Nine Elms Pimlico Bridge

Stage 1 Report

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Acronyms

AIS	Automatic Identification System
BPS	Battersea Power Station
CYNEMON	Cycle Model Network London
EA	Environment Agency
EIA	Environmental Impact Assessment
FREDA	Federation of Pimlico Residents' Associations
GLA	Greater London Authority
GLAAS	Greater London Archeology Advisory Service
HE	Historic England
LBL	London Borough of Lambeth
LBW	London Borough of Wandsworth
NEP	Nine Elms Pier
NR	Network Rail
PLA	Port of London Authority
TfL	Transport for London
TT	Thames Tideway
TTT	Thames Tideway Tunnel
TW	Thames Water
TWAO	Transport Works Act Order
UKPN	United Kingdom Power Network
VNEB	Vauxhall, Nine Elms, Battersea
WBB	Westminster Boating Base
WCC	Westminster City Council

Please note this report is intended to be printed and read as a double sided document. If viewing the document digitally in Adobe Reader, it is best viewed by selecting View>>Page Display>>Two Page View

Cover Page: Visualisation of Nine Elms Pimlico Bridge looking towards Battersea Power Station from the Competition Stage of the Project

1.0 Executive Summary

In 2013 Transport for London completed a Feasibility Study which established the need for a pedestrian and cycle bridge across the Thames between Vauxhall and Chelsea Bridges (Nine Elms Pimlico Bridge Feasibility Study, 2013).

The proposal for a new crossing in this location is consistent with the pedestrian and cycle policies of the surrounding local authorities and the Greater London Authority, aiming to make a significant contribution to the shared objectives of improving air quality and encouraging safe, sustainable transport methods.

Nine Elms is a fast changing district which will deliver over 25,000 new jobs, including a new Embassy Quarter, and over 20,000 new homes. A package of transport infrastructure including an extension to the Northern Line, enhanced bus services and significant improvements in walking and cycling provisions which include the new river crossing will significantly increase accessibility from surrounding communities and the wider city.

Following the TfL Study, Wandsworth Council promoted an international competition and in 2016 appointed a Design Team to undertake further work on the Project. This report summarises the results of work undertaken by the Design Team in Stage 1 to assess possible landing options on both sides of the river.

Since the TfL Study in 2013, there has been a number of changes to the local environment including new improvements to local infrastructure e.g.: cycle superhighways, expansion of quietway scheme; increased development levels in both Wandsworth and Westminster; increased levels of population; increased walking and cycling demand; deteriorating air quality; and updated traffic incident statistics and transport forecasting techniques.

The process of updating the Transport modelling for the project has been commenced during this stage. The results of this initial analysis confirm that there remains a high potential demand for a crossing on this stretch of the river with the highest demand occurring at the eastern (Vauxhall and central) areas of the reach.

A comprehensive programme of consultation and engagement with stakeholders and the public has also been initiated. Whilst local opposition, particularly amongst some Pimlico residents was confirmed, evidence of significant support for the project on both sides of the river was also established. Feedback from the consultations has been used to inform the appraisal of possible crossing points.

Dialogue has been held with the local planning authorities affected. Whilst Westminster City Council have questioned the need for a crossing, the bridge is recognized as a piece of important infrastructure and it is embodied in both local and regional planning policies. The project continues to address ever strengthening policies on promoting sustainable and active transport alternatives across the city and locally, promoting health and safety outcomes, improving air quality and relieving pressure from other transport modes.

Nine possible alignments for a bridge have been considered and outline impact analysis on aspects including physical constraints, heritage, conservation, ecology, navigation, city connectivity and visual impact has been undertaken for each. Results indicate that it is possible to design a bridge that will support the likely demand, is technically feasible, can meet the functional and technical requirements of river users and the controlling authorities and is likely to be generally supported by the main heritage bodies.

