Restoration of the Lost Floodplain
Thames Landscape Strategy in Action!

A project proposal for the Thames Landscape Strategy Partnership
April 2010
‘To work in partnership to re-create, conserve, connect and enhance the natural character of the floodplain in response to climate change for people, wildlife and occasionally water’.
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Background

The Arcadian Thames

Between Hampton and Kew in a magical corner of South West London the River Thames gently meanders around the base of Richmond Hill, for twenty miles flowing through an Arcadian landscape of parks, palaces and historic riverside settlements unequalled in any other European capital city. That so much of open space has survived to the present day is no accident. Generations of people have shaped, cared for and protected this remarkable landscape leaving a unique legacy that today forms the largest connected open space in London, ‘a countryside in the city’, offering un-rivalled public access and habitats for wildlife to flourish.

Royalty were quick to appreciate the advantages of the Thames and by the end of the 17th Century successive generations of monarchs and aristocratic patronage had shaped the river landscape creating great palaces, gardens and parks linked to each other by a network of avenues, riverside villas and water meadows. During the C18th this concentration of wealth and power together with the area’s natural beauty inspired painters, poets, writers and visionaries like Alexander Pope who, writing from the grotto of his classical villa at Twickenham, influenced world attitudes to landscape with his idea to ‘Consult the genius of the Place in all’. A radical new way of perceiving beauty in the landscape was born along the banks of the Thames ushering in a new age where the boundaries between art, nature, poetry and landscape were merged. Arcadia was seen as an idyllic rural paradise, a place where humans and nature co-existed in perfect harmony, ideas that would ultimately lead to the formation of the English Landscape Movement. In the C19th the delights of the Arcadian Thames were opened up for the enjoyment of the public. The once privileged landscape became the ‘playground’ for the capital where Londoners came to walk, relax or simply mess about on the river. Arcadia was democratised! A century ago however, the now world famous landscape was almost lost as suburbia crept relentlessly up the river. It was only the successful ‘Indignation!’ campaign led by local people to halt the proposed development that saved the View from Richmond Hill and much of the riverside open spaces that are enjoyed today.

The Thames Landscape Strategy

The Thames Landscape Strategy (TLS) is a not-for-profit organisation established in 1994 to understand the events of the past that shaped this river corridor in order take them full circle to conserve, enhance and promote the landscape for the next 100-years. The TLS brings together a partnership of riparian owners alongside almost 200 local groups in order to implement a shared vision for the river corridor. The Strategy implements a range of projects and has to date raised £15M for river based schemes.
THAMES LANDSCAPE STRATEGY
Hampton to Kew

Thames Landscape Strategy in Action Restoration of the Lost Floodplain
1.0 Summary

The ‘Restoration of the Lost Floodplain’ sets out a way forward to adapt our fragile habitats along the Arcadian Thames to anticipated changes in the world’s climate. It is now commonly agreed that flood risk will increase over the next century, temperatures will rise, rainfall and storm intensity will increase and that the likelihood of summer droughts will intensify. This will have an inevitable affect on riparian wildlife and human use of the floodplain. Established habitats will begin to decline and species will need ever larger areas of linked natural open space to adapt and move about in if they are survive. Increased likelihood of flooding will bring extra pressure on emergency services and local emergency planning to ensure that people and property remain safe as the climate changes. Established recreational patterns will be blocked by rising waters putting the long-term viability of wider sustainable transport and visitor initiatives at risk.

The ‘Restoration of the Lost Floodplain’ proposes the re-creation, restoration and re-connection of a naturally functioning floodplain to sustain a mosaic of different habitat types implemented at a landscape scale. By restoring the natural functions of the floodplain spaces can be made for wildlife to flourish whilst allowing water to be stored during floods and slowly released as river levels drop. Making space for water in a managed and controlled way can keep people and property safe.

New footpaths, cycle routes and informal trails can be put in place including the provision of signage, dry and safe routes for times of flood. These will be set within a framework of a restored historic landscape of fields, creeks, ponds, avenues, woodland, grazed wet meadows and native hedges. By restoring our lost floodplains we can conserve the character of the countryside in the city that makes the Arcadian Thames a potential World Heritage Site - spaces that work for people, for wildlife and for water whilst adapting to climate change.

‘The Restoration of the Lost Floodplains’ is intended to be ground-breaking and will encompass and assist in the delivery of many different schemes and partner initiatives such as Environment Agency’s flood risk management plans TE2100, Water Framework Directive, Transport for London’s ‘Smarter Travel’ initiative, green transport projects, visitor management, landscape restoration and the Living Landscapes plan.

The TLS works across local authority and regional boundaries bringing together a partnership between riparian owners and local communities and interest groups. It is ideally placed to develop a holistic masterplan for the floodplain and implement these policies on the ground with a successful £15M track record of project work.
2.0 Introduction

This scoping document is written by the Thames Landscape Strategy and is intended as an introduction to the proposed TLS ‘Restoration of the Lost Floodplain’ scheme – an umbrella initiative that brings together a series of inter-related projects to manage the connected open spaces of the Thames floodplain (between Hampton and Kew) as climate changes.

The report introduces the policy background which underpins the ‘Restoration of the Lost Floodplain’ project including GLA’s climate change adaptation strategy, DEFRA’s strategy for flood and coastal risk management ‘Making Space for Water’ and the Water Framework Directive and other Environment Agency strategic projects and plans such as TE2100. The way that these important policies can be implemented on the ground is explored linking these initiatives with other goals and aspirations such as English Heritage’s ‘People and Places’ the ‘Living Landscapes’, the Mayor for London’s ‘Smarter Travel Initiative’ and borough aspirations.

Following agreement by the TLS partnership of the ‘Restoration of the Lost Floodplain’ a more detailed action plan will be produced setting out a clear framework for the future. From this it is intended to begin the fundraising process including EU Life+ funding, Heritage Lottery Fund, statutory funding and grant giving trusts. A separate proposal has been put together for initial funding of a full time (one year) officer post to develop the proposed action plan and outline funding bid.

2.1 Vision

The River Thames is London’s best known natural feature. It twists and turns through the capital, changing from a freshwater river at Molesey into a saline estuary in the east. Between Hampton and Kew in the upper reaches of London’s river, there are a remarkable number of connected open spaces – a landscape of unique historic, natural and cultural significance that has been celebrated for over three hundred years as ‘The Arcadian Thames’ – meaning a rural paradise – yet located only ten miles from Piccadilly Circus. The Arcadian Thames is a place where humans can get close to nature.

Since Neolithic times, this remarkable landscape has been shaped by human activity – modifications to the floodplain responding to the changing needs of local populations. Wildlife has been quick to adapt to these changes taking advantage of man’s modifications to the natural environment whilst recreational activity has constantly evolved as new stretches of riverside have been opened up.

Many of these changes to the floodplain, particularly those taking place after WW II however, have seen a considerable reduction in the floodplain’s capacity to accommodate floodwater – the traditional water meadows and wetland habitats (sustained by floodwater) being replaced by new environments or housing. To a
large extent this has not been a problem particularly since the
construction of the Thames Barrier which has been successfully used
to control floodwater since its opening in the mid 1980’s. Recreation
has continued and wildlife has adapted to the new environments.
Climate Change however, will alter the balance.

It is now widely agreed that climate is changing. Over the next
century these patterns are set to intensify. Temperatures are to
increase affecting established wildlife patterns and sea levels are set
to rise and the intensity of storms to escalate considerably – both
factors putting the floodplain at increasing risk from flooding. In
response a radical new approach to managing the floodplain is being
proposed by DEFRA ‘to make space for water’ in order to reduce
the risk from a flood event. On the Thames, the Environment
Agency is developing a number of strategic flood risk management
plans to understand what the flood risk is and how best we can adapt
to climate change. For the tidal Thames this plan will be the
outcome of the Environment Agency’s TE2100 study.

At a local level, the TE2100 study (although still in draft form) has
identified that the river corridor between Hampton and Kew is at
considerable risk from flooding and that this risk is likely to increase
with time as climate change accelerates. We can expect that a
greater part of the floodplain will be inundated with water in the
future and that this flooding will happen with increasing frequency.
At present much of the floodplain is simply not ready for this
sustained inundation. Historic landscapes and habitats could be put
at risk, significantly disrupting established visitor movement patterns.

