of fast water. Create pool downstream of this feature with gravel used to create riffle.
- Undertake tree planting at intervals along the river to provide shade for trout and other fish species.

### 9.3 Surrounding Land Character

The left bank contains large flooded gravel pits used for coarse fishing surrounded by rough grazing fields which are naturally wet in winter. Pockets of reedbed could be created around the lake margins to provide habitat for a range of wetland birds and nursery grounds for fish fry. Mid-Kent Fisheries, who manage the lakes, are in favour of this work and happy to contribute in-kind through voluntary assistance. Additional scrapes could also be created to take advantage of the naturally wet conditions.



**Naturally wet fields at Tonford Bridge**

### 9.4 Surrounding land recommendations (figure 11)

- Create scrapes in surrounding fields to create habitat for wetland birds (need to agree with landowner and mid-Kent fisheries)
- Create areas of reedbed around lake edges to provide breeding sites for wetland birds and nursery areas for fish fry.

## 10.00 Tonford Bridge to A2

### 10.1 River Character

Downstream from Tonford Bridge the channel continues to be of good quality with a coarse gravel bed and areas of riffles and pools. Work was undertaken in the autumn of 2012 by the Kentish Stour Countryside Partnership to create new berms and pools using existing gravel in the river. This work could be further enhanced by the installation of new gravel berms to pinch the channel and push water into the newly created pools providing a scour effect. The right bank of the channel is again dominated by urban gardens with hard revetments and provides ample opportunity to enhance the marginal vegetation habitat through the creation of soft revetments following discussions with homeowners.

## **10.2 In-Channel Recommendations Tonford Bridge to A2**

- Create two new gravel berms upstream of newly created pool to pinch channel and create greater water speed and scour in pool.
- Discuss soft revetments with riverside properties install where appropriate. (Potential for approximately 273m of soft revetments)

## **10.3 Surrounding Land Character**

Downstream from Tonford Bridge the left bank is managed as wet grazing marsh. Scrapes and ditches create in this area by Kent Enterprise Trust are already providing good habitat for a range of wildlife.

## **11.0 Conclusion**

The River Stour between Shalmsford Street and the A2 exhibits many traditional chalk stream characteristics with areas of fast flowing water over a coarse gravel bed, abundant water crowfoot and a range of geomorphological habitat types such as pools, riffles, fast runs, areas of slack water, natural berms and gravel cliffs.

The river has been overly widened in the past and contains several major structures, which are causing stretches to be slack and ponded. However, in other places the river is attempting to re-naturalise and in-channel islands and gravel bars are becoming evident.

Previous reports by Nigel Holmes and the Wild Trout Trust highlighted the opportunities to create a superb stretch of chalk river for the benefit of trout and coarse fish and to improve the habitat for a range of wetland wildlife.

Stakeholders including, landowners, tenants and fishing interests are in favour of in-channel improvements such as woody debris installation and the creation of a more varied river channel through the installation of gravel to create berms and riffles and the creation of pools. These measures would be easy to achieve.

There are several options for improving the river for fish passage around Chartham Paper Mill and these should be investigated further. Removal of the large structures upstream and within the mill would require major funding but improvement to the river channel could be achieved through work to remove downstream weirs and create soft revetments.

The surrounding land has great potential to be improved to create flood storage and provide a range of habitats of benefit to wetland wildlife through the creation of scrapes and off-line ponds and through investigation into the potential to create and enhance areas of wet woodland.

The majority of recommendations in this report are easily achieved and have the agreement of stakeholders. They offer the opportunity to make major enhancements to a long stretch of the river and would achieve a river of greater quality for fish and other aquatic species.

## 12.00 Table of Actions and Costings

Action	Timing of works	Body	Estimated Cost	Priority
Install cobbles in channel close to Shalmsford Street	Anytime other than between Oct-Feb	KSCP	£500- £1000 including labour cost	low
Create riverside resident information leaflet	Anytime	KSCP	£1500	medium
Advice sessions for riverside owners	Anytime	KSCP	£100 per session	Low
Scrape creation along river	Anytime dependent on species present	KSCP	£3000-£5000	High
On-line pond creation	Anytime	KSCP	£1000-£3000	Medium
Investigate opportunities for wet woodland creation along this section of Stour and report	Anytime	KSCP	£1000	Low
Manipulate planform of Pickleden Stream/Shalmsford Street Dyke	Anytime other than between Oct-Feb	KSCP	£600 - £1000	Medium
Install woody debris in Pickleden Stream/Shalmsford Street Dyke	Anytime other than between Oct-Feb	KSCP	£300 - £500	medium
Remove obstruction to channel at Pickleden Stream/Shalmsford Street Dyke	Anytime	IDB	£100-£1000	High
Treat Japanese Knotweed on Pickleden Stream/Shalmsford Street Dyke	Early summer and August to October	IDB with contractor	£300 - £500 per visit	High
Remove Branched bur-reed from Pickleden Stream/Shalmsford Street Dyke	Sept - Nov	KSCP or contractor	£300 - £500	medium
Undertake a long section assessment	Anytime	EA		low
Fell and secure woody debris in River Stour	Sept – Oct Feb - April	KSCP	£1000 - £3000	High
Create Pools and Riffles in Stour	Anytime other than between Oct - Feb	KSCP	£2000 - £10,000	High

<b>Action</b>	<b>Timing of works</b>	<b>Body</b>	<b>Estimated Cost</b>	<b>Priority</b>
Install soft revetments along riverside properties	Summer	KSCP or contractor	£1000 - £10,000 Subject to length, materials and labour cost	High
Investigate possibility of blocking land drains and action where appropriate	Anytime	KSCP	£100 - £3000	medium
Investigate opportunity for diverting water from Channel alongside A28 into woodland	Anytime	KSCP	£100 - £50,000	medium
Investigate potential for fish passage through Horton Brook	Anytime	KSCP or consultant	£1000 - £10,000 Subject to consultant costs	High
Investigate removal of large weir at Chartham Paper Mill	Anytime	KSCP with consultant	£1000- £10,000 Subject to consultant costs	High
Investigate removal of concrete revetments below Chartham Paper Mill and action where appropriate	Anytime	KSCP	£3000 - £50,000	low
Create soft revetments inside concrete revetments below Chartham Paper Mill	Summer	KSCP and Contractor	£1000 - £10,000 Subject to length, materials and labour cost	medium
Remove weir from lower channel below Chartham Paper Mill	Anytime other than between Oct - Feb	KSCP and Contractor	£1000 - £50,000 subject to survey results	medium
Cut back overhanging branches along channel below Chartham Paper Mill	Sept - April	KSCP and Tree Surgeon	£500	high
Create berms to act as pinch point along Stour including installation of gravel	Anytime other than between Oct - Feb	KSCP	£5,000 - £20,000	high
Create areas of reedbed	Anytime	KSCP & Mid	£2000 -	medium

within surrounding fishing lakes		Kent Fisheries	£10,000	
Protect banks from erosion	Summer	KSCP	£1000	medium
Undertake tree planting along the river	Autumn/Winter	KSCP	£300-£500	medium

# River Great Stour Restoration Plan Canterbury

## From Rheims Way to Fordwich Bridge



Down river from Deans Mill - May 2014



Conserving, enhancing and promoting the countryside  
and urban green space of the Stour Valley



# River Great Stour Restoration Plan Canterbury

## From Rheims Way to Fordwich Bridge

January 2015

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## Maps, Photographs and Illustrations

FIGURES	DESCRIPTION	PAGE
1	Map of River from Rheims Way to Fordwich	6
2	Map of Flood Zone 3	7
3	Map of Reaches	9
4	Map of Reach 1 – Westgate Gardens	10
5	Westgate Gardens - in channel work	10
6	Westgate Gardens - emergent vegetation improvements	10
7	Westgate Gardens – emergent habitat /faggot and stakes	10
8	Westgate Gardens – Illustration for ‘window boxes’	10
9	Map of Reach 2 - North Lane	11
10	North Lane – view of river stretch	11
11	North Lane –slack water point	11
12	Example of engineered bank with emergent vegetation	11
13	Map of Reach 3 – Deans Mill and Millers Field	12
14	Deans Mill and Millers Field – Causeway Relief Channel	12
15	Deans Mill and Millers Field –river	12
16	Deans Mill and Millers Field –Deans Mill and island	12
17	Deans Mill and Millers Field –sand bar	12
18	Map of Reach 3 – Tannery Development	13
19	Tannery Development – river and development and path	13
20	Tannery Development - river and development from Rheims	13
21	Map of Reach 5 – Greyfriars	14
22	Greyfriars – view of stretch	14
23	Greyfriars – view of Biniwithe Island upper channel	14
24	Map of Reach 6 – St Peter’s – Abbot’s Mill	15
25	St Peter’s – Abbot’s Mill – Fish Pass at Abbot’s Mill	15
26	St Peter’s – Abbot’s Mill – Solley’s Orchard+ River view	15
27	St Peter’s – Abbot’s Mill - Solley’s Orchard+ River view	15
28	Map of Reach 7 – Bus Company Island (St Radigund’s)	16
29	Bus Co Island (St Radigund’s) –river, bank and car park	16
30	Bus Co Island (St Radigund’s) – side channel confluence	16
31	Bus Co Island (St Radigund’s) –St Radigund’s stretch	16
32	Bus Co Island (St Radigund’s) –St Radigund’s stretch	16
33	Reach 8 – Map of Sainsbury’s and St John’s	17
34	Sainsbury’s and St John’s –beside St John’s Primary	17
35	Sainsbury’s and St John’s –trees to be removed/pruned	17
36	Sainsbury’s and St John’s – riffle where EA work carried out	17
37	Sainsbury’s and St John’s– upstream of bridge	17
38	Sainsbury’s and St John’s – downstream of bridge	17
39	Sainsbury’s and St John’s – looking downstream to footbridge	18
40	Reach 9 – Map of Kingsmead	19
41	Kingsmead –river downstream	19
42	Kingsmead –river downstream and seating area	19
43	Kingsmead - river and Kingsmead Field	19
44	Kingsmead –river +gardens from Kingsmead Bridge	19
45	Kingsmead – Broadoaks allotments and river channel	20
46	Kingsmead - End of side channel at Barton Mill	20
47	Barton Mill	21
48	Reach 10 - Map of Barton Mill	21
49	Barton Mill - Japanese Knotweed downstream	21

50	Barton Mill – downstream view with marked areas for stake and faggot structures	21
51	Reach 11 - Map of Vauxhall	22
52	Vauxhall - Water crowfoot in river by Vauxhall Bridge	22
53	Vauxhall – EA photograph Nigel Holmes and works on river	22
54	Reach 12 – Map of Fordwich	23
55	Fordwich – channel north of A28	23
56	Fordwich – Looking downstream to Fordwich	23

## CONTENTS

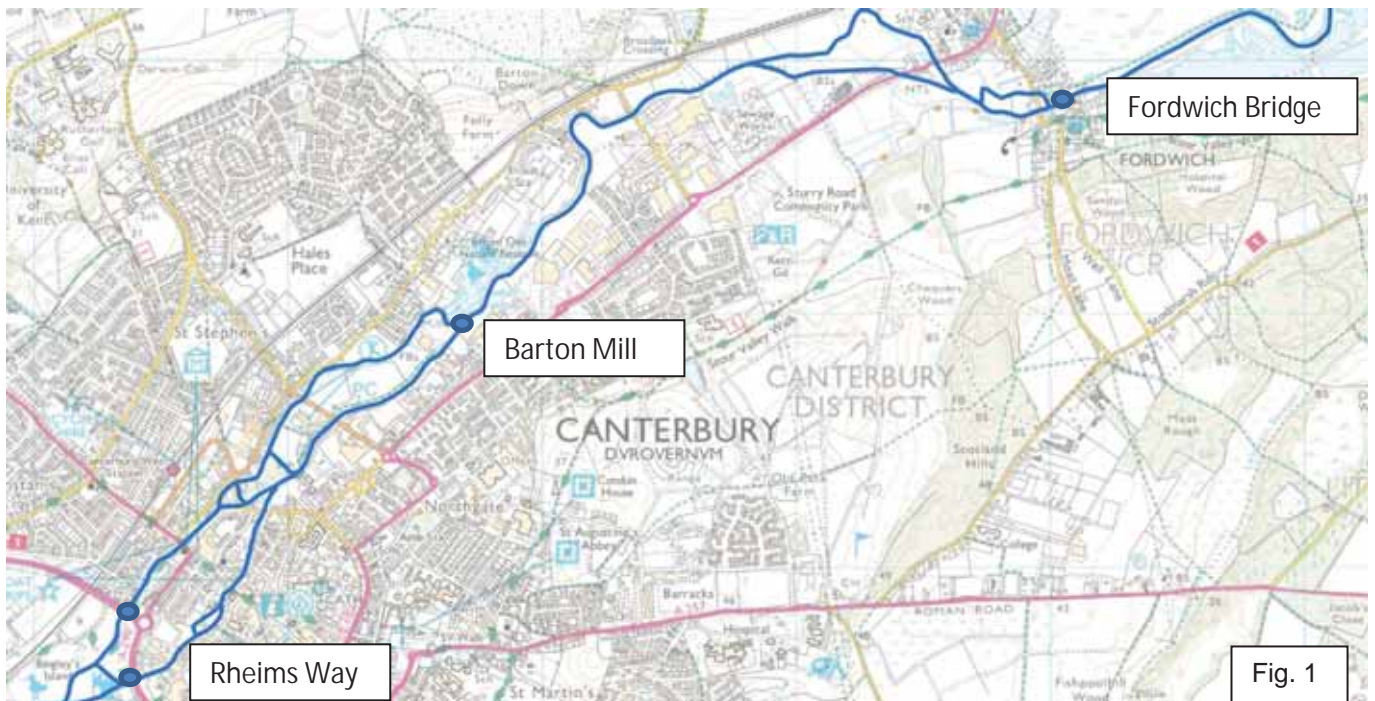
	Page
1.0 Introduction	6
2.0 Catchment Overview	6
2.1 Canterbury – Fordwich Overview	7
2.2 Ecology Overview	8
2.3 Constraints	8
3.0 Rheims Way to Fordwich – Map of Reaches and Index	9
Reach 1 – Westgate Gardens:	10
Overview and Proposed Enhancements	10
Reach 2 – North Lane:	11
Overview and Proposed Enhancements	11
Reach 3 – Deans Mill and Miller’s Field	12
Overview	12
Overview and Proposed Enhancements	13
Reach 4 – Tannery Development	13
Overview	13
Proposed Enhancements	14
Reach 5 – Greyfriars	14
Overview and Proposed Enhancements	14
Reach 6 – St Peter’s – Abbot’s Mill	15
Overview and Proposed Enhancements	15
Reach 7 – Bus Company Island (St Radigund’s)	16
Overview and Proposed Enhancements	16
Reach 8 – Sainsbury’s and St John’s	17
Overview	17
Overview and Proposed Enhancements	18
Reach 9 - Kingsmead	19
Overview	19
Overview and Proposed Enhancements	20
Reach 10 – Barton Mill	21
Overview and Proposed Enhancements	21
Reach 11 – Vauxhall	22
Overview and Proposed Enhancements	22
Reach 12 – Fordwich	23
Overview and Proposed Enhancements	23
Appendix 1: SUMMARY OF WORKS – Maps	24 - 29
Appendix 2: SUMMARY OF WORKS - Priorities and Costs Table	30 - 34
Appendix3: References	35

## 1.0 Introduction

The Kentish Stour Countryside Partnership has undertaken a survey of the River Great Stour in and around Canterbury from Rheims Way to Fordwich Bridge in order to identify potential river restoration projects that would enhance the biodiversity and hydro morphology of this stretch of the river corridor. Proposed enhancements are outlined and technical specifications will be provided where proposals are taken forward.