As a result of this work, it is proposed that the alternative locations now be reduced to three which will be considered in more detail in the next stage;

- Location 2 Pimlico Gardens to Bourne Valley Wharf
- Location 3 Dolphin Square to Prescot Wharf
- Location 4C Grosvenor Road (Claverton Street) to Kirtling Street

It is clear from the analysis that no single location can deliver the desired benefits without significant challenges and that further detailed consideration will need to be given to the design of the bridge, transportation, environmental and planning issues associated with the main span, the landing conditions and connections into the existing street networks.

Continued engagement with the stakeholder groups will be required to explain the work undertaken during Stage 1, the outcomes and to obtain input into the design as it develops. Running in parallel, more detailed work on updating the Transport Demand Assessment will also be necessary.

It is the intention that further investigation at the next stage (Stage 2) will highlight the respective merits and disadvantages of the selected location options, leading to the identification of a preferred location. This will allow the detailed design to be developed in Stage 3, leading to the submission of a consents application at the conclusion of that stage.

Work undertaken at Stage 1

This report summarises the results of work undertaken in Stage 1 for the proposed Nine Elms Pimlico pedestrian and cycle bridge. The purpose of this stage of the project was to;

- Undertake an initial update of the TfL feasibility study transport demand assessment (2013) in order to confirm the level of demand for the bridge;
- Undertake initial technical and environmental studies to assess the feasibility and impact of a crossing in this stretch of the river;
- Commence a wide reaching consultation programme eliciting input from statutory bodies, local authorities, other key stakeholders and the public;
- Consider alternative alignment options for the bridge and comparatively assess their strengths and weaknesses and their ability to meet the project objectives.

- **Initial Update of Transport Demand Assessment:**

  In 2013 TfL completed a Feasibility Study which established the need for a new Thames crossing on this stretch of river. An initial update of the TfL Feasibility Study demand assessment has been undertaken at this stage to provide a comparative analysis of the predicted cycle and pedestrian activity at alternative bridge locations and to start reassessing the need for the bridge given the changes that have occurred since 2013. This initial assessment work used a distribution update to the feasibility study for pedestrians and the new TfL Cynemon (Cycle Network Model London) tool for predicting cyclist demand.

  While the analysis is at this stage a comparative rather than an absolute prediction, it indicated that a level of demand exists at all locations sufficient to afford transport benefits. However, is also suggested in general that the eastern bridge locations would have greater demand potential than the western options. The analysis also identified that strongest axes of desire were south-west to north-east and south-east to north for both pedestrians and cyclists. It is intended that further updates and refinement to the demand assessment will be carried out in the subsequent stages of the project, as further information is added to the analysis.

- **Initial Environmental Studies:**

  In support of the location appraisal the Team have prepared a series of studies to analyse the environmental constraints at each of the identified locations in the following areas:

  - Ground Conditions;
  - Archaeology;
  - Arboriculture;
  - Water Resources and Flood Risk;
  - Noise (Residential Amenity);
  - Terrestrial Ecology;
  - Aquatic Ecology; and
  - Air Quality (mapping only)

  Overall the studies identified very little difference between the options in terms of environmental constraints with the most significant identified constraints being potential impact to protected trees on the north bank.

  The options taken forward are to be subject to further environmental assessment at the next stage including more detailed arboricultural assessment. Following the selection of a preferred location it is also likely that the proposals would undergo further study in an environmental impact assessment which may be required to support a consents application.

1.0 Executive Summary

- **Consultation:**

  The project is being progressed in a collaborative way, in consultation with key stakeholders and local communities. A communications programme, completed during 2017 was designed to keep local communities updated on the progress of the project and allow all relevant stakeholders the opportunity to input into the process from the earliest stage.

  In particular, this has included a series of Public Exhibitions held in Wandsworth, Westminster and Lambeth in June/July 2017 and engagement with the following key stakeholders:

  - London Borough of Wandsworth
  - Westminster City Council
  - London Borough of Lambeth
  - Local MPs
  - Local Ward Councillors
  - Greater London Authority
  - Transport for London
  - Environment Agency
  - Port of London Authority
  - Historic England
  - Network Rail
  - Thames Tideway
  - Nine Elms Pier
  - Westminster Boating Base
  - Battersea Power Station
  - Residents North of the River
  - Residents South of the River
  - Local Amenity Societies
  - Active Travel Groups

  Key consultation activities have included:

  - Distributing more than 43,000 newsletters to residential and businesses addresses in Lambeth, Wandsworth and Westminster.
  - Holding 24 hours of public exhibitions attended by 580 visitors over 5 days at 4 different locations.
  - More than 50 hours of meetings with the above stakeholders.
  - Presenting at New London Architecture and London Design Week.
  - Establishing www.nineelmspimilcobridge.co.uk website to share information and gather feedback.
  - Reviewing more than 600 feedback forms.