Wider changes in climatic patterns will affect established wildlife
sites. It is anticipated species will start to migrate across regions
searching out new habitats as existing homes evolve in response to
changing conditions. Open space will be at a premium as space is
needed for water and increases in temperature allow more people to
enjoy the great outdoors. The urban heat island effect will lead to
warmer nights and daytime summer temperatures of 30 degrees are
predicted to be the norm by the middle of the C21st. The use of
open space and in particular the towpaths will be further strained as
sustainable measures to mitigate climate change are implemented
such as walking and cycling schemes and green transport plans.

Without careful planning now there will be ever increasing pressure
on our floodplain open spaces as climate changes and measures are
put in place to mitigate and adapt. The long-term success of many
of these initiatives could be put at risk unless integrated plans are
prepared for the floodplain. ‘Restoration of the Lost Floodplain’
provides a holistic way forward to adapt the floodplain in response to
climate change that would make spaces for water to go during a
flooding event whilst enhancing open space for wildlife and people to
use. In this way there is significant potential to optimise the use of
the floodplain for flood risk benefit. The physical space that can be
made for water will be increased whilst optimising the way in which flood waters are stored and released.

The ‘Restoration of the Lost Floodplain’ provides a unique opportunity to restore the natural rhythms of the river that would enable habitat creation at a landscape scale allowing wildlife to flourish and move about in. These new permeable places would consist of a mosaic of habitats and land use types, many based around historic land-use patterns that sustain a diverse range of ways for people to use and navigate through the landscape even in times of flood and drought. The inundation and release of water across these sites would need to be managed strategically and linked to flood forecasting and planning to enable flooding to be carefully controlled across a large area both in terms of available storage and the timing and flow rate of releases. A long term management plan that proposes the establishment of a social enterprise will be developed to provide educational and economic value from active management of the floodplain environments.

The ‘Restoration of the Lost Floodplain’ allows for communities and local people to be involved in the development of the project and the future long term management of the environment at every level particularly through education and volunteering activities. At the projects core is the principle that the floodplain is our most important asset in managing flood risk – places for people to enjoy, for wildlife to flourish and, when needed, for water to go. We need to adapt the landscape to climate change rather than fight the forces of nature. The ‘Restoration of the Lost Floodplain’ allows for the TLS partnership to lead the way in the adaptation of the landscape across traditional regional and borough boundaries, to climate change and in the implementation of national and local policies whilst ensuring that the character of one of the world’s most significant cultural landscapes is sustained into the C21st.

2.2 Project Goal
The goal of the ‘Restoration of the Lost Floodplain’ can be summarised as follows:

To work in partnership to re-create, conserve, connect and enhance the natural character of the floodplain in response to climate change for people, wildlife and occasionally water.

2.3 Aims

• To Restore The Natural Morphology of the Landscape

To restore and recreate the natural character and functions of the floodplain where possible incorporating lost historic elements and natural river features and processes

• To Achieve Floodplain Optimisation to Manage and reduce Flood Risk
To restore the natural functions of the riparian landscape in order to maximise the floodplain’s capacity to store and release water in a managed way.

- To Create a Living Landscape

To restore, re-create and re-connect a mosaic of linked habitats that can adapt flexibly to climate change, that are natural to the floodplain and are sustained by the rhythms of the river in order for a diverse population of wildlife to move about in and flourish

- A Sustainable Well Managed Landscape

To put in place a long-term management plan through the creation of a social enterprise to manage to new landscape

- A Connected Landscape for Everyone to Safely Use, Enjoy and Understand

To put in place a series of measures to facilitate recreational patterns and reduce the risk from flooding to personal safety. To increase understanding and use of the floodplain by all sectors of the community, visitors and tourists (during normal flow, in a flood event and in periods of drought) that is legible and accessible

- World Heritage Site Status

To continue to restore the Arcadian Thames to a level that it can be nominated for UNESCO World Heritage Status in recognition of its unique contribution to world culture – a visitor attraction in its own right, a place to escape the hustle and bustle of modern city life and a place that people want to live in

2.4 Project Outcomes

To identify an ecologically viable unit to provide the geographical scope of the project

To adapt to climate change on a landscape scale

To maintain the countryside character of the towpath and floodplain

The creation of a connected and permeable landscape – connected for people, for wildlife and through historic and cultural associations

To put in place a series of landscape enhancements to restore the natural features of the floodplain that work in drought and flood

To increase the capacity and function of the floodplain for water storage during times of flood ensuring that people remain safe at times of inundation.

To reduce the reliance on heavily engineered flood defences eg. Barrier and walls, to manage rising water levels through the century.

Establishment of a mosaic of inter-connected habitats including wetlands, scrub, woodland, meadows, grass and standing water

To restore the natural ecological function of the floodplain
To create sustainable wildlife corridors outside the ecological viable area to the Rivers Mole, Hogsmill, Crane, the downstream Thames (Wetlands Centre Barnes) and upstream river

To control many of the invasive species found along the river

To establish new ways to interpret the landscape

To restore lost historic elements of the landscape including field patterns, avenues, creeks, ponds, stock fencing and native hedgerows

To establish a hierarchy of footpaths and cycle routes that criss-cross the landscape that are appropriate to the pastoral character of the landscape

To establish a network of safe dry routes for use during periods of flood – to include signage. To include ‘primary’ or linear routes linking riverside settlements and attractions and ‘secondary’ routes that lead the visitor safely from floodable areas to the main dry routes

To reduce the conflict between users especially cyclists and walkers – in some sensitive locations positioning designated cycle routes away from the towpath leaving a quiet footpath along the river

To create a legible landscape particularly through the use of materials and mental mapping processes - view lines

Construction of styles, gates and footpaths to sustain use through a managed landscape

To considerably improve the management of the floodplain

To explore the establishment of a social enterprise company to manage much of the floodplain and riverside open spaces

To allow for commercial cropping of the wildlife areas. To establish traditional agricultural practices back to the floodplain

To farm water – harvesting during flood, releasing during droughts

To foster healthy living and personal safety

To establish a floating herd of cattle to manage grazed wet meadows

To increase public participation and understanding of their river environment through use, education, signage and interpretation

To aid tourism in the area by adding to the visitor experience and the ways that the visitor moves through the landscape between attractions

To make the Arcadian Thames a recognised visitor attraction in its own right

To put in place a series of measures to promote the open spaces and unique characteristics of the Arcadian Thames as a space to come and relax during the 2012 Olympics

To inform the development control and planning framework process
To work with Boroughs and Emergency Planners to implement Making Space for Water policies

To implement on the ground local and national policy and initiatives including TE2100, the Water Framework Directive, Smarter Travel, biodiversity action plans and Legible London.

3.0 Strategic Background

Before setting out the ‘Restoration of the Lost Floodplain’ project it is important to understand the policy background that has led to the production of the report including: DEFRA Strategy for flood and coastal risk management - Making for Water, Water Framework Directive, TE2100, Living Landscapes and Regional and Local Policy

3.1 DEFRA Making Space for Water

The current DEFRA guidance for flood risk management in response to climate change is called ‘Making Space for Water’. Making Space for Water proposes a series of measures to manage the risk and the consequence of any given flood event in a sustainable way through the following measures:

- Manage the floodplain more sustainably - repair & maintain the existing defences
- Living with Water! Changing the way that we live and build in the flood plain - Development control & spatial planning
- Living with water! - Emergency Planning & Information Provision
- Reduce the effect of urban runoff - sustainable urban drainage
- Controlled Inundation of specific areas
- Restoration of the natural floodplain including inter-tidal habitats, mud flats, salt marshes and wetland habitats - multi-use spaces for people, wildlife and occasionally water!

This combination of measures is a powerful toolkit to manage flood risk that can be used to help off-set the consequences of rising water levels, minimising the need for major new flood defence walls or the construction of additional flood barrages in the future.