The report was funded by Canterbury City Council and identifies potential improvements within this 4.8 kilometres / 3 mile stretch of the River Great Stour. (Fig. 1)

The report follows a series of walkover surveys in May, September and November of 2014, when river levels varied from low to high. Plus consultation with the Environment Agency (Flood risk, Fisheries and Biodiversity and Catchment officers), Canterbury City Council (Engineering and Countryside officers) and The Wild Trout Trust. This report was also informed by previous studies which are listed in References at the end of this document; especially those of the late Dr Nigel Holmes compiled in 2008 and 2009.



## 2.0 Catchment Overview

The River Great Stour is the longest chalk river in Kent, rising from chalk springs near Lenham and flowing in to the Channel at Pegwell Bay. It flows through rural areas, villages and the built up areas of Ashford and Canterbury.

Chalk Rivers are a special, unique habitat mainly restricted to southern and eastern England and they have their own UK National Biodiversity Action Plan. The characteristics of a chalk river are crystal clear water, lots of riverbed gravels, good assemblages of plants, relatively shallow depths of less than 1.5m, and relatively stable flows and temperature.

The Great Stour exhibits many of the traditional chalk stream characteristics with shallow fast flowing water over gravel and abundant River Water Crowfoot (*Ranunculus sp.*), an indicator of good water quality in chalk rivers. There have been many man made changes over the centuries, including realignment, maintenance of vegetation, gravel extraction in the floodplain and infilling with inert material. Some of these areas have however been

brought back in to good ecological management, such as Whitehall Meadows Local Nature Reserve and Hambrook Marshes upstream and on the outskirts of Canterbury.

The A2 to Stourmouth section of the River Great Stour is currently classed as moderate in the Water Framework Directive five grade system (Excellent, Good, Moderate, Poor + Bad). This is mainly due to phosphates but also issues of habitat quality. Flows have been very low in recent years, such as 2012, causing obvious problems for some river wildlife and extenuating issues of water quality.

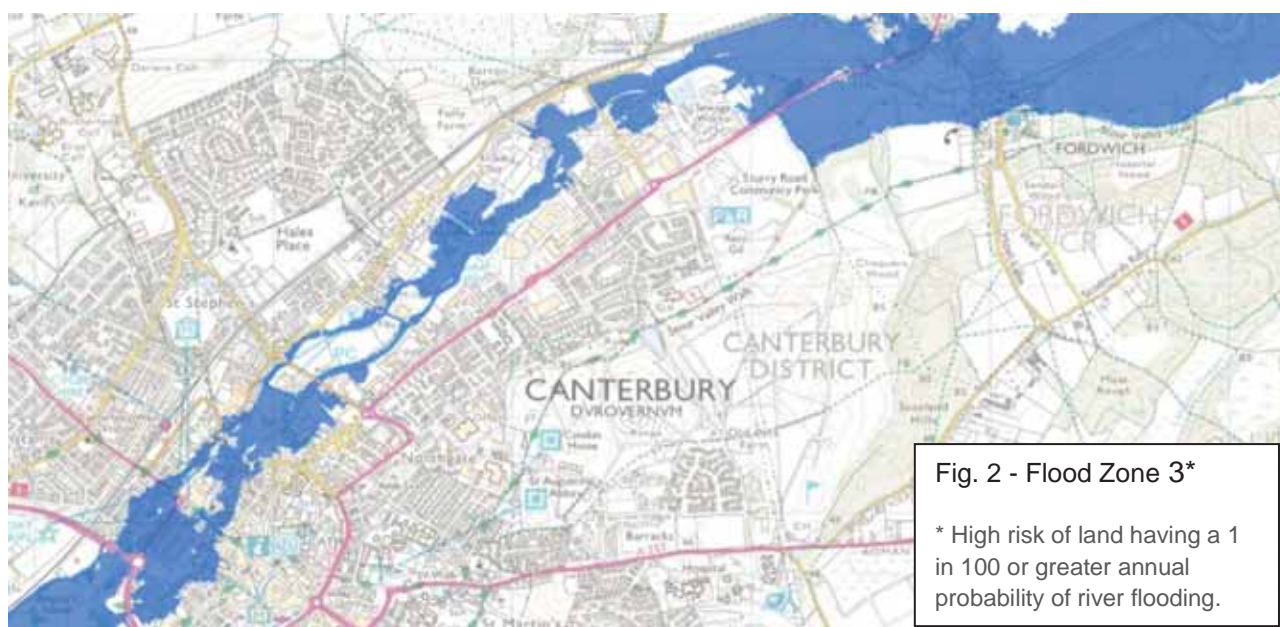
There are two sewage treatment plants on the river; Ashford Sewage Treatment Works which had phosphate stripping introduced in 1998 and Canterbury Sewage Treatment Works, which had it installed in 2014. The results will not be instantaneous, but over time it is hoped that phosphates levels on the river as a whole should be significantly reduced.

## 2.1 Canterbury to Fordwich Overview

This stretch of the Great Stour has an underlying geology of superficial deposits of clay, silt, sand and gravel over chalk. In Canterbury City Centre the beds of the river channels contain substantial amounts of brick and other larger aggregate materials remaining from walls, buildings and other structures. Areas with armoured beds have become compacted and its arguable some of these 'aggregates' should be moved/removed to reveal the gravels. This essentially manual process would be a large task and costly and has not therefore been proposed. However, this would take place where gravel redistribution has been proposed to create low flow channels etc. The water generally runs clear through most stretches outside of high water flow periods when silt is being churned up and moved downstream.

The river subdivides at Bingley Island, upstream of Westgate and remains divided, although linked via several connecting channels, until it re-joins upstream of Vauxhall Lakes Nature Reserve. (Fig. 1) About a third of the upstream section goes through the centre of Canterbury where it is heavily modified with canalised sections and a number of impounding structures. The river becomes increasingly more naturalised as one travels downstream.

The division of the river and impounding structures have impeded the natural valley gradient available and consequently the flow rate and water depths within many channels. During dry spells, low water levels and flow rates have badly affected some channels and wildlife. Conversely in wet periods, with little flood storage in the town centre, it is an area at high risk of flood. (Fig. 2)



## 2.2 Ecology Overview

There is fish passage for **wild trout** and other species which are known to travel upstream. **Eels** are also present in the river and are likely to be in the smaller channels and wet areas too. Fish passes have been installed at Pound Lane, Deans Mill and Barton Mill (Reaches 3, 6 and 7) and some changes are proposed to improve and encourage passage through these sections, as well as further river enhancements and management work.

**Water voles** are present below Kingsmead Bridge, but none have been recorded in Canterbury upstream of this point for many years. However, management should still take account of this important species which could inhabit nearby watercourses.

**Otters** have been recorded along this section of the river in the past; possibly the last reliable sighting was in 2003, just upstream of Canterbury.

Dating from 2001 seven species of bat has been recorded using the river corridor. The key bat species are **common and soprano pipistrelle, and daubentons**. All British bats and their roosts are protected under Schedule 5 of the 1981 Wildlife and Countryside Act. They are also protected under Schedule 2 of the Habitats Regulations, 1994. This makes it illegal to kill, injure, capture or disturb bats or obstruct access to, damage or destroy bat roosts. Under the law, a roost is any structure or place used for shelter or protection. Because bats tend to reuse the same roosts, the roost is protected whether the bats are present at the time or not.

A range of warblers and **reed bunting** breed along the quieter watercourses and hole nesting birds inhabit many of the older trees. **Kingfisher and grey wagtail** are regularly seen on sections of the river. **Grass snake and slow worm** are also present.

The larger trees, particularly native trees, offer significant habitat for invertebrates, nesting birds and possibly bats; standing dead wood and trees with holes offer particularly good habitat.

The river corridor as a whole supports a range of flora and fauna which can be supported and expanded with further enhancements.

## 2.3 Constraints

In terms of constraints, flood risk is the main controlling factor. All in-channel and some bank work proposed in this report will require flood risk assessment and consent.

As well as flood risk within the city centre, the Great Stour runs through, past and possible over many archaeologically significant sites. Therefore investigation and consent may be required from Canterbury Archaeological Trust and other relevant heritage authorities.

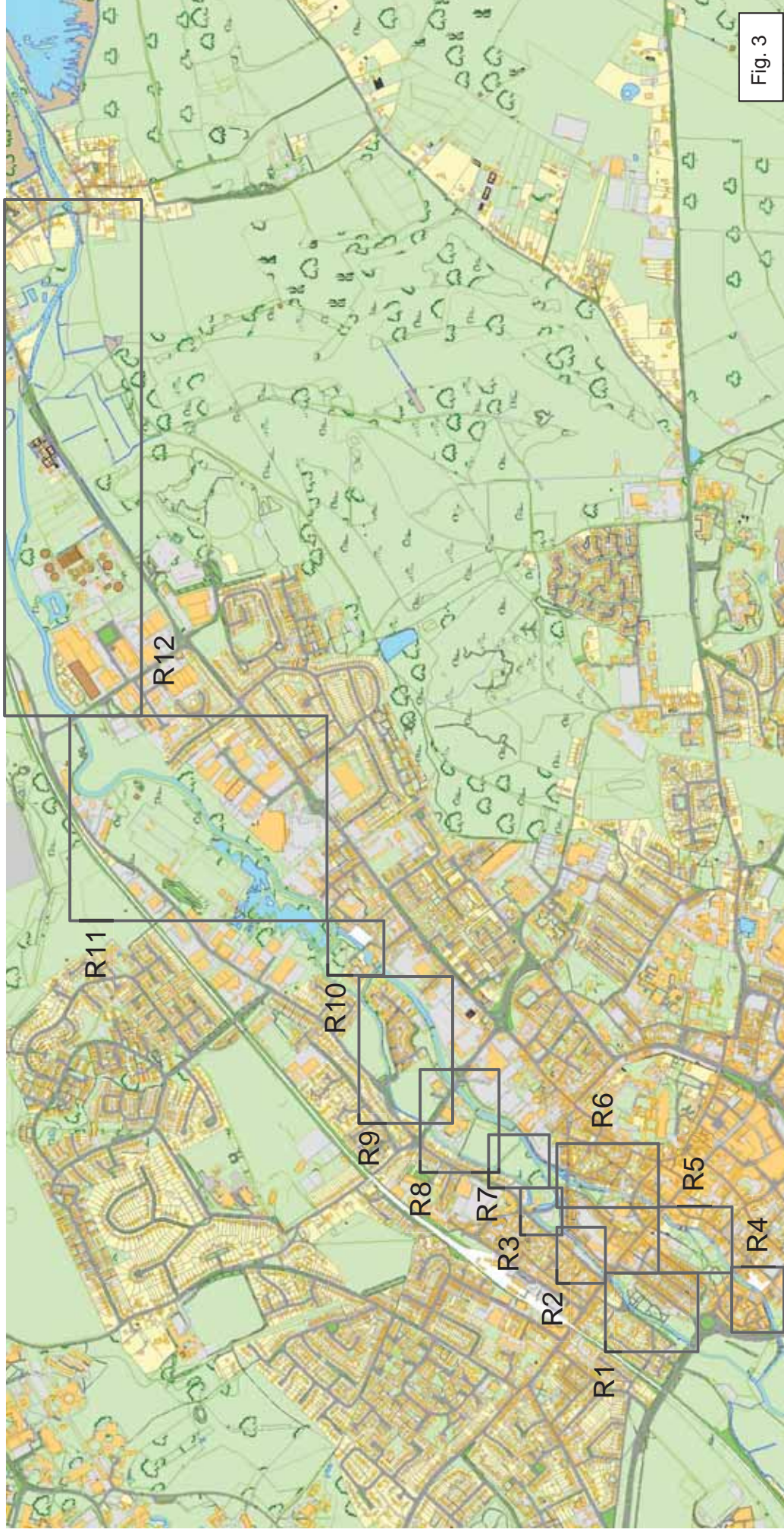
Access to the river is extremely limited in stretches that are bordered by residential and other buildings as well as roads and paths.

The river is highly visible in places and an important amenity and aesthetic element for a busy tourist destination and World Heritage Site.

All of these factors are taken into consideration in the following proposals and will be specified in detail once proposals are taken forward.

### 3.0 Rheims Way to Fordwich Bridge

For practical purposes the report findings and proposals are broken down into 12 reaches of the Great Stour R1 – R12 (Fig. 3).