  While the public consultation did not specifically ask about levels of support or objection, views were made known in discussion including confirmation of some strong opposition on both sides of the river and identification of a number of strong supporters on both sides of the river. All stakeholders above were keen to engage, whether favourable or not of the principle of a new river crossing.

  The consultation identified general support for the proposals from statutory consultees with no in-principle objections to a crossing with the exception of Westminster City Council who requested further information to demonstrate the need for the bridge and the integration with local infrastructure. Where stakeholders identified issues with particular locations these have been taken into account in the appraisal.

  Feedback from consultation and stakeholder engagement has been used to inform the location appraisal work and subsequent selection of a number of locations for further investigation and consultation.

  Given the early stage of this consultation, detailed information on specific location options and other elements such as predicted user numbers was limited and it was clear that many consultees wanted further information as to the benefits the bridge would bring for communities on each side of the river and further afield. This early consultation was however valuable in opening up a dialogue with residents and stakeholders and has identified a number of key themes for further consideration at the next stage of the project and future consultation, including:

  - Need for the Bridge
  - Raising awareness of the vision for Nine Elms on the South Bank
  - Air Quality
  - Active Travel and Connectivity
  - Access and Safety
  - Impact of potential locations on residential amenity and existing community facilities (including green space)

  The meetings that have taken place have ensured that there is a better understanding of the key concerns of those that were met. This will help to inform the ongoing technical and feasibility going forward and guide the future Stages of work.

- **Initial Appraisal of Location Options:**

  At this stage, there is no fixed design and no fixed location for the Bridge. The TfL Feasibility Study of 2013 identified a range of potential crossing points. To update this work the Team has undertaken an in depth technical appraisal of potential location options for a new pedestrian and cycle bridge across the Thames between the existing Vauxhall and Chelsea Bridges.

  This appraisal identified a longlist of 9 potential location options for a new bridge and comparatively assesses their site constraints, ability to meet project objectives and potential harms and benefits.

  The Team, with input from key stakeholders developed a methodology to assess each identified location on a consistent basis against a range of factors likely to affect the relevant feasibility of constructing the bridge, including issues such as transport demand, local and city connectivity, heritage, the environment and impact on existing and new communities (the full list of criteria is outlined in Section 6.3 of this report).

  This assessment is supported by a series of detailed specialist studies undertaken by the Project Team including design, engineering, access, river use, transport, environment, heritage, planning and cost.

  Key stakeholders and local communities have been given the opportunity to input directly into the location options appraisal and their response has formed an important part of the assessment. The final outcome of this analysis has arrived at a limited number of locations which are recommended for investigation in more detail at the next stage of the project. Details of the analysis of each location option are found in Section 6 of this report.

Recommendation

The location appraisal summarised in this report has resulted in a recommendation to reduce the number of locations being investigated from 9 to 3, as the least constrained sites for a pedestrian and cycle bridge across the River Thames. The location appraisal did not identify a single location that delivers benefits without significant challenges. The eventual selection will be about balancing the benefits against the dis-benefits that arise. This Report recommends that the following options are considered in further detail at the next stage of the design process:

- Location 2 - Pimlico Gardens to Bourne Valley Wharf
- Location 3 - Dolphin Square to Prescot Wharf
- Location 4C - Grosvenor Road (Claverton Street) to Kirtling Street

Next Steps

The recommended phasing, objectives and scope of the next phase of the Project has been refined in response to the outcomes of Stage 1, including the extensive consultation with stakeholders and local communities.