3.1.1 Living with Water! ‘Development Control’

To adapt to climate change the way that we plan, build and live on our floodplains will be necessary. Working through the development control process new development in the floodplain should not take away the capacity of the land to store water and both buildings and spaces will need to be designed to work with a flood (set out in PPS25). Existing properties will need to adapt as climate changes. Householders and businesses located in the floodplain should take

Flood boards have been a part of Thameside life for centuries

Many riversides already flood at high tide - methods have been adopted to live with this inundation
advice on how to minimise the consequences of being flooded. Flood boards on many buildings in the floodplain could become the norm.

3.1.2 Living with Water! ‘Emergency Planning’

As climate changes and sea levels rise people living and working in the floodplain must be prepared for what to do in the event of a flood. Emergency planners need to be prepared for a flood and people who live in the flood plain must be given the information on what to do in a flooding event and plan what their response will be when the flood water’s rise. Floodplain environments need to be designed to minimise the impact of flooding events.

3.1.3 Sustainable Urban Drainage

Reducing urban run-off and therefore the amount of water that enters the water courses is a crucial part of the making space for water approach to manage flooding. Every household can play their part by putting in place measures to recycle rain water before it runs down the drain - for example by not paving over front gardens or adopting rain water harvesting.

Policies to encourage the use of sustainable urban drainage should be adopted by all local authorities and developers.

2.1.4 Restoring Floodplains and Making Space for Water

Making space for water – possible places for controlled inundation
A number of key sites across the UK – both along river courses and in coastal areas – have been identified by the Environment Agency through the development of strategic flood risk management plans for floodplain restoration. At these places open space can be used to take the top off a flood spreading the water across a wide area reducing the risk both locally and elsewhere. A number of key spaces have been identified for this approach along the Thames estuary particularly downstream of the Thames Barrier and in west London where tidal and freshwaters meet.

Floodplain restoration can be on a small scale. Every new space that is made for water helps. It is important that we do not forget the tributaries such as the Hogsmill and River Crane.

3.1.5 Restoration of the Lost Natural Floodplain

Many flood plains in the UK and particularly those in south east England have been heavily modified in response to previous policies to defend places from flooding and through encroachment by housing and industry. These actions have significantly reduced the ability of the floodplain to function in a natural way.

A key element in the Making Space for Water agenda is to restore floodplain back to a more natural state particularly lost wetland habitats and natural riverbanks. These places would function for water, for wildlife and for people. This differs from controlled inundation in that many of these spaces are within sites that flood already – i.e. capacity does not need to be created. This policy links directly with the Water Framework Directive which sets out ways to achieve good ecological status for all water bodies.

A good example of how this policy would work in practice is found at the Old Deer Park in Richmond. The park is an area of amenity grassland that floods during spring tides.

Whilst the space can be used for water during these flooding events it does not however, function as floodplain having little wetland habitat and is a barrier to recreational use during the periods of flood.
3.2 The Water Framework Directive

The Water Framework Directive (WFD) is a new and exciting piece of EU legislation that joins together existing water legislation with the aim to deliver long-term protection of our rivers, estuaries, coastal areas, groundwater and wetlands, to achieve the best possible environment for people and wildlife.

The Directive that sets out a way forward to achieve ‘good ecological status’ for all waterways, including physical modification and alien species. The Directive looks to local solutions to manage waterways and wetland areas set within a wider catchment wide framework.

In England, the WFD is being put together by the Environment Agency in partnership with a series of stakeholders. The WFD will develop six-yearly river basin management plans with the ultimate
aim of achieving good ecological status for all water bodies. Flooding and climate change will be accounted for.

The draft River Basin Management Plan will be published in September 2008 and will include a series of measures and actions in order to achieve its aims. The ‘Restoration of the Lost Floodplain’ provides an excellent opportunity to implement many of the WFD proposals for the Thames between Hampton and Kew. The TLS ‘Restoration of the Lost Floodplain’ would be a trailblazer in this area that could be used as a model to follow elsewhere on the Thames.

3.3 Flood Risk Management and the River Thames - TE2100

Flooding along the River Thames is not new. Historical documents record catastrophic floods from Saxon times to the present. Over the past century however, flood risk has increased significantly. This is caused by many different factors notably climate change and the encroachment of the floodplain.

The traditional approach to protect London from the Thames has been to construct higher and higher flood defences usually in response to a flood event. The photo (below) demonstrates ever-increasing layers of upward construction of a flood wall along the Thames. As climate change accelerates however, this option will no longer be sustainable as walls will have to constructed higher and higher that would eventually cut the river off from the land.
The TE2100 project proposes a new approach to manage flood risk along the tidal Thames that follows the DEFRA Making Space for Water agenda.

The Environment Agency led TE2100 (Thames Estuary 2100) project will develop a Flood Risk Management Plan for London and the Thames Estuary for the next 100 years. TE2100 will include:

- An investment programme of strategic flood management options covering short, medium and long term time horizons
- Guidance for spatial and emergency planners on floodplain management
- A system of “opportunity banking”, to enable areas with good FRM or habitat potential to be identified and safeguarded
- Adaptability: the production of an adaptable plan to the changing environment over the next 100 years.

This study will be:

- Risk/consequence based
- It will respond to the changing needs of the estuary rather than reacting to a flood event
- It will consider how London has and will develop
- It is sustainable, considers climate change, rising sea levels, ageing of flood defences, socio-economic factors and new development in the floodplain
- It will include a wide range of stakeholders.

TE2100 was launched six years ago. Following an initial scoping exercise and a series of studies into future consultation techniques, the Ham Lands Floodscape study formed part of this stage.

Next TE2100 calculated what is at risk and how London is protected at present (a detailed study of existing flood defences, barriers and gates). This enabled the production of detailed flood risk maps. From this study it was possible to predict what the consequences of the risk from flooding are and could be in the future.

At present the Environment Agency is reviewing the consequences of various socio-economic models and completing final flood models. This will allow for future management options (such as floodplain restoration) to be identified. It is anticipated that the draft plan will be launched for consultation in April 2009 and submitted to HM Government in early 2010.

A series of estuary wide and local options have been proposed for 23 ‘Policy Management Areas’ to deliver long term flood risk management policies. A combination of different options have been developed and appraised for different management areas.
TE 2100 – Accounting for an Uncertain Future

Whilst it is possible to predict what is at risk and what are the consequences of that risk for many factors (such as the state and effectiveness of the current flood defences and the ways that adjoining strategies would affect the Thames) it is not possible to predict all factors with the same degree of certainty. The way that climate is likely to change with time for example, is un-certain.

This uncertainty has to be accounted for in planning future flood risk management. The main drivers of physical flood risk sources in order of uncertainty are:-

- Waves
- Flash flooding
- Fluvial Flows
- Sea Level Rise
- Surge
- Joint Probability

The TE2100 model allows for all these uncertainties to be factored into a single masterplan to allow for different flood risk management routes to be taken over the coming 100-years depending on how climate changes.

One example of un-certainty is storm surge prediction. These vary widely but each has to be accounted for so that an adaptable plan to manage flood risk can be produced – a plan that can evolve with time responding to how climate changes.

Another example is sea level rise. Due to uncertainty TE2100 is using four different sea level rise scenarios. These are:

- DEFRA Lowest expected sea level rise 0.91m – (current DEFRA level)
- UKCIP Med High
- High +
- High ++ 4.2m (maximum expected sea level rise)

Because of the uncertainties that are involved in predicting the affects of climate change, TE2100 proposes a flexible model (with a portfolio of measures) that can be adapted (over time) depending on how climate changes to keep the risk from flooding below an acceptable level of risk through the intervention of a series of different measures (over time).

The measures are designed to keep the risk from flooding below an agreed (acceptable) level. This is the beauty of the TE2100
approach – a flexible plan that can follow many different paths responding to climate change rather reacting against it. This series of measures include:

- New tidal barrages or barriers/adaptation of existing barriers
- Controlled inundation
- Restoration of the floodplain
- Attenuation of upstream flows – Sustainable urban drainage
- Spatial planning
- Emergency planning

The TE2100 Model proposes a flexible approach to FRM adopting a series of measures over time to keep the consequence of flooding below an agreed acceptable level of risk.