R1 – Westgate Gardens	R4 – Tannery Development	R7 – Bus Company Island/St Radigund's	R10 – Barton Mill
R2 – North Lane	R5 – Greyfriars	R8 – Sainsbury's and St Johns	R11 – Vauxhall
R3 – Deans Mill and Millers Field	R6 – St Peters to Abbots Mill	R9 – Kingsmead	R12 – Fordwich

**Note:** Where a reach divides the term upper / lower channel is sometimes used to describe the stretch sitting north / south of the divide. Right and left banks are determined by facing the direction of flow downstream.

## Reach 1 Westgate Gardens



Fig. 4



Fig. 5

Surrounded by the formal gardens and historic architecture of Westgate Gardens, hard engineering dominates this uniform and straight stretch of the river.

From 2009 to 2013 EA and KSCP have carried out work to improve habitat and hydromorphic conditions.



Fig. 6

2009 - Sections of bank were enhanced by works that created a strip of marginal vegetation which provides habitat for a range of species (Fig. 6).

2009 + 2012 - Low flow channels and pools were created within the river (Fig. 5).

2012-13 – Pockets of emergent vegetation were created on sections of engineered bank using stakes, faggots and planted hessian sacks, all were secured and protected with netting. (Fig.7)

The remaining banks and river would benefit from further enhancements, but due to the formal nature of the site and flood risk there is limited scope.

### Proposed enhancement/s (Appendix 1+2)

Trial 'window box' habitat on a hit and miss basis, on alternate banks along a 120 m stretch. Boards to be attached to existing timber facing (Fig. 7), backfilled with soil contained in a permeable and durable material which is secured and planted. (Fig.8)



Fig. 7

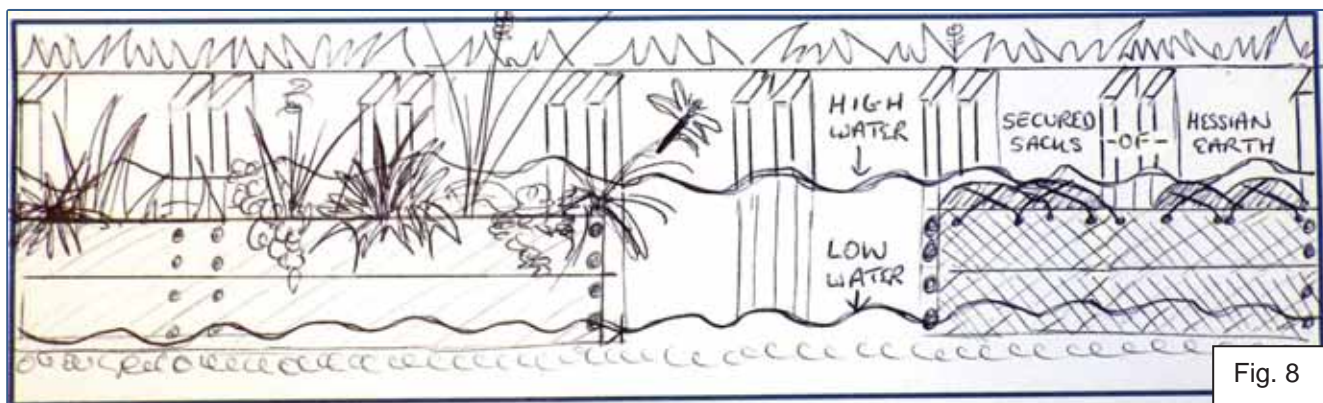


Fig. 8



**Reach 2 North Lane**



This reach is straight and heavily engineered. Located at the centre of Canterbury, there are properties abutting the river, with the busy North Lane Car Park and path beside the left bank. (Fig. 10)

On this reach the river has a flat, even bed with brick remnants and other aggregates visible in the upper layer, remaining from recent and/or historic construction works. It is highly likely that this is an ‘armoured’ bed. There is no diversity of water depth or flow, some submerged but no emergent or riparian vegetation. There is little cover for wildlife, outside of that provided by the mature trees and occasional determined buddleia.

Proposed enhancement/s (Appendix 1+2)

- a) Long term major project - to remove one or two 20-30m sections of the existing left bank brick wall and install engineered terracing that would provide a multi-stage channel (low and high water levels) and green space for emergent vegetation. This would exclude areas around mature trees and their roots. It would create a much more attractive river edge, cover and passage for migrating wildlife at low and high flow periods, and habitat for a range of species see example Fig. 12. —————
- b) In channel work to create deeper pool/s or low water channel and edge habitat to support wildlife during dry periods. Viability of proposal is reliant on structure of the river bed, archaeology and utilities. Costs and practicality may well outweigh the benefits. Length approx. 70m. (Fig 9) - . - . - .
- c) To install pockets of natural habitat by installing stake and faggot structures at the slack water point avoiding drainage inlets. (Fig.9B, 11)



**Reach 3 Deans Mill and Miller's Field**

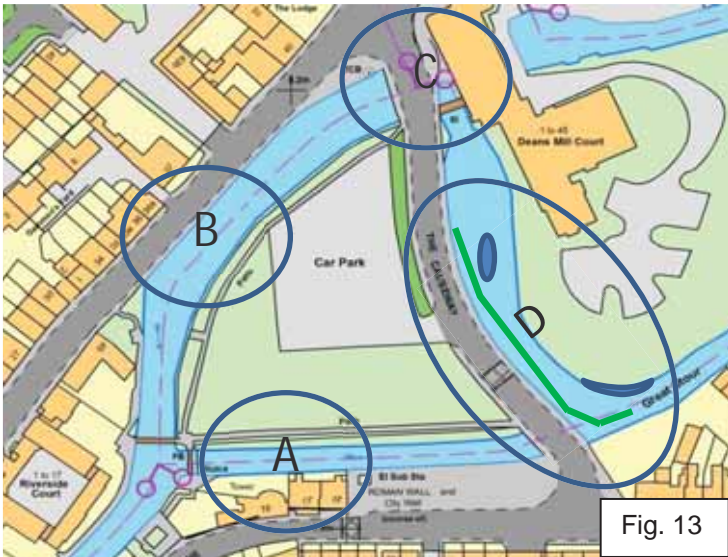


Fig. 13



Fig. 14

This section of the river is heavily engineered and contains 3 impounding structures. Travelling downstream the first is the sluice gate of the Causeway Relief Channel (Fig. 13A and 14), which was built to reduce water levels at The Causeway bridge and Deans Mill. It creates an Island at the centre of which is Millers Field Car Park. At Deans Mill, the second impounding structure is a sluice gate, which we understand is rarely if ever closed, that splits the river again to create a smaller channel running under the mill, in which there is a fish pass. It continues around the top of Bus Company Island. Lastly is the mill weir, which has a substantial drop. (Fig. 13C) Downstream can suffer very low water levels during dry periods

The Relief Channel sluice gate is opened in high flow conditions therefore it is frequently dry. Consequently, improvements considered to alter the concrete base and create a more natural channel, with benefits for invertebrates and macrophytes, were dismissed.

Above the main weir banks are walled and the channel is uniform in width and depth, the bed is mostly flat with a gravelly substrate containing a lot of bricks and other building remnants. (Fig. 13B and 15)



Fig. 15

There is in-channel vegetation with water crowfoot and water lily but no emergent vegetation.



Fig. 16

Downstream of Deans Mill are two notable sand based fluvial deposits. The first is a vegetated mid channel sand bar island, which is highly visible to the public and a rare sight in the Great Stour. It is of high value for wildlife in the city centre, as it provides a nesting site amongst emergent vegetation. (Fig. 13D, 16)

The second, a sandy point bar, is situated on the inside of a bend at the confluence of the main river and relief channel. The water travels fastest along the outside of the bend and deposits are dropped on the slower inside edge. The sand bar remains largely bare of vegetation, partly due to shading from trees. (Fig.13D, 17) Slightly downstream the river bed rises and riffles are visible at mid-low water levels. As a whole this stretch suffers from very

low water levels in dry spells. Consequently there is very little submerged and emergent vegetation.

#### Proposed enhancements (Appendix 1+2)

- a) Long term major project - Investigate potential for removal of weir and sluice gate. Due to significant costs this is unlikely to be considered. (Fig. 13C)
- b) Alternatively, investigate the possibilities of controlling the sluice gate to maintain reasonable water depths along the main channel. However this may have ecological implications for the smaller channel which will need to be considered. (Fig. 13C)
- c) Investigate improvements to fish pass under Dean Mill for elvers and other fish species.
- d) Long term - In channel work upstream of The Causeway to create a low flow channel or deeper pools, excavated material to be placed upstream to self-cleanse the pools and provide flow diversity. Access may be problematic. (Fig. 13B)
- e) Short-term - To create pockets of marginal habitat through the installation of 'window boxes' or stake and faggot structures with filled and planted hessian sacks. (Fig. 13B)
- f) Downstream of the weir, a low flow channel could be created along the right side of the river bed and redistributing the gravels to the inside edge of the island and adding to the sandy point bar. This should be self-sustaining, as velocity will increase in the deeper section and deposits continue to drop on the slower edge. (Fig. 13D)
- g) Pruning of selected trees should also bring light into the area and encourage vegetation to grow along this inside edge.



Fig. 17

#### **Reach 4 Tannery Development**



Fig. 18



Fig. 19

This is another engineered reach of the river. It is dominated by the new Tannery Development to the north beside which runs a footpath. (Fig.18, 19) The right bank is bordered by the grounds of St Mildred's church, residential gardens and other properties. The river is straight and has a uniform width, depth and flow. There is some submerged vegetation and patches of emergent and riparian vegetation on the left bank. (Fig. 20)

There is limited scope for improvements, as access would be difficult, other than from the river.



Fig.20

Proposed enhancements (Appendix 1+2)

If access were possible, creating some deeper pools or low flow channels would ensure that there will be water running through the area in drier conditions, plus a greater variety of habitat; excavations would create areas of marginal vegetation.

**Reach 5 Greyfriars**



Fig. 21



Fig. 22

Binniwithe Island (BI) lies at the centre of this reach, with a narrower channel going around the western edge. (Fig. 23) Whilst most of this section is in private ownership, the Franciscan Greyfriars Garden (FGG) and The Greyfriars Garden (GG) are open to the public. (Fig. 21)

The river channels are fairly shallow and run sluggishly through this reach. (Fig. 22) The beds are flat, with no depth or flow variety, there is a lot of brick visible which suggests a relatively armoured bed. There is some submerged vegetation, and small patches of emergent vegetation beside sections of the island banks, particularly on the southern half of the island. The rest are largely engineered. Binniwithe Island is privately owned and recently a lot of the dense scrub has been cleared from the centre, but at last visit in November 2014, scrub and trees continued to shade these natural banks, limiting edge habitat variation. (Fig. 23)

Proposed enhancements (Appendix 1+2)

- a) Relatively easy improvements can be made on the island's naturalised banks, by removing areas of scrub, opening up the channel edges to light for a greater amount and diversity of emergent and riparian vegetation to grow. As this is private property the cooperation of the owner is essential
- b) On the upper, smaller channel, flow rates and depths could be improved by creating a two stage channel, using the bed material to create margins for emergent vegetation. The thickness of the bed may be a constraint, as may the narrow channel for access, but worth consideration.



Fig. 23

## Reach 6 St Peter's – Abbot's Mill

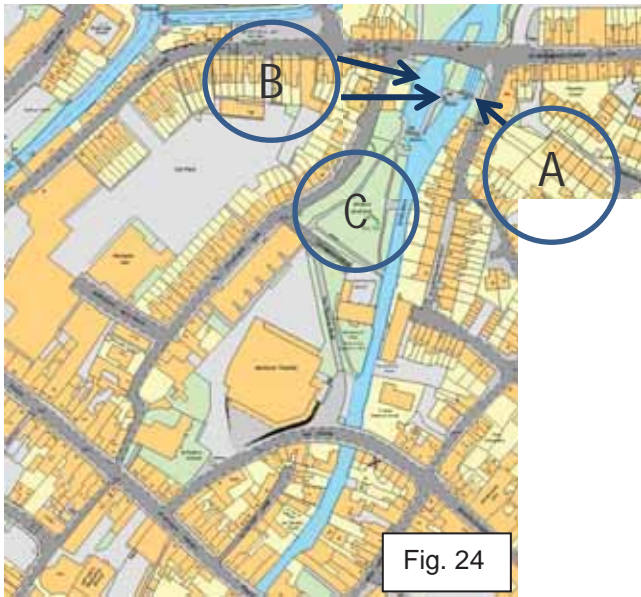


Fig. 24

This city centre reach of the river is heavily engineered with 3 impounding structures weirs/sluices, with a baffle fish pass beside one sluice. (Fig. 24A, 25)

The channel is uniformly straight, with steep man made banks and a flat river bed containing a lot of brick and possibly armoured. The owners of Abbots Mill have made a proposal to Canterbury City Council to install a green energy water wheel to replace the main sluice, which will include a new fish pass.

Upstream of point **A** the river is bordered by a number of green spaces; public parks

(including Solley's Orchard) on the left bank with footpaths and views of the river, while the right is dominated by residential gardens. (Fig. 24C, 26, 27) Both banks are manmade and steep. However from the gardens, plants and trees lean over, into and above the river, which adds an attractive natural feature, providing some cover for fish and other river species as well as habitat for birds and insects. The left bank is almost entirely devoid of vegetation. Further upstream, south of St Peters Street, the river is surrounded by residential and other buildings with no green buffer.