The works during Stage 2 will prioritise further investigation into key issues which have been highlighted during Stage 1. It is proposed to divide Stage 2 into two parts. The overall aim of Stage 2A is to complete further work on the 3 options to further test the technical viability and potential impacts of a bridge at these locations, including:

- Undertake further appraisal of the design feasibility of the identified alternative alignment options for the bridge and comparatively assess their strengths and weaknesses and their ability to meet the project objectives;
- Undertake further technical and environmental studies to assess the feasibility and impact of a crossing in this stretch of the river;
- Undertake further updates to the TfL feasibility study transport demand assessment (2013) in order to confirm the level of demand for the bridge;
- Continue to consult on technical constraints and opportunities with local authorities, statutory bodies and stakeholders.

The aim of Stage 2B is to arrive at a recommendation of a preferred location for the bridge. This will draw upon the outcomes of Stage 2A, stakeholder consultation and further detailed assessments as necessary. This will then allow the detailed design to be developed during Stage 3 for the preferred location, leading to the submission of a Consents Application.

2.0 Background

2.0 Background

In 2013 TfL completed a Feasibility Study which established the need for a pedestrian and cycle bridge across the Thames between Vauxhall and Chelsea Bridges, promoting sustainable transport alternatives and reducing impacts on air quality (Nine Elms - Pimlico Bridge Feasibility Study, 2013).

The proposal for a new pedestrian and cycle bridge in this location is consistent with the pedestrian and cycle policies of the surrounding local authorities and the Greater London Authority, aiming to make a significant contribution to the shared objectives of improving air quality and encouraging safe, sustainable transport methods.

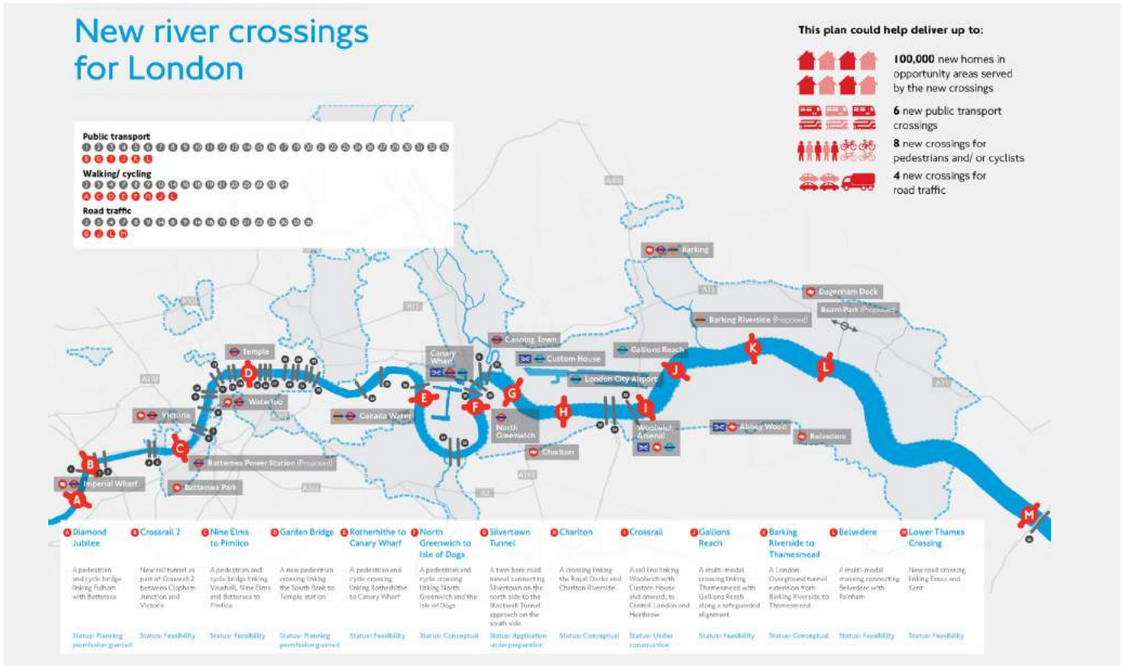
The Nine Elms Pimlico Bridge is identified as a vital element of London's new infrastructure and is included, in the Vauxhall Nine Elms Battersea Planning Framework (2012); the Mayor of London's Connecting the Capital Vision, which identified it as one of 13 new strategic crossings in (2015); and most recently the Nine Elms Pimlico Bridge has been included in the Mayor of London's Draft Transport Strategy (2017) and Draft London Plan (2017).