The Environment Agency has identified that under the Government’s current climate change scenario (a water level rise of 0.94m) the risk from rising water levels can be managed through this century across the Thames tideway through the use of an adaptable plan as proposed under TE2100 (this could change however, if for example, sea levels rise more quickly than is currently anticipated).

From this research it is not expected (in the short-term) that any major upgrade to the current system of defences or a major new engineering project will be needed before 2030 as the Thames Barrier, with some adaptation, will continue to provide protection and existing flood defences have a greater safety margin than previously understood. The model does stress however, that flood risk will continue to rise over this period.
TE2100 has identified a number of routes to get us through the century. Different routes can be chosen over the next 100 years in response to climate change to keep the risk from flooding below the acceptable level.
3.4 Living Landscapes

A ‘Living Landscape’ is a new approach to manage land in order for wildlife to adapt and survive as climate changes. Increasingly, wildlife will need places that are large enough to move naturally through – ‘climate corridors’ as environments change at ever-increasing rates. These permeable places, also must be large enough to sustain a variety of species. This can only be achieved through the creation of a mosaic of habitats in an ecologically viable unit (called a ‘Strategic Nature Area’. In this way open space can be linked together to create one large ecosystem. Wildlife can move from place to another, through different habitat types and from area of similar habitat to another significantly reducing the potential for extinction. For this to be achieved obvious movement gaps such as town centres, roads and housing need to be bridged.

This is habitat restoration at a landscape scale!

In this new landscape, the natural processes that drive the ecology of the area will need to be re-created to sustain habitats particularly those processes associated with the fluctuations of the river – whether in flood, in drought or at normal flow. This needs to be across a large area. In the long-term the restored landscape will be a self-sustaining ‘whole’ controlled by the natural cycles of the river in a way that sustains a range of different wildlife populations set within a connected mosaic of habitat types managed in a traditional way.

3.5 Regional and Local Initiatives

There are many other national initiatives and policy (such as the draft Marine Bill, Learning Outside the Classroom scheme and People and Places to name just a few) that are relevant to the Restoration of the Lost Floodplain project. At a local level many of the TLS partners have a series of initiatives to encourage the sustainable use of the landscape linked to wider aspirations such as green travel, transport plans, historic restoration, biodiversity action plans and mitigation of climate change including:

- Mayor’s Plan for London Blue Ribbon Annex & the South East Plan
- South London Tourist Strategy
- Ham Avenues Restoration Management Plan
- Smarter Travel
- Richmond upon Thames Towpath Plan
- Borough LDF & UDP policies and Area Action Plans

If these are to be successful in the long term it is important that the infrastructure needed to manage flood risk and restore the floodplain is planned first to inform the future direction of these wider initiatives. In this way the future movement of people, wildlife and ideas across a landscape will be sustainable. Integration under a holistic masterplan is crucial to success.
4.0 Flood Risk Management & the Arcadian Thames (Hampton and Kew)

4.1 Floodplain Maps

The following diagrams are taken from the Environment Agency and show the areas at risk from flooding. A key is provided at the bottom of the next page.

- Brentford and Kew
- Isleworth
- Kew Gardens
- The Old Deer Park, St Margarets
- Twickenham
- Richmond, Ham, Marble Hill
Dark blue = Area within 1 in a 100 year flood area
Light blue = Area within a 1 in a 1000 year flood area
Hatched Areas = Land within the 1 in a 100 year flood area that is currently protected by a flood defence or the Thames Barrier.
4.2 What is at Risk? The Implications of TE2100 for the Floodplain between Hampton & Kew

The Environment Agency has carried out many different studies in the preparation of TE2100. Early drafts of the plan demonstrate that the TLS area currently experiences more frequent flooding from tidal and fluvial water than than other parts of London. This is because much of the floodplain in the TLS area is low lying and formed of open space or low density housing. Consequently the flood defences between Hampton and Kew are not constructed to the same level of protection as more urban and populated areas downstream where the consequence of a flood would be much greater. Most of the time this does not cause significant problems as the (TLS) floodplain is largely open space but inevitably on each high tide or during a flooding event there is disruption to recreation and much flotsam and jetsam is deposited over the low-lying towpaths. In the event of a significant flood properties that have been built in the floodplain would be affected – including those on the tributaries such as the Crane, River Mole and Hogsmill.

Early versions of TE2100 also show that much of the floodplain in the TLS area still functions as floodplain in that it would be inundated during a 1 in 100 or a 1 in 1000 flood event without any modification to existing flood defences or the lowering of land for controlled inundation. This is due to the low lying nature of the land and that the flood defences are relatively low. Many structures (such as riverside walls and revetment banks) are often mistaken as flood defences when in fact they are not. These structures have usually been put in place to aid access along the river – the actual flood defence is often a simple contour line set well back from the river’s edge. Analysis of the flooding data shows that it is the controlled operation of the Thames Barrier that stops these low lying floodplains from being inundated by water (at present) during a flooding event.

TE2100 has indicated that the greatest risk from flooding in the TLS region would be caused not from a tidal storm surge moving upstream but from a fluvial flood moving downstream from the upper reaches of the river coinciding with a high tide. This could cause flooding across the floodplain particularly if the fluvial flood coincided with a spring high tide. In this event, water moving downstream of Teddington Weir would be blocked by the tide (effectively the river would already be full due the high tide). Inevitably water would then rise and spread across the floodplain.

To reduce the consequence of this type of flood event the Environment Agency use the Thames Barrier to control water levels. The barrier is closed to prevent a high tide moving up the tideway keeping water levels between Teddington and Woolwich low. The flood water moving downstream of Teddington Weir fills this space before being let out to sea on the ebbing tide when the
barrier is re-opened. The Thames Barrier has been used many times already to prevent this type of fluvial flooding effecting the TLS area.

4.3 Proposed Changes to the Operation of the Thames Barrier - implications for the River Thames between Hampton and Kew

TE2100 indicates that this use of the Thames Barrier to control fluvial flooding in the tideway could be unsustainable in the future as climate change accelerates. The barrier will increasingly be needed to respond to tidal surges and higher tides coming up the river that could affect the lives of millions in the more populated areas further downstream. The barrier has a finite number of closure times per year to reduce wear and tear and importantly the reliability of the structure (approx 50 - 70), each closure has an impact on the use of the river for navigation and for unrestricted access of the riverside. This proposal could have many implications for the management of the floodplain across the TLS region which would inevitably be inundated much more regularly than at present (as climate changes and the barrier operation is modified).

This said, TE2100 has demonstrated that the consequence of this increasing risk can be managed to a large extent by ‘making space for water’ – a suite of interventions ranging from rain water recycling, SUD, emergency planning, controlled inundation of riverside spaces to the construction of a new tidal barrier or barrage (in the worst case scenario). It is important to note that many of the most effective interventions that will take place to reduce the risk from flooding in the TLS area (such as controlled inundation) will take place a long way upstream and downstream of Teddington and on the tributaries (for example on the outer estuary). This will reduce the amount of water in the Thames that enters the TLS region in the first place either from a fluvial flood or from a tidal surge.
Between Hampton and Kew a series of measures for controlled inundation can be put in place including the lowering of land in the floodplain to make space for water. By making space for water the use of the floodplain for flood storage can be optimised. When viewed as part of the wider strategy to increase capacity across the Thames basin this will have an impact on lowering the risk from flood water levels. The stored water can subsequently be slowly released in a managed way adding further benefits. This said, because of the nature of flood risk in the TLS area the impact locally will not be enough to stop large areas from flooding.

The Environment Agency is currently refining and appraising the local options for the TE2100 plan. A number of options are being considered for the TLS area to meet the long term policies which have been identified. Much of the TLS area has been given a policy to manage future flooding through maintaining current risk levels through floodplain management. Acknowledging that the most sustainable option in the future to manage rising water levels could be to increase floodplain storage and keeping people safe by robust spatial and emergency planning.