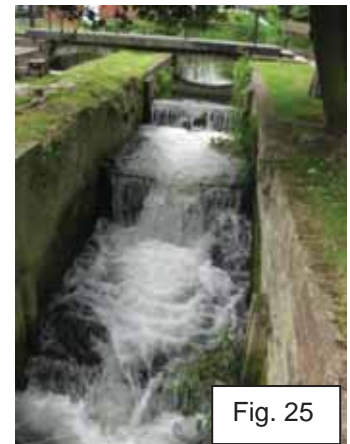


Fig. 25

### Proposed enhancements (See Fig. 24) (Appendix 1+2)

- Investigate making improvements to the fish ladder to assist passage of a greater range of fish such as elvers by adding more stages (shallower, staggered resting areas) to the ladder. (Fig. 25) Note. Proposal for water wheel and fish pass may make this proposal redundant.
- In a shallow area and slack water point 'stake and faggot structures' could be installed to create areas of emergent vegetation. (Fig. 24B)
- Solley's Orchard provides an opportunity for positive change in a large and public area, but it will be expensive. A section of the brick bank approx. 30 metres (or 2 x15m), could be moved back and engineered terracing installed to provide a multi-stage channel and green space for emergent vegetation (See Fig.12, Pge.11) The present crest height would be maintained. This would create habitat for a range of species, and an attractive natural river edge. It may also increase flood capacity.

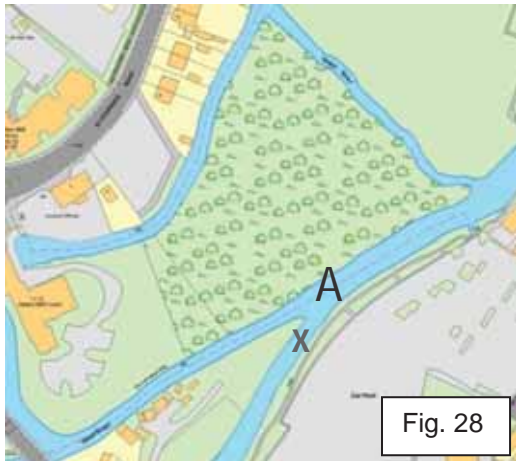


Fig. 26



Fig. 27

## Reach 7 Bus Company Island (St Radigund's)



These two channels of the Great Stour and the smaller cross channel surround and form Bus Company Island. It is a Local Nature Reserve, managed in part by KSCP, which has trees, a pond, areas of scrub and meadow - a vital range of habitats in the heart of the city. The banks on 3 sides of the island are wooded and natural (Fig 28). On the southern channel right bank, there is a narrow strip of reasonably good emergent vegetation, restricted by the proximity of the foot path beside St Radigund's Car Park. Sections of this bank are eroding (Fig. 29)

The northern channel has limited access, being abutted by private land on one side. See **Reach 8** for overview of the side channel.



At point **A** (Fig. 28), where two of the channels meet, the velocity increases and the river widens. With greater velocity there is more flow diversity along this stretch, with gravels, riffles and glides visible at low to medium water levels. It also supports a good amount of water crowfoot. Further downstream, at the confluence of the cross channel and main river arm, the river widens again.(Fig. 30) Spawning fish need to be encouraged to travel upstream via the most southerly channel, where fish passage is possible.

### Proposed enhancements (Appendix 1+2)

- Selective pruning of trees around the island to reduce over shading of the channels and encourage emergent vegetation.
- Installation of a pinch point (pinned woody debris) marked **X** on Fig. 28 to increase water velocity and persuade spawning fish to use the fish passable southern channel.
- Woody debris installation/s on the right bank at the widest point/s, will create more dynamic flow velocities especially at low water levels, and create depth variety (scoured pools) and an increase in emergent vegetation and habitat diversity. (Fig 31, 32).
- Installation of stakes, faggots and filled/planted hessian sacks to protect eroded parts of right bank.



**Reach 8 Sainsbury's and St John's**

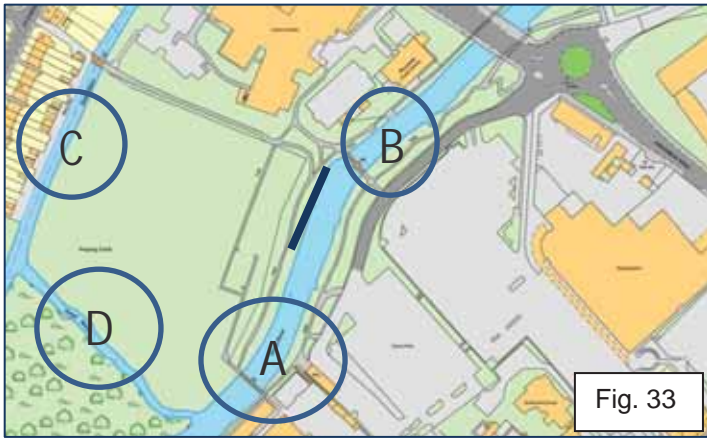


Fig. 33



Fig. 34

In this reach, the main river is wider and runs with an overall sluggish velocity; although there are riffles and glides on the lower stretch where in channel work was done by the EA. (Fig. 36) Water crowfoot is present on a gravel/pebble substrate. The banks are fairly naturalised, with some areas of erosion. A short stretch has a raised engineered bank next to a footbridge at the school entrance to St Johns Primary School. (Fig.33A, 34) The footpath narrows here, which is especially noticeable when parents gather at the start and end of the school day.



Fig. 35



Fig. 36

Further downstream, the right bank next to Sainsbury's car park is heavily used by the public. Consequently the bank and its vegetation have been eroded. Shading from trees is also contributing to this, amongst which is a patch of bamboo. (Fig. 33B, 36)

The left bank opposite is also eroded with no vegetation and exposed tree roots, mainly due to excessive damage by waterfowl who congregate as it's a popular spot for feeding ducks.

On the northern channel water levels appear to be substantially lower than the main channel, which was high on the day these photographs were taken - November 2014. (Fig. 33c) The channel is fairly wide, straight and has a sluggish velocity. Water crowfoot is present. Where a bridge crosses upstream of the Kingsmead car park, the piers have increased the speed of the water, creating scour, riffles and glides, as can be seen from photographs taken from both sides of the bridge. (Fig. 37, 38)



Fig. 37



Fig. 38

Hard revetments run almost the entire length of the left bank where private properties and access road abut the river. Where some natural bank remains it is eroding. The right bank is largely naturalised, although there is limited vegetation due to shading from trees beside St Kentish Stour Countryside Partnership

Johns School field (Fig. 37). There is water crowfoot present in this section. Access not an issue from right bank as its Canterbury City Council land.

The cross channel that runs between St John School's playing field and Bus Company Island (Fig 33D) is narrow and very shaded by trees from both banks. The school has been proactive in establishing a wildlife area beside the channel. KSCP have been involved in advising the school, but not in delivering the 'wildlife area' creation.

#### Proposed enhancements (Appendix 1+2)

- a) **Beside St Johns School** (Fig 33A, Fig 39) - Long term major work to remove raised engineered bank and replace with engineered terracing that would provide a wider footpath and multi-stage channel (low and high water levels) and green space for emergent and bankside vegetation. The existing footbridge would need to be incorporated into the design.
- b) Woody debris would introduce flow diversity, scouring for deeper pools and encourage increased areas of marginal vegetation.
- c) **Besides Sainsbury's car park** (Fig 33B) - Right bank - Stakes, faggots and planted hessian sacks would stabilise the bank and kick start marginal vegetation. Fencing may be needed (for the public and ducks) in the short term whilst the vegetation is establishing.
- d) Remove/prune selected trees to let the light in for the bank to re-vegetate. (Timber to be used for woody debris)
- e) Remove the bamboo
- f) Left bank – opportunities to create a wetland margin' approx. 2 metres deep and 60 metres long, using stakes and faggots with pre-seeded coir rolls along the front edge. Then in filling the ledge with earth in hessian sacks that will be planted. An alternative to faggots would be imported hard pebble / gravel type material to form a solid basis for the coir rolls. Fencing will be needed to keep the ducks off while the plants establish. Modelling is advised for this proposal. (Fig.33)
- g) **Northern Channel** (Fig 33C) - selective pollarding / pruning of white willow to let more light in to encourage emergent and bank vegetation.
- h) Woody debris / pinch points to vary flow and/or dig and dump intervention to create some deeper water sections (pools / channels) when water levels are low!
- i) **Cross channel** (Fig 33D) - selective pruning of trees to reduce shading and encourage vegetation.





## Reach 9 Kingsmead



Fig. 40



Fig. 41

The **main river** is a relatively naturalised but straight stretch leading up to the Mill which is a significant impounding structure. (Fig 40A) Consequently, this stretch of the river has a relatively sluggish velocity. There is good submerged vegetation and abundant emergent and riparian habitat on both banks, which is creating some flow diversity. (Fig.41)



Fig. 42

The right bank has very limited public access, whilst the left bank has a public foot path running its length, partly overlooked by a relatively recent residential development. As part of the development seating has been installed on the bank. The riparian vegetation is more managed on this bank, with a cutting regime that provides open viewing areas, whilst other sections have taller and denser vegetation. This management will continue to provide a good mosaic of plant species and related biodiversity if the cutting regime continues on rotation. (Fig. 42)

The narrow northern channel from **Kingsmead** Bridge to Stonebridge Road is a highly visible stretch, both from the road and from Kingsmead Field. (Fig. 40B, 44) The upstream left bank of the channel has hard revetments at the ends of residents' gardens and beside Broadoaks Road downstream. There is a short stretch of riparian vegetation opposite the houses. (Fig. 44)



Fig. 43



Fig. 44

Downstream of Stonebridge Road there is a small weir, and a small but nevertheless significant gradient, with meanders and gravels. The water levels are lower than in the main river and the bed is uniformly even; there is little emergent and limited riparian vegetation, but it runs clear and has abundant water crowfoot. (Fig. 40C)

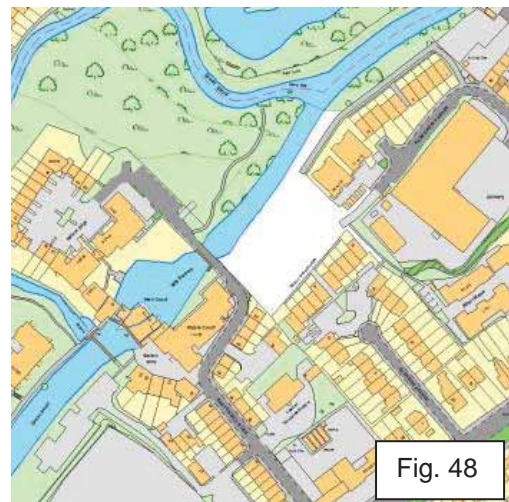
The **Broadoaks** Allotments border the left bank and a quiet footpath runs alongside and behind houses on the right bank. The proximity of allotments and compost heaps on the river banks is a concern, particularly for nutrient run off and for detritus entering the river system. (Fig.45) There is also numerous burrows in the bank upstream of the allotments, which are probably rat burrows. Further downstream, the channel becomes inaccessible as it continues behind other residences. At this point, the channel can overflow into a narrow shaded overflow ditch which runs down to Barton Mill, where it silts up and ponds. (Fig. 46)



#### Proposed enhancements (Appendix 1+2)

- a) **Main River** – Install woody debris to vary flow and create some deeper water pools.
- b) Beside **Kingsmead** Field, downstream of housing, redistribute bed material to create a sinuous two stage channel approx. 25 – 35 metres in length. Excavated material would be deposited upstream on the left bank margin to form shallow ledges for emergent vegetation, yet still convey water when the river is above medium flow. Flood storage/capacity should not be affected.
- c) Provide access from Stonebridge Road development to Kingsmead Field.
- d) **Broadoaks** - A partnership community project, with the relevant city council representative, to inform the allotment group of the issues of land use next to a river. The aim would be to educate and get allotment support for moving the compost heaps and other structures back from the river bank.
- e) Along the lower section of the channel, which ponds at Barton Mill, selective and limited pruning of shrubs and trees will open up this shaded area to increase emergent vegetation and a more varied wetland habitat.

## Reach10 Barton Mill



Barton Mill is a significant impounding structure on this reach of the river. As such there is very little potential for improvement whilst it remains. There is a fish pass within the structure and evidence shows that fish and mature eels are able to travel upstream. KSCP built otter steps in 2009. (Fig. 47, 48)

Just upstream of the mill, hard engineering dominates both banks, submerged vegetation is very limited, but there is an area of emergent vegetation in one silted corner. (Fig. 47)

Directly below the mill weirs, the right bank is engineered, whilst the left bank is laid to grass that slopes down to the river, where a mature willow lies practically horizontal in the river; providing a still water area that traps silt and other material. Just downstream, there is a vegetated sand bar island, which is valuable for wildlife, especially in high flow conditions. (Fig. 50) There is also good submerged vegetation and emergent vegetation either side of the Barton Mill Road Bridge.



Downstream of this bridge both banks are fairly naturalised, with submerged and riparian vegetation but with limited emergent vegetation due to the steepness of the banks. On the left bank, the 'peninsula' area, bordered by the confluence of the northern channel, is scrubby and full of litter, with a number of mature trees shading the area. A wide path had been cleared for some unknown type of access. Downstream of that confluence on the left bank are large patches of Japanese Knotweed. (Fig.49)

### Proposed enhancements (Appendix 1+2)

- To create pockets of emergent vegetation, valuable habitat for invertebrates, in 3 identified still water areas just below and beside the weirs. Constructed with stakes, hurdles and back filled with soil in hessian sacks and planted. (Fig. 50)
- Investigate fish pass improvements for wider range of species, including elvers.
- Remove Japanese Knotweed as a priority



## Reach 11 Vauxhall



Fig. 51



Fig. 52

Overall this is a good, relatively quiet and naturalised stretch, close to a wetland nature reserve (recently closed). (Fig.52) There is abundant water crowfoot, generally good riparian vegetation but limited emergent vegetation in the upstream section. Developments continue to be built along the right bank.

The river bed remains largely even however there is some depth variation along its length, with a deeper slacker area at the upstream end going in to shallower, faster sections downstream. Work was carried out by EA in 2008 to create pool and riffle habitat along a stretch marked on Fig. 51. (Fig 53) ———



Fig. 53 by EA

Just downstream of this work, about half way along this reach, and just visible from the opposite bank, is a low lying area cut off from the river by a raised embankment. (Fig.51A) This has been identified as having the potential for wetland enhancement and possibly increasing flood storage capacity. (Nigel Holmes 2008)

There is a footpath on the left bank beside the river which ends at Vauxhall Bridge, although it is little used and quite difficult in places. A short section of path runs along the right bank, currently ending where development is taking place. There are proposals for continuing this path to Vauxhall.