Following the TfL Study, Wandsworth Council promoted an international competition and in 2016 appointed a Design Team to undertake further work on the Project led by Bystrup (a Danish architecture and design practice), with Robin Snell and Partners (UK Architects), Cowi (Engineers) and Aecom (Environmental, Transportation Engineers and Cost Consultants).

At this stage there is no fixed design and no fixed location for the Bridge. The Team, in consultation with relevant stakeholders, are instructed to undertake an analysis of both the need and the potential location options for a bridge, taking on board all the changes which have occurred since 2013, including:

- Reassessing the identified need for the bridge and updating the TfL Feasibility Study to take account of changes since 2013, such as new improvements to local infrastructure e.g.: Cycle Superhighways, expansion of Quietway scheme; increased development levels in both Wandsworth and Westminster; increased levels of population; increased walking and cycling demand; deteriorating air quality; updated traffic incident statistics etc.
- An initial analysis of the feasibility of potential location options for a pedestrian and cycle bridge between Vauxhall and Chelsea Bridges.
- Extensive consultation with statutory and other stakeholders including local communities.

The intention is for this work to be undertaken in stages where the analysis will become more detailed as the work progresses. The initial structured analysis undertaken at Stage 1 has been used to arrive at a limited number of locations. Each option will be investigated in more detail, including an initial assessment of the needs case during Stage 2 before arriving at a preferred location which can be taken forward to develop a detailed design allowing planning, deliverability, funding and procurement to be worked up with stakeholders.



The 13 new river crossings identified in the Mayor of London's Connecting the Capital Vision (2015)

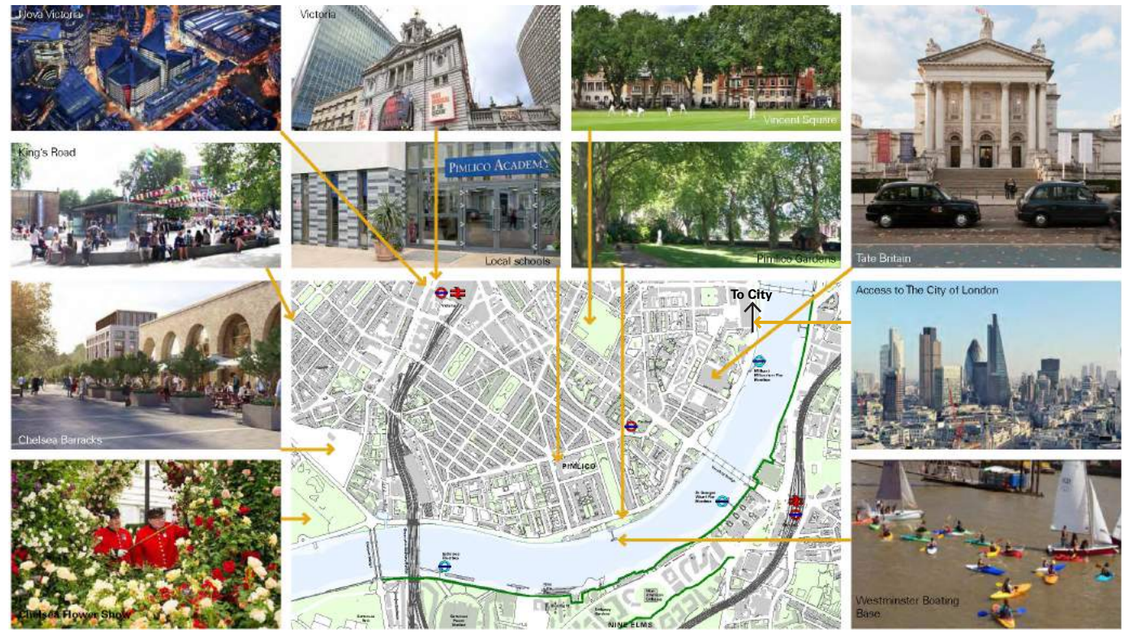
Policy and key strategy documents which identify the Nine Elms Pimlico Bridge as part of London's new planned infrastructure