The TLS ‘Restoration of the Lost Floodplain’ can deliver many aspects of this more sustainable approach to future flooding advocated by the TE2100 project. It looks likely that although the river between Hampton and Kew will be at increasing risk from fluvial flooding the consequences of this (in terms of economic benefit – i.e. the amount of property that would be given additional protection for the money that would need to be spent) will not be sufficient to justify the expenditure needed to improve and construct new flood defences. Also, the landscape value and importance of the river between Hampton and Kew for recreation and leisure would be significantly impacted if new flood defences were built. As such local action to implement many of the TE2100 goals is important.
Case Study – To Construct Walls or Not? A comparison between Richmond Virginia and Richmond upon Thames

The traditional approach to flood risk management is to build higher and higher river walls in response to a flooding event. Making space for water calls for a new approach to flood risk management. In downtown Richmond Virginia flood defence walls have been constructed along certain stretches of the beautiful James River that flows through the heart of their great city. The resulting flood walls are massive (up to 20m high in places). During flood events enormous gates are closed to channel flood water through the city centre – particularly following hurricanes.

Whilst the flood walls have proved very effective in protecting the city from river flooding they failed to stop the City from devastating flooding caused by surface run-off during heavy rainfall. This water had no-where to go when the flood gates were shut (which cut off the natural flow to the river) and simply backed up on the land side of the flood defences. During normal conditions the flood walls effectively cut the river off from the town. Working against nature rarely works. The implications of adopting a similar approach for the Arcadian Thames would be quite devastating. The following artists impression demonstrates the required height for a flood defence wall in Petersham if sea levels rise to the minimum expected level.
4.4 Historic Decline of ‘Naturally Functioning’ Floodplain between Hampton and Kew

The way that the floodplain accommodates water during a flooding event has been significantly changed over the past century. In many places the land has been built up reducing the potential for capacity. In some cases land has been raised to such a level that it has effectively been taken out of the floodplain – i.e. it will no longer flood. In other instances, the land has been raised but is still low enough to flood during a 1 in 100 or 1 in 1000 event. In these places the floodplain could be used but is far from being optimised. Often these places have been so physically modified that they could no longer function if it was flooded. Modern drainage, land-use management practices and the operation of the Thames Barrier to control a flood event have significantly altered flooding patterns. As much of the floodplain has not flooded for several generations.

The decline in the way that the floodplain functions has seen a corresponding decline in traditional wetland habitats and historic landscape patterns. Muddy riverbanks, beaches, hedgerows, avenues and wet meadows found along the banks of the Thames have gone – either built on, modified or given over to amenity grassland, golf courses and ornamental gardens. In other areas, large swaths of ‘natural’ open space (although still ecologically diverse) are managed in a way that is out of keeping with a floodplain location being more suited to a drier place.

This process has taken place relatively recently – up until WWII many of the riverside open spaces were managed in a way that was in harmony with a floodplain location. At Ham Lands for example, the pre-war grazed wet meadows and wetlands were first dug for gravel then artificially built up with rubble (in some places by 6m) changing traditional environments, hydro morphological patterns and recreational use.

Over the space of a few decades this historic decline in the traditional riverside landscape has left a legacy of open spaces that do not function as natural floodplain. As climate changes, the consequence of a flood would have a large impact on wildlife, habitats and recreational use of the riverside, with many of the towpaths and riverside parks under water for a considerable amount of time. At worst lives could be put at risk.

If the landscape is to adapt to climate change and space is to be made for people, wildlife and occasionally water then the natural floodplain needs to be restored.

If the character of the cherished landscape that makes the Arcadian Thames is going to be conserved for future generations to enjoy we need to act now in order to adapt to climate change. Doing nothing is often the quickest way to lose what we have.
5.0 Restoring, Re-connecting and Re-creating a ‘Naturally Functioning’ Floodplain between Hampton and Kew

By embracing the DEFRA Making Space for Water agenda, the recommendations of TE2100 and the EU Water Framework Directive we can set in place a pro-active approach to adapt to climate change rather than reacting in an ad-hoc way.

By restoring the lost floodplain the potential flood risk benefit from optimising the use of the floodplain could be significant. The availability for water storage could be maximised reducing the flood risk elsewhere along the Thames. This would include both the lowering of certain pockets of land to a more natural level and the restoration of functioning floodplain in areas that do not need to be lowered – i.e. they are at a height that would already accommodate flood water (particularly following proposed changes to the operation of the Thames Barrier), but are so heavily modified that they do not currently function as a floodplain.

By making space for water riverside lands can be restored to a more natural state to create places for water to go during exceptional flood events. Inundation would be carefully managed by a network of sluices, controls and channels linked to a real time flood forecasting and emergency planning. This would have the added benefit of controlled release – both in terms of timing and flow rate. In this way the land would only be flooded during those periods that it was needed for water, the rest of the time the open spaces would be high and dry for people to use and wildlife to live.

By restoring the natural fluvial processes to the floodplain a mosaic of wetland and other habitats can be created for wildlife to flourish in. By identifying enhancements over a wide and inter-connected area a living landscape can be created with huge long-term benefits for wildlife. Footpaths, cycle routes and recreational use can be enhanced in a way that was appropriate for the rural nature of the landscape, adding considerably to the visitor experience and understanding of the place. Wider improvements to management would have far reaching benefits and local people can be involved much more in the day-to-day life of the environment.

The Restoration of the lost Floodplain project would lead the way for others to follow and could un-lock significant sources of (hard to reach) external funding that would in turn allow many wider initiatives to be successful in the future. - leading the way for others to follow.

In restoring the lost floodplain it will be important to consider wider impacts on people and wildlife - to restore the flood plain necessitates changing established land use patterns and recreational routes. This has been done many times before – the landscape is a dynamic, living force that has constantly changed over time. Difficult choices will need to be made but by beginning now we can phase change over a
long period of time minimising disruption to wildlife and recreational activity and allow for the views of local people to be accounted for at every stage.

6.0 What Needs to be Done to Restore the Lost Floodplain

6.1 Making Space for Water during a Flood Event

The first stage in the restoration of the lost floodplains would be to establish exactly which areas could be lowered for flood storage and those areas that are best suited for controlled inundation during a flood event. A considerable amount of work is still needed before any specific locations can be proposed although a good indication of the likely places is provided by the Environment Agency’s flood risk maps. These indicate the areas within the 1 in a 100 year flood zone, the 1 in a 1000 zone and the areas that are currently afforded protection by the Thames Barrier and are likely to be more at risk in the future.

It is likely that detailed flood modelling will be needed and this should be carried out by an appropriate consultant.

Having identified the appropriate places for water to go ‘The Restoration of the Lost Floodplain’ scheme would identify the infrastructure that would be needed to facilitate flood events. This could include sluices to bring the water under the towpaths (so not to disrupt their use or undermine their durability), culverts, creeks and streams to channel water safely and smoothly to the floodplain and back to the river quickly in a controlled manner once a flood event is over. Areas that are suitable for water storage over a longer period (days or weeks) to be released when river levels have dropped will also need to be considered. Consultation will be key in these places.

In many cases, making space for water will cross land ownership boundaries. This will inevitably have far reaching consequences particularly in terms of on-going maintenance and liability. The Thames Landscape Strategy partnership is ideally placed to bring these different organisations together.

6.2 Making Spaces that Function for People

When space is made for water human activity has to be considered. The floodplain must be accessible during periods of flood and water needs to be expelled as quickly as possible to restore ‘normal’ patterns of use. Having identified places that can be used for water during high tides and flood events it is important therefore, that visitor movements and recreational use is accounted for. This needs to be carried out an early stage of the project and weaved into all designs and in the on-going management plan. The following factors will be considered:
• Maintaining a Sense of Enclosure

From the Ham Lands Floodscape consultation it was indicated by many respondents that an important consideration in restoring floodplains is to maintain the sense of enclosure and countryside found along the river. This has been noted and will underpin all projects through sensitive landscaping.

• Maximising Public Access

The Floodscape consultation also demonstrated the desire for the public to have access to open spaces at all times. This will also form an important consideration but will necessitate the construction of discrete bridges and boardwalks across wetland areas, creeks and culverts and gates to new hedges and stock proof fencing.

• Enhancing the network of Paths and Trails

Footpaths will need to be enhanced. In open countryside these could be informal routes (mown grassy trails for example) or simple gravel paths meandering through the landscape designed to be as natural as possible. In floodable areas gently sloping grass mounds can be constructed that would sit invisibly in the landscape only becoming apparent during a flood event to safely lead the visitor to dry ground. In other locations more formal routes would be enhanced following the lines of historic avenues or hedgerows.