### Proposed enhancements (Appendix 1+2)

- To create a wetland area by opening up a section of the right bank, allowing the river to flood the low lying area in high flow periods. (Fig 51A) This will have the added benefit of acting as flood storage. This can be achieved in one of two ways, firstly by lowering the embankment the length of the wetland area, and moving the spoil to the back edge, then it will likely flood on a more regular basis. Secondly, by removing a much shorter stretch downstream, it will still flood, limit the amount of silt and litter entering the area but be less visible. (Nigel Holmes)
- The 'wetland' area should be surveyed prior to any works taking place, including cycle / footpaths. If the wetland enhancements are taken up, the path would necessarily need to be raised to accommodate the wetland habitat and to remain passable year round.

## Reach 12 Fordwich



Fig. 54



Fig. 55

This reach again remains largely inaccessible from land, with river banks that are mostly naturalised. Between Vauxhall Bridge and the A28 close to Fordwich, water flow conditions are generally considered to be good and there is abundant water crowfoot. At the A28 there are short sections which are heavily engineered. There are a couple of stretches which are fairly straight, and there is always potential to improve the diversity of flow rates and water depth, with woody debris and dig and dump methods, however due to the lack of public access and visibility, this is probably a low priority.

Downstream at Fordwich the main river channel is highly visible from bridges and a public footpath on the right bank. A private garden runs down to the river on the left bank. Both banks have fairly straight edges and there is little marginal vegetation. Trees along the left bank are shading out the bank, leaving it quite bare of bank vegetation too. Water flow is overall slack and habitat variation is poor. (Fig.56)



Fig. 56

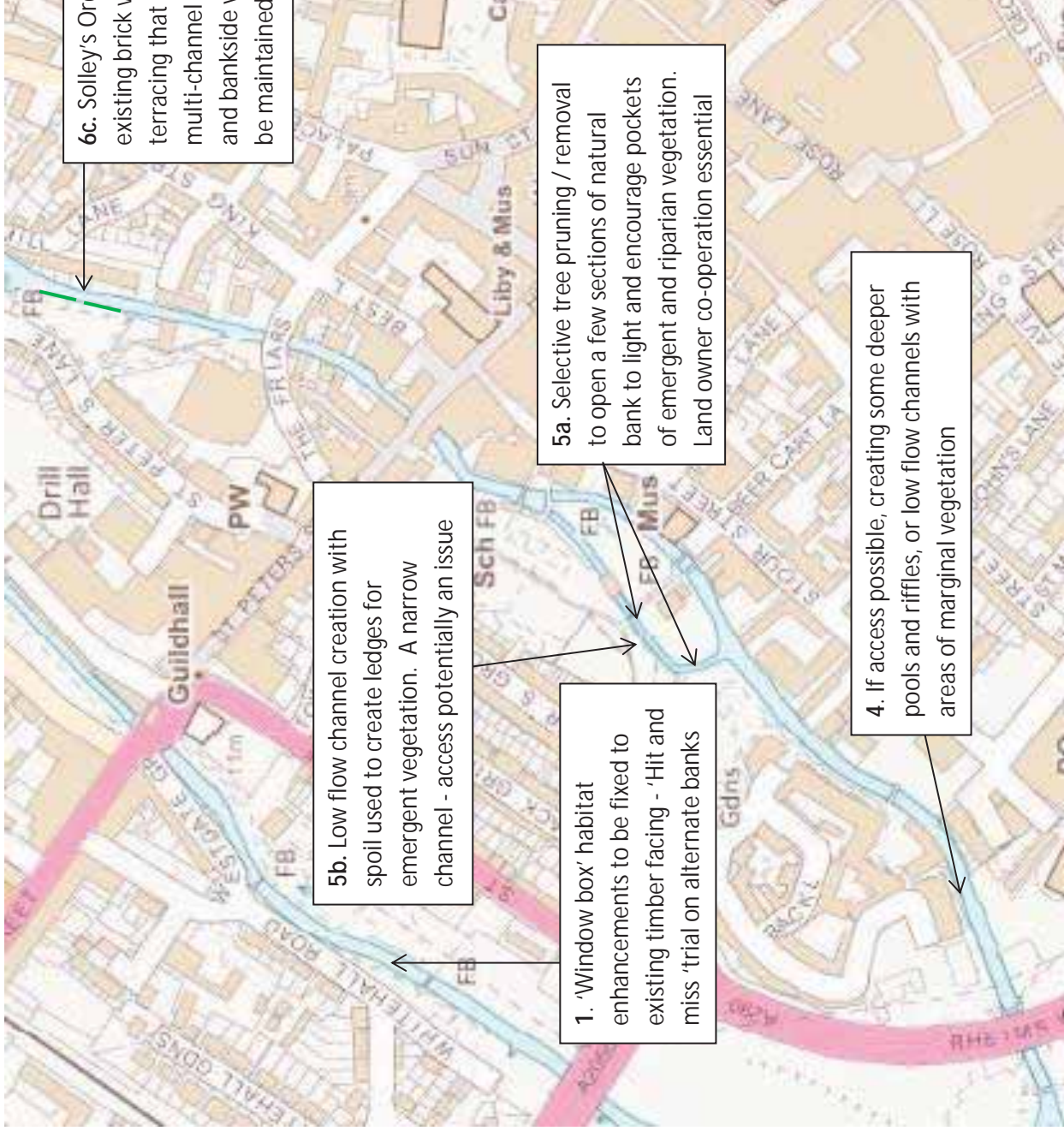
### Proposed enhancements (Appendix 1+2)

- a) To create more in-channel habitat diversity by excavating pools in the channel and depositing the spoil at the margins of the channel upstream. The deposited material will narrow the channel upstream as well as vegetate to provide marginal edge habitat. Stakes and hurdles may be needed to secure the deposits and encourage vegetation. Pools will need to be dug deep enough to create sufficient deflectors upstream in order for the pools self-cleanse. Constraint - bed material will need to be coarse enough not to be eroded during floods. (Nigel Holmes 2008)
- b) Selective tree pruning on the left bank would open up areas to light and encourage pockets of good riparian and emergent vegetation. The cooperation of the landowner is essential.

# APPENDIX 1

## SUMMARY OF WORKS - MAPS

# REACHES 1, 4, 5 and 6



# REACHES 2, 3, 6 and 7

**3c.** Investigate possibility of improving fish pass for eels and other species.

**3a/b.** Short-term - investigate potential of controlling sluice / flow under Deans Mill.  
Long-term - investigate removing main weir.

**7a.** Selective tree pruning around edge of Bus Co Island to open up river edge and improve riparian / emergent vegetation.

**3d/e** Long-term in channel work to create low flow channel and edge habitat. / Short-term - Create pockets of natural habitat through the installation of 'window boxes' or stakes and faggots structures.

**2c.** Take advantage of slack water section, to create natural habitat using either 'window boxes' or stakes, faggots and filled/planted hessian sacks. Avoiding drain outfalls!

**3g.** Tree pruning to reduce shade.

**7c/d.** Installation of large woody debris right bank for flow and depth diversity. / Stake and faggot structures for some bank protection.

**2a.** Remove existing brick wall to replace with engineered terracing that will provide emergent and bankside vegetation. Areas around trees excluded. 2x 25m approx.

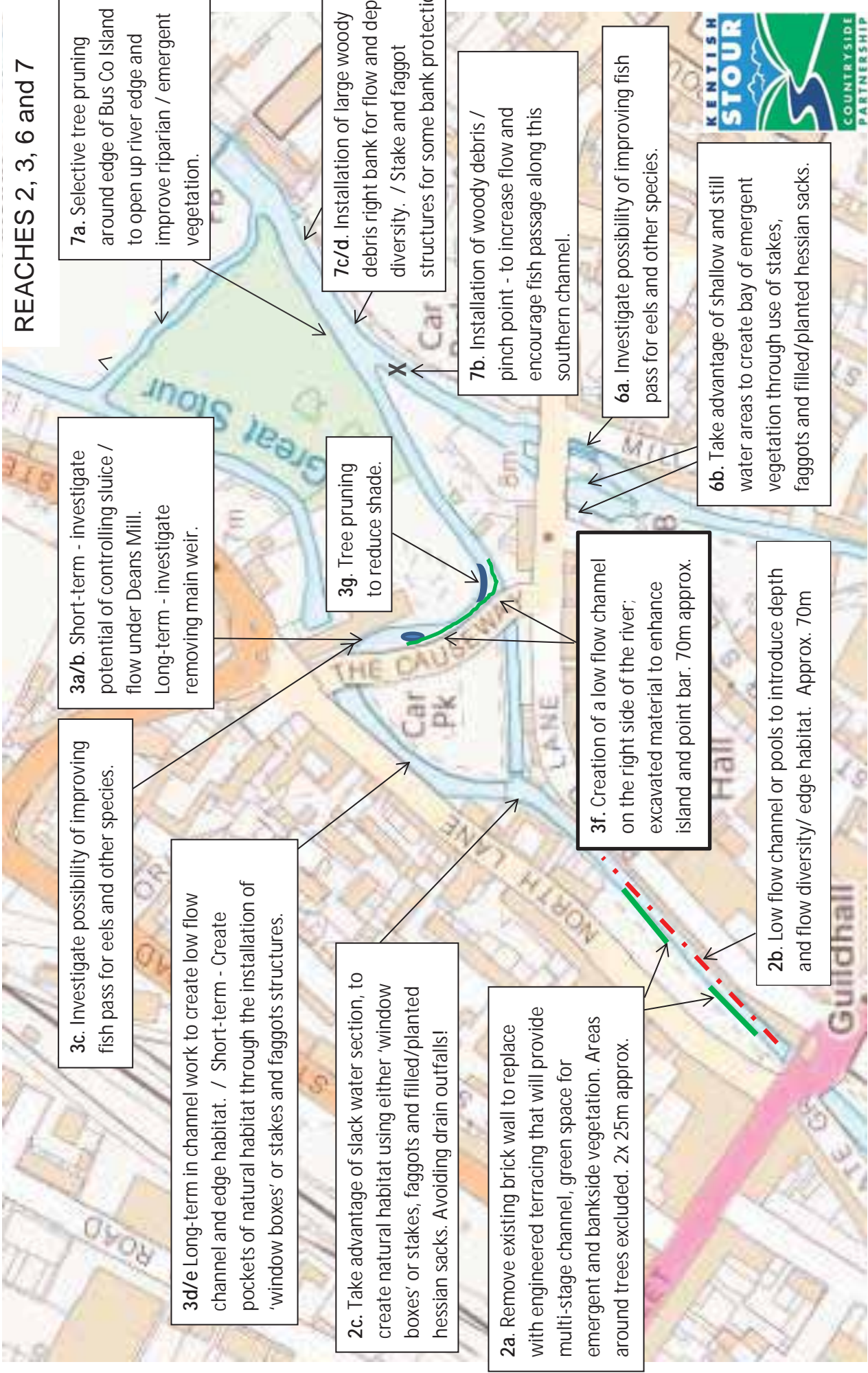
**7b.** Installation of woody debris / pinch point - to increase flow and encourage fish passage along this southern channel.

**3f.** Creation of a low flow channel on the right side of the river; excavated material to enhance island and point bar. 70m approx.

**6a.** Investigate possibility of improving fish pass for eels and other species.

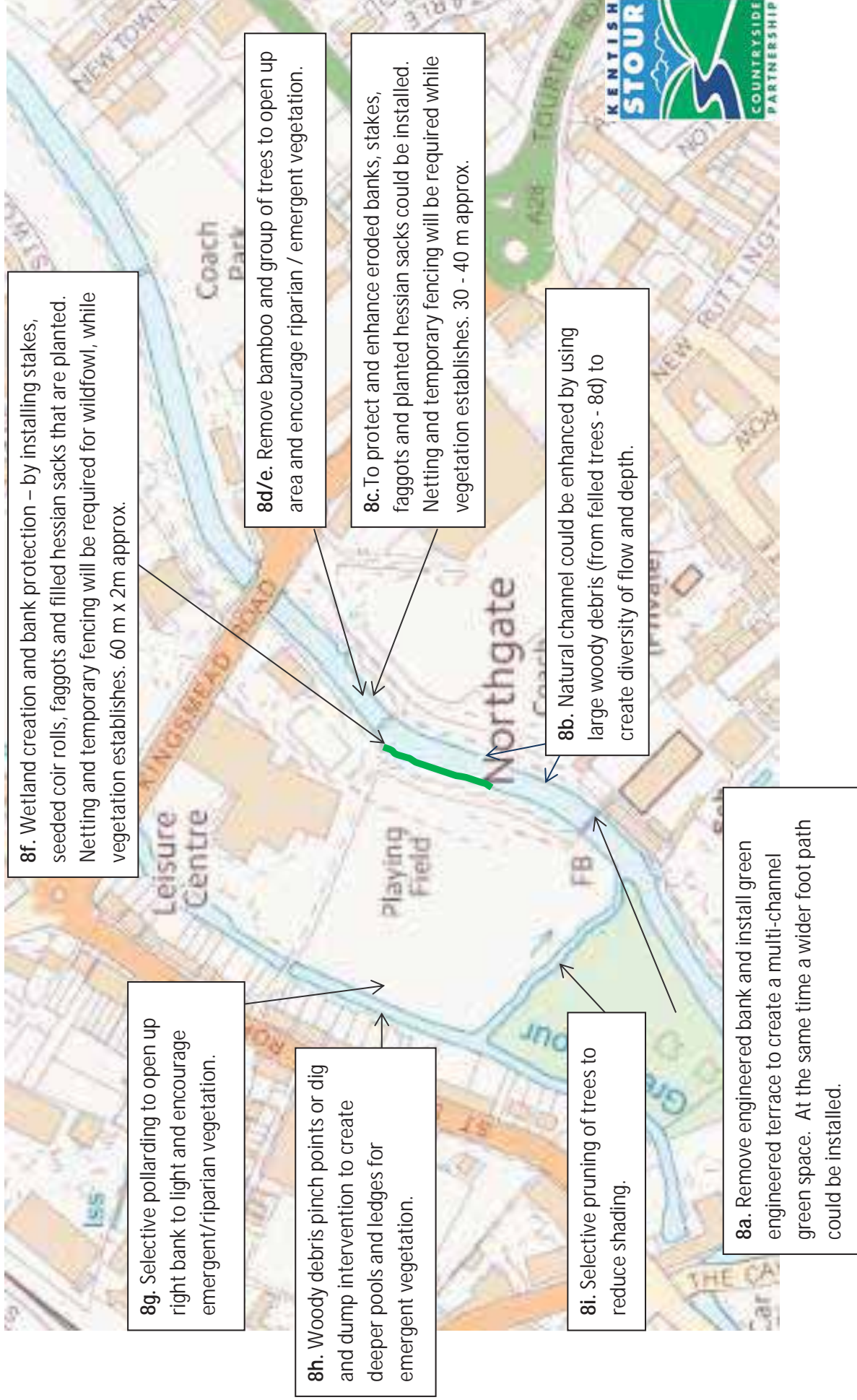
**2b.** Low flow channel or pools to introduce depth and flow diversity/ edge habitat. Approx. 70m

**6b.** Take advantage of shallow and still water areas to create bay of emergent vegetation through use of stakes, faggots and filled/planted hessian sacks.