Aerial visualisation of the Nine Elms Reach of the Thames with the Nine Elms on the South Bank Development in the foreground (c.2030)

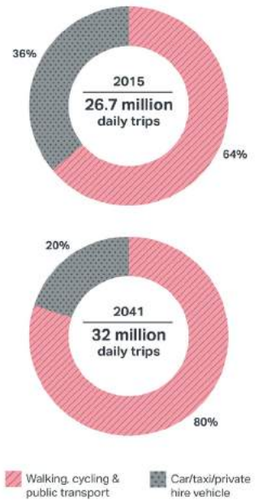
Although the analysis contained within this report focusses on the feasibiliity of the potential site locations for the Nine Elms Pimlico Bridge, there are a number of over arching benefits to a bridge which would be true for a new crossing positioned anywhere along this reach of the Thames.

As part of the next generation of new cycle and pedestrian bridges planned for London, the Nine Elms Pimlico Bridge would:

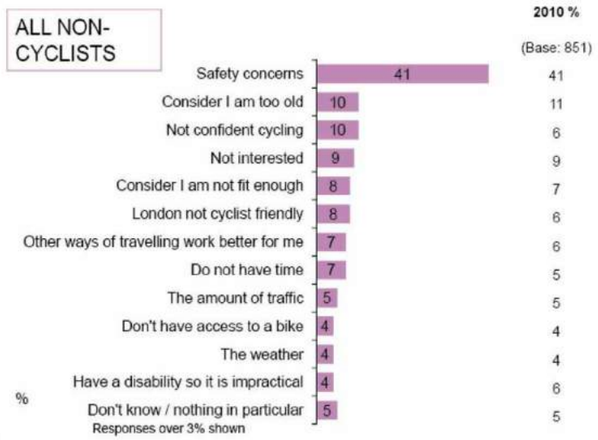
- Meet the increasing demand for high quality new, safe, cycling infrastructure and pedestrian routes resulting from development across the area; as identified by the Mayor of London Draft Transport Strategy (2017), and the Draft London Plan (2017).
- Reduce the largest uncrossed stretch of the river in central London (between Vauxhall and Chelsea Bridges) to improve local connectivity and take pressure off the wider network;
- Provide a high quality designed and innovative solution to help meet rising transport demand in Central London, providing a better experience, shortening journey times for pedestrians and cyclists;
- Provide a safer route option for pedestrians and cyclists, reducing accidents and fear of cycling;
- Make a positive contribution to tackling air quality, a serious issue for the whole of London;
- Become a landmark for the whole of London, leading the next generation of pedestrian and cycle friendly bridges;
- Provide a positive contribution to the shift towards active modes of travel;
- Improve connectivity to and from the Vauxhall Nine Elms Battersea Opportunity Area, providing access to opportunities such as the 20,000 new jobs, connection to the 25,000 new homes, new facilities such as the new south bank riverside walk, new linear park and better connectivity to existing ones such as Battersea Park; and,
- Provide an attractive route for pedestrians and cyclists travelling between south and north London helping to improve the share of trips being made by walking and cycling in line with the Mayor's aim for 80 per cent of Londoners' trips to be on foot, by cycle or by using public transport by 2041.