• Creation of a network of Dry Routes for Use in Flood Events

The Restoration of the Lost Floodplains provides an opportunity to put in place a sustainable network of dry routes for riverside users during those times the area will be flooded. These would form an intrinsic part of the pedestrian and cycle network that could be used during periods of high spring tides and more extreme flooding events anticipated in the future. These dry routes will be designed to complement the countryside character of the floodplain linking the towpath with the hinterland and major riverside communities such as Kingston, Richmond and Kew for use by local people, commuters and visitors.

In certain locations it may be necessary for the principle linear route along the floodplain to deviate from the towpath as these places will increasingly be inundated with water at some point along their length. New routes inland would be explored that could form the main cycle routes leaving the towpath as a ‘rural’ retreat along the river. These can also function as important wildlife corridors.

• Maintain and Improve Visitor Safety, Access and Legibility

Visitor safety, access and legibility will be an important consideration in enhancing the network of trails. Signage is needed at key locations indicating dry routes whilst in other places mental mapping techniques would be used to lead the visitor towards a dry and accessible route (often using the exceptional network of sight lines, views and vistas of the Arcadian Thames).
Case Study – Creation of the Hammertons Boardwalk Dry Route

The Hammertons boardwalk was designed to connect Ham Avenues with the towpath in a way that respected the rural character of the area yet conformed to strict accessibility standards. The structure also needed to be above the spring high tide level. The boardwalk was nominated for the Transport for London Awards 2007.

Photos: Hammertons Boardwalk – before and after restoration.

6.3 Making Spaces that Enhance Visitor Understanding of the Landscape – Tourism

Between Hampton and Kew the river landscape, with its historic buildings and waterfronts and its parks and open spaces, is without parallel in any other capital in the world. It is a cultural landscape of international significance as the cradle of the English Landscape Movement and the home of people such as Pope, Turner, Walpole, Sheridan, Garrick, Pete Townsend and Mick Jagger. Along the banks of the Thames are some of the UK’s best known tourist attractions – Kew Gardens, Richmond Park and Hampton Court Palace and the spaces in between form the largest connected open
space in London, a linear park cherished by local people and by the many millions of visitors who flock to the ‘Arcadian Thames’ each year.

The implications of climate change on these historic properties, gardens and wider visitor movement patterns could be considerable. Much loved sites will inevitably need to evolve and existing connections between sites changed if the economic activity generated by these visitors is to be sustained.

By restoring the floodplain dry routes can be put in place and new habitats and places created that could add considerably to the ‘visitor package’ that the Arcadian Thames has to offer. Adapting to climate change within a living, dynamic landscape can be seen as an opportunity to enhance and create new connections and movement patterns along the floodplain within a restored historic and natural setting. The floodplain restoration would be a wonderful story to tell and can form part of the visitor package itself.

Much of the charm and attraction of the river is its tranquillity. It would be self defeating to congest the area with coach loads of visitors and loud tourist paraphernalia that spoils the pastoral character of the Thames. The Restoration of the Lost Floodplain would follow the guidelines set out in the ‘Thames Landscape Strategy Visitor Action Plan’. This document brings together a series of enhancements that link tourist/recreational/local/commuter use of the towpath and adjacent open spaces with river use, signage, infrastructure enhancement, habitat creation and long term management. It also includes measures to link with the 2012 Olympics.

6.4 Making Spaces that Work for Wildlife

The river and adjacent open spaces form a wonderful wildlife corridor where humans are able to get close to nature within the confines of Europe’s largest city.

Since Neolithic times, wildlife has been adapting taking advantage of man’s modifications to the natural environment and although very little of the floodplain today is truly ‘natural’ much of the river provides a magnificent habitat for a diversity of species to thrive.

This said, many of the habitats along the floodplain are managed in a way that is not natural to their riverside location nor would they function in the long-term as the floodplain is (increasingly) inundated with water. Changes to the world’s climate are expected to accelerate species movement as habitats evolve.

6.4.1 Creating a Living Landscape

The established way to manage wildlife sites has been based around the needs of individual locations set within a wider framework of green corridors. As climate changes however, a new approach is needed. To adapt and survive, wildlife will need to move along ‘climate corridors’ as environments change at ever-increasing rates.
Case Study – Ham Towpath

Ham Towpath at low (top) and high spring tide (bottom). Climate change predictions show that these flooding events will increase possibly becoming the norm reducing the amount of time that the paths are open to visitors, commuters and locals to enjoy. Dry routes are needed - designed under a holistic masterplan for the floodplain that accounts for water, wildlife and humans.

Increased flood events will have a considerable impact on the infrastructure that sustains much of the recreational patterns along the river. Already the towpath is regularly washed away by spring tides and floods – restoration of the floodplain would help to put in place sustainable solutions to reduce this occurrence.
New landscapes are needed that create places that are large enough for wildlife to naturally move about in – permeable places, large enough to sustain a variety of species. This can only be achieved through the creation of a mosaic of habitats in an ecologically viable unit (called a ‘Strategic Nature Area’). In this way the open space can be linked together to create one large ecosystem.

Wildlife can move from one place to another, through different habitat types and from area of similar habitat to another. For his to be achieved obvious movement gaps such as town centres, roads and housing need to be bridged.

This is habitat restoration at a landscape scale!

In this new landscape, the natural processes that drive the ecology of the area will need to be re-created to sustain habitats particularly those processes associated with the fluctuations of the river – whether in flood, in drought or at normal flow. This needs to be across a large area.

Traditional land management practices (including the re-introduction of wildlife friendly agriculture) re-introduced.

The Arcadian Thames provides an area large enough to begin to re-create this process which excitedly is located within the confines of Europe’s largest metropolitan area.

Importantly, the Arcadian Thames already has many small and diverse sites of high conservation value for wildlife to move out from and many locations of similar habitat to provide some long-term sustainability as the project develops.

In the long-term the restored landscape will be a self-sustaining whole controlled by the natural cycles of the river in a way that sustains a range of different wildlife populations set within a connected mosaic of habitat types managed in a traditional way.

Measures to connect all parts of the landscape will be crucial – the conservation and enhancement of green corridors and ‘environmental bridges’ through built up areas or across roads for example will form an important consideration. The Arcadian Thames is midway between the Rivers Crane, Hogsmill and Mole, the Wetland Centre at Barnes and the wildlife areas further upstream in Surrey. Links up-stream and downstream will need to be strengthened as the project evolves and the area of scope is broadened potentially extending throughout London and up to Windsor and Maidenhead.

Much more research is needed in the next stage of the project to determine exactly which areas to be included and what habitats and species should be prioritised.

In restoring the lost floodplains a careful balance has to be reached between the conservation of existing habitats of significant wildlife merit set within a patchwork of re-created wetland wildlife areas. This will be achieved by phasing restoration work over a long period...
of time based on sound scientific research, ecological and hydrological measuring.

Existing areas of woodland, species rich grassland and scrub could be left intact used as high places within a wider, wetter landscape-places for wildlife to move out from for example to forage in wetter areas. Layered hedgerows would provide valuable nesting sites for birds and a profusion of hedgerow plants create a magnificent environment for local people to enjoy. In the long-term a great diversity of species could be found including: water vole, badgers, bats, dragon flies, song thrushes, reed warblers, grass snakes, wading birds, bitterns and eels.

Deciding which areas to retain will be as important as deciding which to restore. The key to success will be to create a rich and diverse landscape - a mosaic of habitats including reedbeds, ponds, wetlands, reedbeds, tidal creeks, grassland, scrub, wildflower meadows – some grazed by cattle, surrounded by native hedges and woodland that maintain a rich sense of countryside and enclosure.

In essence the countryside in the city will be maintained although designed and managed in a way that is sustainable with a floodplain location, maximising the potential for a range of habitats and species to flourish.

A key consideration in the Restoration of the Lost Floodplain will be the re-creation of wetland areas. These places are crucial in regulating water flow as in a natural state the river will spill out across the floodplain in periods of high flow (dissipating water and recharging aquifers). The wetland habitats act as great storage areas slowly releasing water throughout the summer months – even in periods of drought.