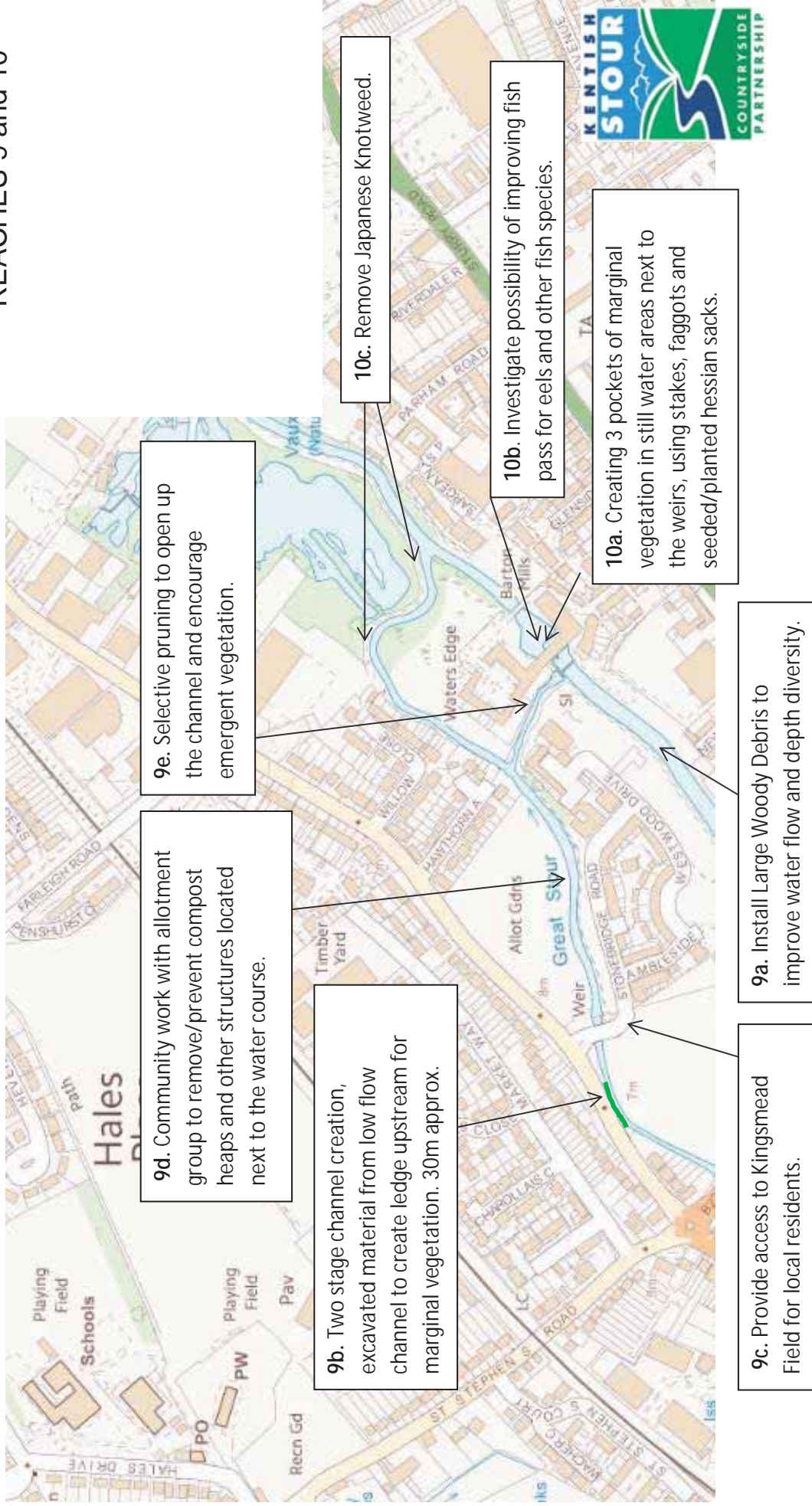




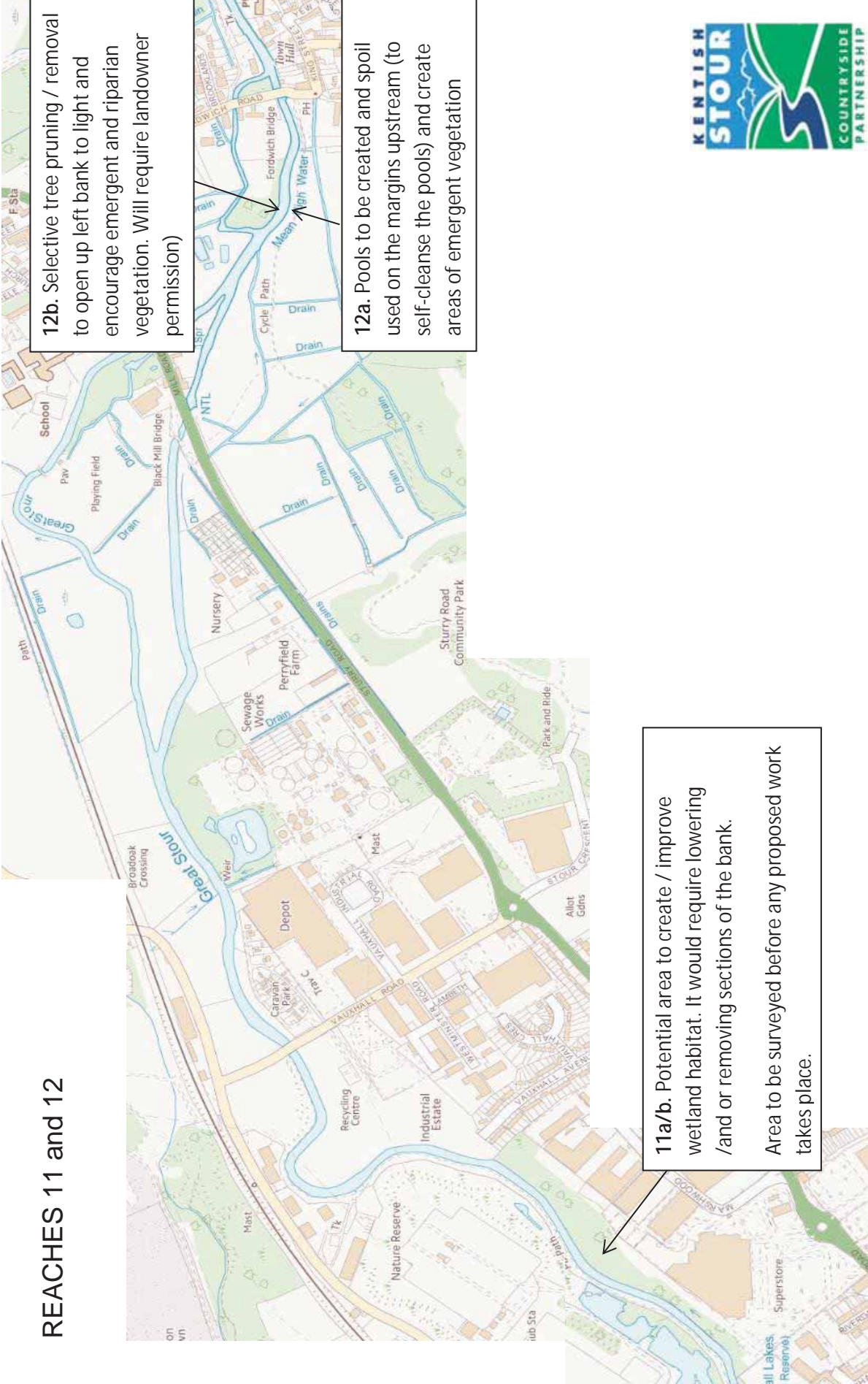
# REACH 8



REACHES 9 and 10



## REACHES 11 and 12



## APPENDIX 2

### SUMMARY OF WORKS – PRIORITIES AND COSTS TABLE

REACH	Ref.	PROPOSED ENHANCEMENTS	PRIORITY (High/Medium/ Low)	ACCESS good/medium /difficult	COSTS All approx.	CONSTRAINTS COMMENTS
<b>Westgate Gardens 1</b>		Trial 'window box' habitat	<b>High</b>	Good	£3000	Water levels Timing – Spring work for planting
<b>North Lane 2</b>	a	Install engineered terracing to provide a multi-stage channel and edge habitat Approx. 2 x 25m lengths	Med/Low	Good	£30000	Disruption to car park and residents of adjacent buildings Underlying archaeology – delays Water levels and timing (outside of main spawning period)
<b>2</b>	b	Install low flow channel Approx. 70m	Low	Good	£10000	River bed may be armoured Underlying archaeology – delays Water levels and timing (outside of main spawning period)
<b>2</b>	c	Install stake and faggot structures in still water area	Med	Med	£2000	Water levels Timing – Spring work for planting
<b>Deans Mill &amp; Millers Field 3</b>	a	Removal of impounding structures	Med	Difficult	£100000 + (Difficult to estimate!)	Disruption to important roads Potential impact on Deans Mill apartments Underlying archaeology – delays Water levels and timing (outside of main spawning period)
<b>3</b>	b	Controlling water levels using sluice (which appears to remain open constantly)	<b>High</b>	Good	-	Impact on top channel if lower main river channel prioritised in low water level conditions.
<b>3</b>	c	Investigate improvements to existing fish pass for broader range/ age (elvers)of species	Med	Good	£5000	Water levels and timing (outside of main spawning period)
<b>3</b>	d	Upstream of Causeway – redistribution of bed material to form pool and riffles/marginal habitat	Low/ Med	Difficult	£10000	Access – close to major roads Work to be done in low water level period Timing – outside of main spawning periods Underlying archaeology - delays
<b>3</b>	e	Install stake and faggot structures or 'window boxes'	<b>High</b>	Med	£2000	Water levels Timing – Spring work for planting
<b>3</b>	f	Below weir, redistribution of the river bed gravels to create low flow channel (50m) and more discreet sand bar/island	Med/ <b>High</b>	Difficult	£10000	Work will need to be done in low water level period Timing – outside of main spawning periods Underlying archaeology - delays

3	g	Tree work to open up sand bar to light and encourage vegetation.	Med	Difficult	£2000	Water levels and timing (winter work)
Tannery Dev 4		Creating some deeper pools and riffles, or low flow channels with marginal vegetation areas	Low	Difficult	£10000	Work will need to be done in lower water level period. Timing – outside of main spawning period Underlying archaeology - delays
Greyfriars 5	a	Removing scrub, opening up channel edges to light encouraging emergent and riparian vegetation	Med	Med	£2000	Land owner consent required Water levels and timing (winter work)
5	b	Redistribution or river bed for low flow channel and marginal vegetation	Low	Med/Difficult	£5000	Land owner consent may be required Underlying archaeology – delays Water levels and timing (outside of main spawning period)
St Peters – Abbots Mill 6	a	Investigate improvements to existing fish pass for broader range/ age (elvers)of species	Med/ High	Good	£5000	Water levels and timing (outside of main spawning period)
6	b	Install stake and faggot structures in still and shallow water areas for emergent vegetation	High	Med	£2000	Water levels Timing – Spring work for planting
6	c	<b>Solley's Orchard.</b> Install engineered terracing to provide a multi-stage channel and edge habitat.	Med/ High	Med	£30000	Disruption to park users and nearby residents and businesses Some loss of useable green space Underlying archaeology – delays Water levels and timing (outside of main spawning period)
Bus Co Is. St Radigund's 7	a	Selective pruning of trees around the island	High	Med	£2000	Water levels and timing (winter work)
7	b	Installation of pinch point (woody debris pinned to river bed) to encourage fish up southern channel	Med/High	Med	£5000	Water levels and timing (outside of main spawning period)
7	c	Installation of 1 or 2 woody debris to vary flow and improve marginal habitat	Med/High	Good	£5000	Water levels and timing (outside of main spawning period)
7	d	Install stake and faggot structures to protect bank erosion and add marginal vegetation	Med	Good	£2000	Water levels Timing – Spring work for planting

Sainsbury's - St Johns 8	a	<b>St Johns Primary</b> - Removal of raised engineered bank and replace with engineered multi-channel terrace (marginal / riparian habitat) and wider footpath.	Low	Difficult	£30000 +	Disruption to school access / footpath Engineering – keeping existing footbridge Water levels and timing (outside of main spawning period)
	b	Upstream - Woody debris/ pinch points 1 or 2, for more varied flow (using removed trees / material)	Med/High	Good	£2000	Timing: Tree work (winter work) River work (Spring/Summer) and outside of main spawning period.
	c	<b>Sainsbury's</b> – bank protection, stake and faggot installation, planted and protected	High	Good	£2000	Water levels Timing – Spring work for planting
	d	Remove / prune trees to open up area and encourage marginal/riparian vegetation (bank protection)	High	Good	£2000	Timing – winter work Area may need fencing to protect it while it regenerates
	e	Remove bamboo	High	Good	£200	None
	f	Wetland creation on left bank, using stakes, faggots, coir rolls and planted back fill.	Med/Low	Med	£5000	Timing – water levels, outside of main spawning period and Spring planting Waterfowl – (fencing area to protect it while it establishes)
	g	<b>Northern channel</b> - Selective pollarding / pruning for marginal / riparian vegetation.	High	Med	£2000	Timing: Tree work (winter work)
	h	Low flow channel creation / improved flow dynamics using either woody debris / pinch point or pool and riffle	Med	Med/Difficult	£5000	Timing – water levels and outside of main spawning period
	i	<b>Cross channel</b> - Tree work to open up channel and improve vegetation conditions	High	Med/Difficult	£2000	Timing: Tree work (winter work)
	Kingsmead 9	a	<b>Main River</b> – woody debris installation to vary flow and depth (1 or 2)	Med	Med	£2000
b		Creating a two stage channel 25 – 35 m. for low flow periods and to provide areas of marginal habitat.	Med	Med	£5000	Timing – water levels and outside of main spawning period Spring planting
c		Create access to Kingsmead Field from Stonebridge Road	High	Good	£1000	N/A
d		Community work with <b>Broad oak</b> Allotments - aim education and to remove compost heaps and structures beside river	High	N/A	£1000	Need partnership support with CCC

9	e	Selective tree pruning to open up channel for vegetation.	Med/High	Good	£2000	Timing – Tree work (winter work)
<b>Barton Mill</b> 10	a	Install stake and faggot structure for pockets of marginal vegetation	Med/Low	Med/Difficult	£2000	Timing – low water levels Spring planting
10	b	Investigate improvements to existing fish pass for broader range/ age (elvers)of species	Med	Good	£5000	Work will need to be done in low water level period Timing – outside of main spawning period
10	c	Remove Japanese Knotweed	High	Good	£5000	Identifying responsible landowner
<b>Vauxhall</b> 11	a	Opening up / lowering bank to connect river to low lying land and create wetland area and flood storage.	Med	Difficult	£8000	Timing – low water levels / Nesting birds Two possibilities opening up whole bank or section of bank
11	b	Survey of land prior to any work taking place.	High	Med	£1000	Access / ownership
<b>Fordwich</b> 12	a	Pool and riffle creation that provides areas of marginal vegetation	Med	Med/Difficult	£5000	Landowner (left bank) cooperation Timing – low water levels
12	b	Tree work to open up left bank to light and improve riparian / emergent vegetation	Low	Good	£2000	Landowner (left bank) permission and cooperation Timing – Tree work (winter)



## APPENDIX 3

### References

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Carol Donaldson, Kentish Stour Countryside Partnership, *River Stour and Floodplain Restoration Plan Shalmsford Street to A2*, 2013

Jon Shelton, Kentish Stour Countryside Partnership, *Westgate Biodiversity Plan*, 2012

### Fishing on the River Great Stour, Canterbury

#### Introduction

In the late 1980s Canterbury City Council began a process of opening up the riverside corridor in the city to people. Today, access paths for walking and cycling follow the twists and turns of the river as it flows through the various parks and gardens of the city. As a consequence, the riverside routes are now very popular and well used by everyone.

The river itself is currently home to three punt and boat companies with a canoe company also looking for an operational base.

Given this situation the river in the centre of Canterbury is not best-suited to fishing. This advice note will expand on the reasons for this and will provide alternative locations.

#### **Fishing on the Great Stour in central Canterbury, is now not seen as appropriate and is not encouraged for the following reasons:**

- The city is a popular place for people – residents and visitors. The riverside access routes which pass close to the riverbank are particularly attractive to walkers, cyclists and joggers. The river itself is licenced for punts, rowing boats and canoes. There is a health and safety risk from casting lines with hooks across pathways.
- There is a complex arrangement prevailing whereby byelaws outlaw fishing in certain city council-owned parks and gardens. In other areas the riverside is in private ownership and the permission of the owner is required before fishing.
- The deeper pools close to mill races are characterised by high enclosing walls. Fish caught in these situations are difficult to land without causing distress and injury to the fish. Paths adjacent to these locations are often narrow and very popular with people. Fishing is not appropriate in this situation.
- The winding, narrow river corridor in most of the city is characterised by the presence of obstructions in the form of bankside trees, shrubs and overhead power lines. Empirical evidence suggests anglers are more likely to snag fishing lines in this context compared to more open countryside. Discarded fishing line and hooks

represent a hazard to wildlife, particularly waterfowl, bats and other terrestrial mammals.

- Regular fishing from the same position may result in food and bait being discarded on the bank. This is not only untidy in appearance but is known to attract vermin. In an urban context this can quickly escalate into a serious issue.
- Fluctuating water levels, coupled with the obstruction of weirs, mean fish in the urban reaches of the river are often under stress. Fishing in such circumstances can exacerbate the situation.
- Fish in the Stour are under pressure from many factors. We would like to promote the city centre as a safe refuge for fish; a place from which they can spread out to improve the overall sustainability of the fish population throughout the river.
- The river margins in the city are increasingly coming under pressure from invasive plant species such as Japanese Knotweed (*Fallopia japonica*) and Himalayan Balsam (*Impatiens glandulifera*). Anglers who disturb marginal vegetation may inadvertently contribute to the spread of these potentially harmful species.

**To conclude, the River Stour running through the centre of the city is not managed as a fishery and the river is not best-suited to the activity of fishing.**

Those wishing to fish the River Stour are encouraged to join the Canterbury and District Angling Association (email: [enquiries@cdaa.co.uk](mailto:enquiries@cdaa.co.uk)). The Association provides nine miles of fishing from Fordwich to Plucks Gutter on both banks, with car parking at several points.

There are also numerous commercial fisheries within easy reach of the city. Those with a passion for angling, or just pursue fishing as a casual pastime, are encouraged to seek out alternative venues to those in the city.

### **Regulations**

- Freshwater fishing on the River Stour is strictly seasonal. There is no fishing allowed during the Close Season (15 March – 15 June). Maximum penalty £50,000.
- Anyone over 12 years of age must possess a valid rod licence issued by the Environment Agency. This must be available for inspection at all times whilst fishing otherwise prosecution may result. Maximum penalty £2,500.
- The Environment Agency's South East Region rod fishing byelaws apply; see: <https://www.gov.uk/government/publications/environment-agency-rod-fishing-byelaws-south-east-region>

## Some dos and don'ts for fishing the River Stour

These guiding principles are aimed at sustaining fish stocks, protecting the environment and ensuring the health, safety and well-being of all river users, including anglers.

- **DO** return all fish unharmed to the river as quickly as possible. The use of keepnets to temporarily retain your catch – though not prohibited - is not encouraged. Fish removal can harm the natural balance of the river ecosystem and can add to the pressure that some threatened species are already under.
- **DO** use un-hooking mats when specimen fish are banked: unhooking is the aspect of fishing where fish are most likely to sustain damage. Fish care is vital from the moment you begin to land the fish through to its safe return to the river. Fish that are well looked after out of the water should grow, and reproduce, well in the water.
- **DO NOT** use crayfish of any species, whether alive or dead, (including any part of a crayfish) as bait. Native crayfish are rare and protected. Non-native crayfish species can spread crayfish plague, which can wipe out the native species.
- **DO NOT** take any fish for use as live bait unless the fish are retained at and used only in the water from which they were taken. Moving live baits between waters can spread fish diseases. Live-baiting, though not prohibited, is discouraged.
- **DO NOT** leave a rod and line with its bait or hook in the water, such that you are unable to take sufficient control of the rod.
- **DO NOT** block or otherwise obstruct riverside paths and cycle-ways.
- **DO NOT** light any fires on or close to the riverbank.
- **DO** be aware of other river users. Always take care when casting.
- **DO** keep a careful look out for overhead electric power lines and keep a safe distance away.
- **DO** follow the Check, Clean, Dry advice to prevent the spread of invasive species.
- **DO** report all instances of unauthorised angling, dead or distressed fish or incidents of pollution to the Environment Agency's EA incident hotline on: 0800 80 70 60.
- **DO take all litter home with you.**

**If anyone is seen fishing during the close season, or is believed to be fishing inappropriety, they should be reported to the Environment Agency's Incident Hotline  
Tel: 0800 80 70 60 (24 hour service)**

# Palette of Furniture and Materials for Canterbury's Riverside

## 1. Coxwell self-binding path gravel

Only available through Grundon, our exclusive Coxwell products are made from unique sponge gravel. It is the ultimate pathway material, as it combines durability and low maintenance with the aesthetic beauty of natural gravel.

The material formed in what was once a tropical lagoon at our Wicklesham quarry, near Faringdon in Oxfordshire.

To achieve the best results it is screened and graded into three products.

### 1. Coxwell Self-Binding Path Gravel

This material has been proven in the marketplace for a number of years, and has earned a prestigious reputation for a pathway, with an attractive natural reddish/brown colour that matures and improves with age. It is remarkably easy to lay, and its hard-wearing surface requires minimum maintenance and aftercare.

This combination of sponge gravel and grit sand is screened to 30mm so that when rolled, it gives a fine, close textured surface. It is used extensively throughout Southern England and Wales on pathways and cycle tracks in parks, country estates, gardens and golf courses. On selected applications, the material has even been laid using an asphalt paver. Please see our laying guidelines for further details.

### 2. Coxwell 5mm Path Dressing

Coxwell 5mm path dressing is similar to the Coxwell self-binding path gravel, but thanks to a finer texture it can be used to add the finishing surface. It is used particularly on golf courses and sports fields, because it is unlikely to damage mower blades. Please see our laying guidelines for further details.

### 3. Coxwell Pathway Sub-Base

This is the ideal sub-base, and is highly compatible with the Coxwell self-binding path gravel. It is graded to 50mm down and compacts to form a sound, free-draining base for paths and walkways. Please see our laying guidelines for further details.

Coxwell self-binding path gravels have been used at:

Richmond Park, London

Cotswold Wildlife Park, Burford, Oxfordshire

Westonbirt Aboretum, Gloucestershire

Painshill Park, Chobham

Barge Walk, Kingston-upon-Thames

Waterside Park, Heathrow

Hambledon Horse Trials, Oxfordshire

Botanical Gardens, Oxford

Winchester Cathedral

Canal Towpath, Horsefair, Kidderminster

Hardcourt Arboretum, Oxfordshire

Whipsnade Zoo, Dunstable

### **Coxwell Laying Guidelines**

Grundon's self-binding path gravel is a naturally occurring material, quarried from a deposit of sponge gravel, a unique product with a very pleasing natural reddish/brown colouring which will improve and mellow as the pathway weathers.

For calculating volumes, use 1.8 tonnes per cubic metre, which relates to approx. 7 square metres per tonne when laid to a compacted depth of 75mm, and approximately 13 square metres per tonne when laid to a compacted depth of 40mm.

#### **For new pathway constructions:**

The foundation must be of sufficient stability to carry the proposed traffic. The area must have sufficient drainage which will ensure any storm water can drain away freely. Where a path is to be constructed which has sloping ground which would shed water onto the pathway, a French drain must be constructed on the slope side or sides alongside the pathway to take the excess water, so as not to flood the pathway. We would not recommend that Coxwell 5mm path dressing is used in these locations.

#### **To achieve best results:**

We recommend using Coxwell pathway sub-base, which is a totally compatible base material for the Coxwell self-binding gravel. This is laid 100mm thick and then compacted using a suitable weight vibrating roller. When the Coxwell pathway sub-base is fully compacted and is still moist, the Coxwell self-binding path gravel can be laid. This should be done in two layers, each 40mm thick to achieve a finished compacted depth of 80mm. Lay both layers 60mm thick, rake and compact each layer. The ideal compaction is best achieved by the initial first two passes of the roller being carried out with the roller vibrator turned off, and then continue compacting with the vibrator operating. The Coxwell pathway sub-base and the Coxwell self-binding path gravel must both be very moist but not too wet when rolling.

If a finer surface is required i.e. golf courses, Coxwell 5mm path dressing can be added. Follow the above laying guidelines, but when the self-binding path gravel has been laid and raked to the cambers required, leave uncompacted, and whilst still moist add 15mm of Coxwell 5mm path dressing, rake evenly and compact using a vibrating roller, as described in the previous paragraph with the first two passes of the roller with the vibrator turned off.

If any repairs should be required at a later date, then scarify the surface of the path, moisten and add a new layer of the same material and compact.

Laying Guidelines must be passed onto the Laying Contractors.

Laying Guidelines **MUST** be followed at all times.

Moisture content **MUST** be maintained at all times.

When newly laid there may be some initial staining but this will diminish with exposure to the elements.

The pathway will strengthen and harden with the design usage and weathering.

Be advised, horse and motorised traffic **WILL NOT** enable surface compaction to take place.

The laying of Coxwell Self Binding Path Gravel is not recommended during frosty and or snowy weather conditions.

**For further information contact:**

Tel: 01491 834311

## **2. Lighting**

Requirements:

- Energy-efficient LED lighting which directs light downwards and not into the night sky
- Lighting capable of having shields fitted to minimise light spill onto river corridor
- Lighting columns which are not visually obtrusive in the landscape

Low-level bollard lighting is vulnerable to vandalism.

A light which meets the above requirements is:

**Urbis Schreder's 'Ampera Mini'**

Capable of having front shields fitted to minimise light spill onto river corridor. Lanterns consume just 11w of energy each. Approximate spacing of 4.0m high columns to illuminate 2.5m wide riverside access path along straight alignment is 32m.