The re-creation of a mosaic of dry and wetland habitats will link with the emerging Water Framework Directive that sets out a way forward to achieve ‘good ecological status’ for all waterways, including physical modification and alien species.
7.0 Continuing Management

The day-to-day co-ordinated management of the restored floodplain will be crucial to the projects success. In the short-term, the TLS Towpath Management Plan could be extended to embrace new habitats and include measures to reduce the impact of anticipated increases in flotsam and jetsam for example. In addition, the successful TLS volunteer programme (in 2007 16,000 volunteer hours were recorded) would be extended to embrace newly created habitats.

New ways of managing the floodplain would need to be proposed for example, an increase in the use of livestock to manage grazed wet meadows. Changes in flooding patterns and summer droughts will inevitably have consequences for the established wildlife. For example, the river water in the upper tideway is nutrient rich that acts as a ‘natural’ fertiliser to the riverbanks during spring tides. This has a negative effect on the plant life leading a dominance of nettles and dock. Ways to reduce the impact of this will need to be identified. In the long-term the possibility of a establishing a ‘social enterprise’ to manage the floodplain, towpaths and riverside open spaces, across riparian boundaries, co-ordinated by the Thames Landscape Strategy is to be explored. This would extend the volunteer and community service work already established by the TLS and introduce a series of exciting new initiatives. Much more work needs to be carried out first as the proposals has far reaching implications particularly concerning liability, accountability and costs. Areas to be explored would include:

- The maintenance of footpaths, bridleways and cycle tracks
- Removal of litter, flotsam and jetsam and graffiti
- Hedge laying and planting
- Grass management regimes
- Rotational control and management of scrub
- Control of invasive species – species monitoring
- Livestock management
- Volunteer co-ordination & Community Service workers
- Wetland Management
- Tidal meadow grazing regimes
- Tree planting and management
- Fences, erection and repair
- Seats, signs and bins
- Interpretation
- Linked to an education and outreach programme
8.0 Education and Outreach

The Thames Landscape Strategy, working through its ‘in action’ projects such as London’s Arcadia (in partnership with Orleans House Gallery) has established a respected education and outreach programme. It is proposed that the current TLS education programme would be extended (subject to successful fund-raising) to embrace the Restoration of the Lost Floodplain project.

The Education and Outreach programme is designed to connect people with their environment providing opportunities for more people from all backgrounds to have greater access to and understanding of the river environment including understanding of the river’s management, conservation and dynamics. The programme is designed to link with all TLS project work and includes wider initiatives such as volunteering, interpretation, healthy living, lifelong learning and walking leaflets.

The Restoration of the Lost Floodplain project would provide an excellent opportunity for many people to get involved with the management of change of the riverside, learning new skills through volunteering whilst creating new places for people to enjoy. The programme is designed to reach those groups traditionally not associated with the Thames (identified by the TLS partnership and set out in the TLS Annual Review 2007) and to increase a sense of community ownership achieved through the TLS partnership between communities, voluntary organisations, statutory bodies and the vision. It is proposed that the physical base of the TLS Education and Outreach Programme will be moved to the proposed Twickenham River Centre once completed in 2010.
9.0  Project Scope – By Area
The following projects are aspirations of the TLS at present and have not been consulted or have any proposals been drawn up.

9.1 Syon Flood Meadows

The only natural riverbank along the Thames in London and a SSSI.

- Control of encroaching scrub
- Control of invasive species including mitten crabs and Himalayan balsam.
- Enhanced management of wet meadows

9.2 Kew Gardens

A World Heritage Site and one of the UK’s most visited attraction. Kew has the expertise and history that would add considerable depth of knowledge to the Restoration of the Lost Floodplain.

- To continue to work with the Royal Botanic Gardens Kew to develop plans to landscape areas within the floodplain.
- To look at the current flood defences and the ways that these may be retreated in the future and more sensitive areas given greater protection.
- Considerable scope for education and public awareness.
- To work with Kew on the re-location of the main Kew riverside car park on the site of Queen Elizabeth’s Lawn. To include landscaping and restoration of riverside gardens. Potential to develop an internationally important ‘flagship’
garden/space that highlights the need for making space for water. Cross river links to Syon improved.

9.3 **Kew Haha**

The former George II haha that runs alongside Kew Gardens, the Royal Mid Surrey Golf Course and the Old Deer Park. An overlooked natural gem containing many important species and habitats – particularly wet woodland.

- Survey work.
- Restoration and extension of riverside habitats including wet woodland
- Wetland habitat creation, creeks and reed beds to extend the natural habitats and fluvial processes inland.
- Extension of willow spiling along the river’s edge.
- To form a joint habitat with the SSSI directly across the river at Syon House.
- Long term management of the revetment walls and the Thames Path need to be considered. Scope for additional creeks, sluices and natural riverbank placement.
- Access and interpretation

9.4 **Royal Mid Surrey Golf Course**

A large and well respected golf course on the site of a former Royal Palace. To work in partnership with the Royal Mid Surrey Golf Course.
Course and the Crown Estates to investigate the potential to restore the floodplain. To include:

- The re-design of some riverside open spaces adjacent to the Kew Haha to put in place a naturally functioning floodplain.
- To investigate the possibility of including works to some of the greens and fairways which currently flood during periods of spring tide in order to reduce the impact that tidal inundation has on the operation of the golf course. This would investigate increasing capacity for water in other locations beside, in and around the golf course to off-set capacity needed for any improvements to the course and to make space for water. In this way, the Royal Mid Surrey would be working with the fluctuations of the river rather than fighting them – a sustainable tidal course.
- Major habitat restoration.
- To investigate the potential for tidal creeks, ponds and wetland areas that would form part of the landscaping of the course.
- Tree planting.

9.5 River Crane

Restoration of natural riverbanks and floodplain areas (in partnership with FORCE)

9.6 Old Deer Park
• To extend the habitat of the wet woodland into the Old Deer Park which at present is laid out as amenity grassland.

• To include wetland creation, reed beds, creeks wet woodland. Access a key consideration including footpaths, dry routes, signage and interpretation.

### 9.7 Petersham Meadows

Petersham Meadows are managed by the Petersham Trust. The area is low lying currently afforded some limited protection by a low concrete wall which is out of keeping with the riverside environment and will start to be over-topped as climate changes.

• To investigate the possibility of setting back the flood defences to the rear of the meadows

• To include works to the meadows to create grassy depressions to allow water to expel easily following high spring tides

• Possibility of recreating pockets of reedbed

• Establishment of a grazed wet meadow

• Establishment of dry routes and habitat creation

### 9.8 Ham Towpath & Radnor Gardens

A low lying section of towpath between Richmond and Teddington that at present is flooded on most spring tides. The flood defence is a contour line set well back from the river’s edge embracing a large area of floodplain. Riverbourne litter and erosion of the riverbank is a constant problem. Recreation is severely restricted along this stretch due to tidal action.

• Management of vegetation and wetland habitat creation
• Recreation of culverts and sluices under the towpath to expel water from Douglas Meadows, German School and Ham Polo Ground when these spaces are flooded during high spring tides and flood events.

• Construction of dry routes leading walkers away from towpath to the main linear route through Ham - to be used during periods of flood.

• Reduce the conflict between cyclists and walkers by constructing a new designating a dry cycle route inland from the towpath leaving the river walk as a quiet riverside retreat that floods regularly.

9.9 Ham Lands – northern section.

A large area of land designated as a local nature reserved between the Thames Young Mariners and Ham House that formed the area
investigated under the TE2100 Floodscape scheme. With the exception of several areas that were raised with rubble in the 1950’s most of Ham Lands is designated as floodplain and is likely to flood more as climate changes.