Colour of lantern and column: Black

Contact: Urbis Schreder Tel. 01256 354446









Urbis-schreder's Ampera Mini LED lantern



Image showing how illumination is controlled and directed downwards






	Description	Urbis Schröder reference
	Ampera Mini FRONT REAR	AMPM000001GBU SPARE LIGHT SHIELD FRONT/REAR P1536 AMPERA MINI RAL9005
	Ampera Midi FRONT REAR	AMPD000001GBU SPARE LIGHT SHIELD FRONT/REAR P1537 AMPERA MIDI RAL9005
	Ampera Maxi FRONT REAR	AMPX000001GBU SPARE LIGHT SHIELD FRONT/REAR P1538 AMPERA MAXI RAL9005
	Ampera Maxi MIDDLE	AMPX000002GBU SPARE LIGHT SHIELD MIDDLE/RIGHT P1538 AMPERA MAXI RAL9005 (STD)
	Ampera Mini LEFT SIDE RIGHT SIDE	AMPM000004GBU SPARE LIGHT SHIELD LEFT/RIGHT P1536 AMPERA MINI RAL9005
	Ampera Midi LEFT SIDE RIGHT SIDE	AMPD000003GBU SPARE LIGHT SHIELD LEFT/RIGHT P1537 AMPERA MIDI RAL9005

This document Applies for All AMPERA Light shield kits; FRONT/REAR and LEFT/RIGHT. Kits will consist of one light shield and either 2 or 4 M5 stand-off screws and equivalent washers etc. depending on the kit in question. The images used in the description below are for AMPERA MINI Rear light shield.

Tools required: T25 torx driver, 8mm socket/nut-runner/spanner etc.

**IMPORTANT NOTE:** Disconnect electrical supply in column base before commencing.

<p>1. Using a T25 torx driver, <b>ONE AT A TIME</b> remove the required screws retaining the lower casting of the optic and, using an 8mm socket, replace with M5 stand-off screw and washer – it is imperative that this is done <b>ONE AT A TIME</b> so that the pressure on the gasket is not lost, and the optic compartment remains sealed at all times. (tightening torque shown below)</p> 	<p>3. Completed assembly is as shown below: NOTE: the orientation of the AMPERA MINI shield is important, to ensure that when the canopy is rotated forwards, the shield does not clash with the lower body of the luminaire.</p> 
<p>2. Retain light shield to M5 stand-off screws using the original M5 screws that were removed in step one, placing the remaining washers between the screw and light shield. (tightening torque shown below)</p> 	<p>NOTE: The procedure shown is for an AMPERA MINI rear light shield, however the procedure is the same for the FRONT/REAR and LEFT/RIGHT shields on all AMPERA models, the only point that differs is the number and location of the screws that need to be replaced by the M5 stand-off screws. This procedure can also be achieved by removing the top canopy/gear/optic assembly from the luminaire, and working with this assembly on a bench. This is achieved as follows: Release the two catches on the side of the lantern, tilt the assembly forwards and, at an angle of 45°, lift the assembly clear.</p>

Optional light shields can be fitted easily and at minimal cost

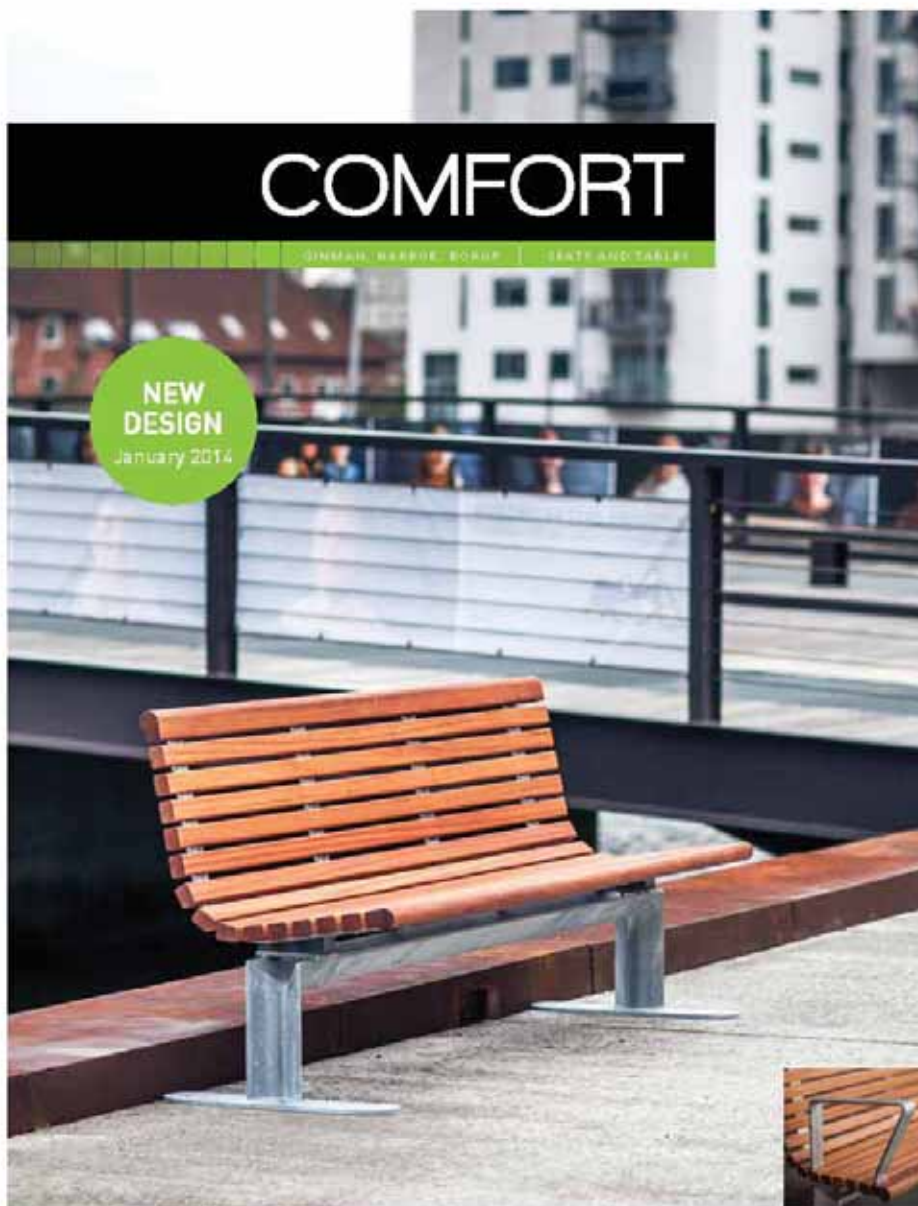
### 3. Seating

Both the Dane John and Westgate Parks have their own style of seat. These are key parks in the city and so it was felt appropriate for each to have strong individual character and their own style of seat.

We wish to create an easily recognisable identity for Canterbury's Riverside (Chartham to Sturry). Rationalising choice of seating is one important contributor to achieving this central aim.

a) Seating choice for urban stretches of the riverside including the smaller parks and gardens within the city walls:

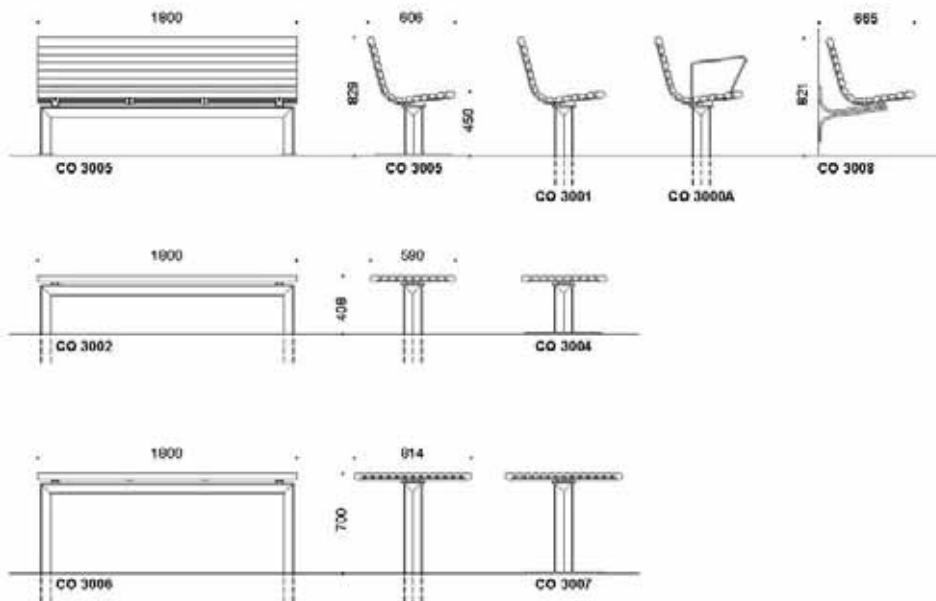
Vekso's 'Comfort Seat'



**Comfort**

- Frame 90 x 90  
10 x 50 mm
- Wall bracket 65 x 15 mm  
Hot-dip galvanised steel. Can also be powder coated.  
For standard colours, see product info.
- Slats 44 x 33 mm / 44 x 65 mm  
Untreated or oil-treated mahogany  
(FSC certified) or ash.
- Armrests 10 x 50 mm  
Hot-dip galvanised steel. Can also be powder coated.  
For standard colours, see product info.  
Please state separately when ordering the seat.
- Installation Embedment or surface/wall mounting

Design: Grimman, Harboe, Borup landscape architects



b) Seat choice for rural stretches of the riverside (beyond Toddlers Cove going west and Barton Mill going east)

The 'Ranmore Bench' produced by Norbury Park Wood Products



c) Picnic Table

The 'Cobham Picnic Table' produced by Norbury Park Wood Products



## 4. Litter Bins

The chosen litter bin for Canterbury's park and gardens is Earth Anchor's Big Ben Litter Bin. This is used throughout the parks, gardens and riverside spaces of the city. It is a very good, robust metal bin appropriate to the riverside environment. Colour: Black

Supplier: Earth Anchors



## 5. Structures: bridges, walls and railings

### a) Bridges





Examples of a well-designed pedestrian footbridges over the river at North Lane, Canterbury

Note tapered uprights and variation in diameter of horizontal railings in the example above. Use of protective mesh avoided. Simplicity and crafted quality of design is in keeping with the historic character of the adjacent buildings.

b) Walls



Note octagonal gate post in background. Substantial 3 brick wide pier

Bricks, bonds and stone copings or pier caps should match materials used in the locality. Clay stock bricks and lime mortar with a struck joint and yorkstone copings is characteristic of the historic core of the city.

c) Iron Railings



Typical square section vertical rails with top and bottom horizontal rails



Typical paddock style railings used in parks and open spaces in the city



## 6. Signage

### a) Welcome signs



Example of welcome sign in Westgate Parks. In this instance A3 produced by Fitzpatrick Woolmer using their 'n-viro technique'. The method creates a very robust surface with colours guaranteed for 5 years. Installed 2016.

### b) Directional signs

#### i) Urban stretches (Toddlers Cove to Barton Mill)



Directional finger posts used throughout the city centre

ii) Rural stretches



Example of timber finger post (min. 125mm x 125mm post) and matching timber

Top of post to extend at least 250mm above the horizontal fingers.

Bollard post with inset sign to indicate shared cycle route with name of route

c) Information signs



Example of an A2 lectern-mounted interpretation sign installed in the Westgate Parks. Fitzpatrick Woolmer's n-viro manufacturing technique without frame. Slim line and very robust with colours guaranteed for 5 years. Installed 2016.



Example of cabinet style information board installed in the Westgate Parks. A-Max Noticeboard AO supplied by Greenbarnes Ltd 2016.

## 7. Specification for painting existing metal work (seats, lighting columns, railings, bins, signs etc)

### Surface preparation:

1. Thoroughly wash down all substrate areas to remove contamination, including dust, dirt, grease, oil, bird-lime etc.
2. Wire brush and scrape all corroded areas to achieve a “sound rusted” surface.
3. Further clean corroded areas using aluminium oxide abrasive paper, to achieve an St2 standard of cleanliness, defined as a faint metallic sheen.
4. Feather off any raised edges of remaining sound coatings to eliminate water-entrapment ledges and to provide a good cosmetic appearance in the ultimate dried film.
5. In the event that there are isolated patches of needle rust, use aluminium oxide abrasive paper to ensure all heads are broken, to facilitate adequate penetration of new primer.
6. Ensure all remaining previous coatings are soundly adhered.

### Coatings application:

7. By brush, spot-prime all corroded areas with Branth Orange Penetration Primer, at a wet film thickness of 140 microns (80 microns dry).
8. Leave for a minimum of 2 hours.
9. Apply a secondary spot-priming coat Brantho-Korrux 3-in-1 RAL 9007 Grey Aluminium to same areas, at a wet film thickness of 100 microns (60 microns dry).
10. Leave for a minimum of 2 hours.
11. Apply full topcoat Brantho-Korrux 3-in-1 RAL 9005 Black to all substrate areas, at a wet film thickness of 140 microns (80 microns dry).

### Application notes:

- a) Application is by brush, roller or spray. Please refer to “Coatings application” section for further details
- b) Ideal application temperature falls between 15°C and 25°C, although application is possible between minus 10°C and plus 30°C; relative humidity must be below 85%.
- c) Brantho-Korrux 3-in-1 colours and Branth Orange Penetration Primer are all single pack materials. Stir thoroughly prior to use. The material will be touch-dry in 20 to 30 minutes, depending upon the temperature of air and substrate. Full hardness should be reached in three days. Practical coverage is 6m<sup>2</sup>/litre. These products must only be diluted with Branth Kombi Thinner or Branth Spezial Thinner.

d) In accordance with health and safety legislation, any materials suspected of containing toxic ingredients such as lead or chromate must be dealt with in the appropriate manner. For example, dust and debris such as that generated by blasting must be contained and disposed of as stipulated. Operatives must equally be protected.

e) The applicator is to abide by all health and safety instructions issued by the relevant manufacturer. Ensure that each operative has received and understood all health and safety information before commencement of work. If the relevant MSD sheets are not to hand, please request them. Unless we receive a request to the contrary, health and safety data sheets will accompany the goods upon initial delivery.

f) Further information and assistance is available upon request, and from [www.branthokorrux.co.uk](http://www.branthokorrux.co.uk) or contact Independent Protective Coatings Services Ltd Tel. 01843 845472.

Colour: Black