- Restoration of the Lost Floodplain offers an opportunity to create a magical mosaic of habitat types that would form the centre of the Arcadian Thames living landscape
- Improvements to the green link between the river and Richmond Park.
- To include the on-going restoration of the Ham Avenues – an important historic landscape and a ‘bat super highway’ linking the Park with the Thames.
- Works to investigate the establishment of wetland habitats, ponds, creeks, woodland, grassland, grazed wet meadows, hedgerows and, scrub. To include the retention of many existing habitats to act as dry places.
- Creation of dry routes including the proposed cycle/pedestrian link between Kingston and Richmond.
- To include investigation of making space for water, restoration of function of fluvial processes and the possible landscaping of the northern bank of the Thames Young Mariners Lagoon.
- Restoration of historic landscape in partnership with the National Trust who own Ham House
- Extension of the Petersham grazed wet meadows

9.10 Ham Lands Southern Section

To investigate the potential to enhance and extend the areas of soft riverbanks and some small scale enhancements to the wet woodland and grassland areas. No plans for lowering land to the main area of grassland.
9.11 Marble Hill Park and the Warren Footpath

A registered landscape of historic importance containing many fine trees and providing the setting for the magnificent Marble Hill House owned by English Heritage.

- Restoration of the floodplain within sections of the park
- Improved sluices and creeks to expel and control floodwater quicker
- Wetland habitats to edges of area currently laid out as amenity grassland
- Restoration of function of fluvial processes
- Historic landscape, veteran trees and events to be accounted for

9.12 Home Park at Hampton Court Palace

The Home Park extends between the world famous Hampton Court Palace to the River Thames. The historic deer park is currently managed as grassland with areas of standing water and reedbed. The park is managed by Historic Royal Palaces.

Some sections of the Home Park (including much of Hampton Court Palace and the Privy Gardens) are located in the floodplain.
• To work with Historic Royal Palaces to investigate the possibility of extending existing areas of reedbed and standing water within the floodplain
• To put in place a more naturally functioning floodplain including the potential for extended wetland creation, sluices under the Barge Walk and creeks

9.13 Canbury Gardens Kingston

A well-used Victorian pleasure park. The riverside walk regularly floods and is currently being washed away in many places.
• Re-creation of one-mile of natural riverbanks, beaches and habitats to rivers edge.
• Potential to make space for water

9.14 Thames Ditton, River Mole & Cigarette Island

The TLS worked in partnership with Elmbridge Borough Council and the Environment Agency to restore sections of Albany Reach in 1998.
• To continue this approach to the mouth of the River Mole and to Cigarette Island
• To include habitat creation along the riverbanks to create a natural bank and new connections along the riverside
between Albany Reach and the island – to include a new footbridge

### 9.15 Hurst Park

A large, well used and wonderful public open spaces jointly owned by the Environment Agency, Surrey County Council and Elmbridge Borough Council (managed by the latter organisation).

- To form part of the Hurst Park Management Plan
- To include the possible re-grading of the riverbank in certain places to restore natural habitat
- Wetland creation in specific locations
- Making Space for water
- Some creeks and reedbeds through the park to include bridges

### 9.16 Riverside Settlements
To look at ways that the impact of climate change along the urban centres of Kew, Brentford, Isleworth, Twickenham, St Margaret’s, Richmond, Kingston, Thames Ditton, Molesey and Hampton can be managed in response to climate change and rising water levels. To include small-scale enhancement works to make space for water and also installation of signage and dry routes to aid accessibility during flood events. To include interpretation and information.

9.17 Other Possible Projects

A series of other projects are possible yet need to be worked up to a more detailed level. At present these are simply ideas and no consultation has carried out or proposals draw up.

- Wildlife and Wetland Centre Barnes – to investigate the possibility of using the Wetlands for water between the end of the bird nesting season and winter migrations
- River Brent
- Broom Road Recreation Ground – creation of natural beech and informal swimming area

9.18 Education, Outreach and Awareness Raising

Establish an education initiative to run alongside the project work to raise awareness of issues and also to enhance restoration schemes. To include on-site, school based formal and informal education. Links to Twickenham River Centre. Working in partnership to reduce the risk from flooding including the promotion of all aspects of measures needed to adapt to climate change and implement the DEFRA Making Space for Water agenda such as rain water harvesting, SUDs, emergency planning and permeable surfaces.

A separate funding application is being prepared by the Thames Landscape Strategy partnership with the Twickenham River Centre for the appointment of a full time education officer.
10.0 The Project Proposal - Next Steps

‘The Restoration of the Lost Floodplain’ proposes a holistic approach to floodplain management that will work across traditional management, local authority and regional boundaries. The TLS is ideally placed to implement these policies on the ground - working through the existing partnership of riparian land-owners and community groups that cross traditional ownership boundaries and areas of interest.

Following the publication of this scoping report funding will be sought for an officer to take the project to the next stage – a detailed action plan depicting for example the network of dry routes, cycle paths, habitat creation areas and signage. It is important that stage takes place as soon as possible in order to inform the development of several key planned documents such as the LBRuT’s Smarter Travel and the Legible London scheme.

The Action Plan would investigate and include the following:

- To establish a steering group of key stakeholders including statutory authorities, local landowners, residents, park and river users. To form a sub-group of the TLS management groups
- To establish smaller groups based on local areas to develop site specific initiatives
- To carry out a desk top exercise to map and collate the historic development of the floodplain
- To carry out a desk top study to identify ownership responsibilities, current management and project proposals in order to achieve synergy between biodiversity, walking, tourist, cycling, streetscape, flood management, tourist related and historic landscape initiatives
- To identify current management practices
- To identify and map the areas of land that would form the project area
- To identify the scope for making space for water and the potential for re-creating naturally functioning floodplain. Detailed hydrological surveys would not be required at this stage
- To identify the scope for the re-creation, reconnection and restoration of a mosaic of habitats – to identify existing habitat type and species
- To map local opportunities including those for habitat restoration, making space for water and indicative creation of new features such as creeks and ponds and natural riverbanks
- Develop a series of opportunity maps
- Work through the TLS partnership to incorporate the aspirations of the Restoration of the Lost Floodplain project into partner strategic plans, policies and proposals
• To identify what measures would be needed to sustain any proposed new habitats and enhancements
• Identify the potential for new management practices including the establishment of a social enterprise company
• To identify new ways that the management of the floodplain and towpath can be improved for people, wildlife and recreational use
• To explore the possibility of establishing a ‘floating herd’ of cattle to graze a network of wet meadows along the river
• To work with local communities to inspire local people to become involved in the preparation of the project
• To identify how the London’s Arcadia volunteer programme can be extended to embrace the project
• To identify ways that the floodplain can be made safer for the enjoyment by all sectors of the community and to reduce user conflict
• To identify how to enhance connections along the floodplain. To enhance entrances, movement and links within to and along the river (including physical, wildlife corridors, cultural and historical)
• To identify a network of dry routes. To include Thames Path National Trail and national cycle routes and wider initiatives such as Sustainable Transport, Smarter Travel and green commuting
• To identify interpretive and signage requirements
• To identify how to improve access, lifelong learning and understanding - Improving the local environment to enable visitors, local people and those not traditionally engaged with the river to access, understand, engage with and navigate easily through the area. To increase diversity of use by a range of users
• To weave into the plan the proposals contained in existing TLS and partner action plans
• To set out how the project can improve the visitor/tourist experience along the Arcadian Thames in particular the connections between the main attractions including the everyday open spaces along the floodplain
• To ensure that the aspirations of the TLS are weaved into wider tourism initiatives
• To encourage a range of informal recreational activity that improves the health of local people and can be sustained as climate changes
• To work with the TLS partnership to ensure that the findings of the project are incorporated into the TLS Review

To bring together the breadth of information detailed above into a single action plan – the project ‘masterplan’. To include high level options, feasibility reports, stakeholder consultation, indicative costs, landholder agreement, funding strategy, agreement of short, medium and long-term actions and a framework for implementation, with identified partners and potential sources of cross-mode funding
• To implement a range of small ‘early hit’ projects that will serve to highlight the aims of the project and attain buy-in

To start the fundraising process including initial work on an EU Life + bid, HLF bid, Access to Nature and other grant giving trusts.
Following the completion of the action plan document - more detailed design for each given area can take place including any flood modelling that would be needed. It is anticipated it will take many years to implement all the goals contained in the project.

A major funding bid will be prepared to begin the process. It is anticipated that this will be submitted late 2009/early 2010.

Project work would be prioritised as funding came on line.

Funding would also be used for detailed fluvial modelling and design.

Establishment of new management regime.