Westminster and north of the river amenities and attractors



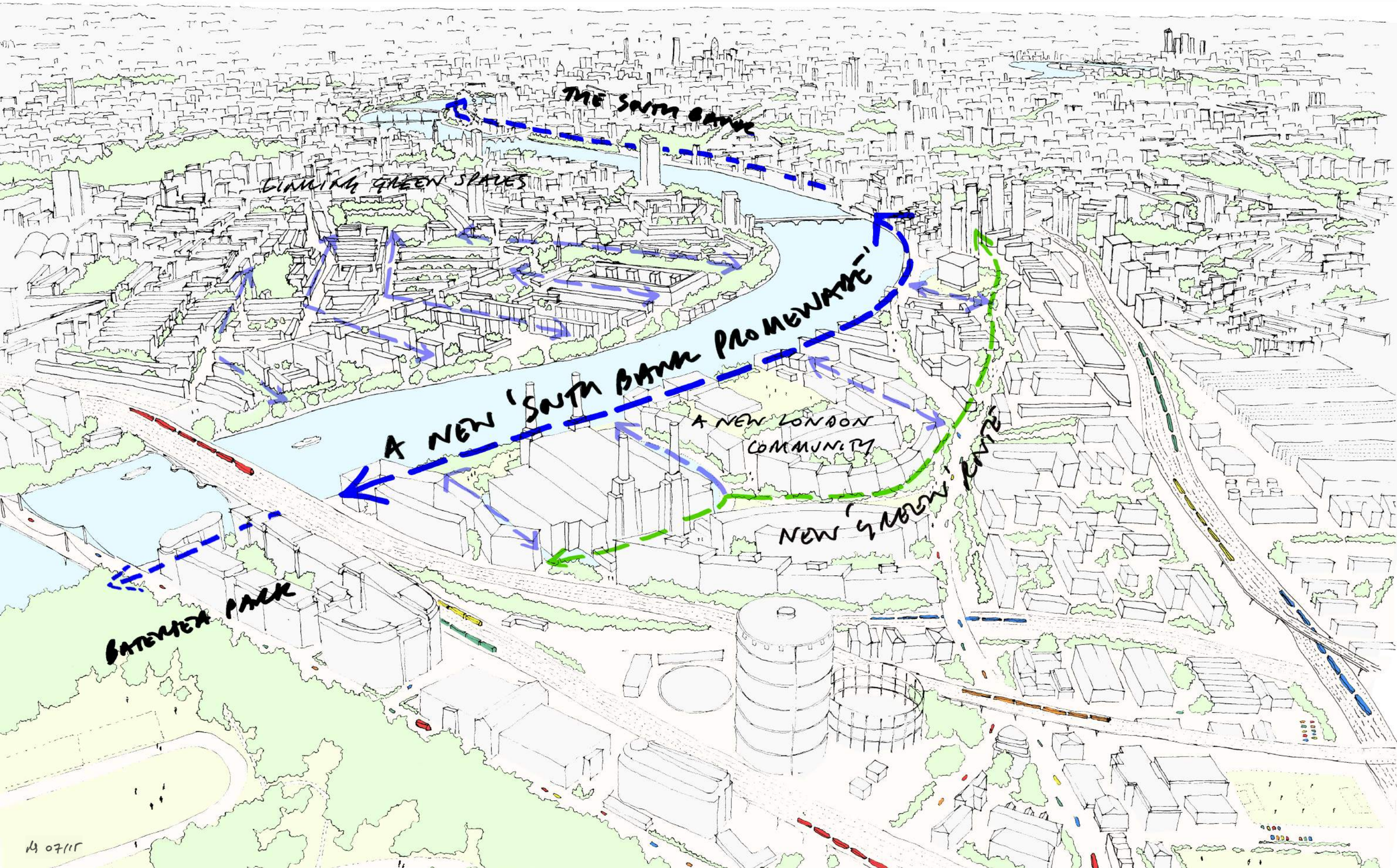
Transport mode share 2015 and 2041 (expected)
Source: Mayor of London Draft Transport Strategy, 2017



Reasons given by non-cyclists for not wanting to take up cycling
Source: TfL Attitudes to Cycling, 2011

Nine Elms on the South Bank amenities and attractors

3.0 Brief


THE SOUTH BANK
LINKING GREEN SPACES
A NEW 'SOUTH BANK PROMENADE'
A NEW LONDON COMMUNITY
NEW GREEN LINKS
BATTERSEA PARK

3.0 Brief

The Project Brief defines the objectives of the Project both in terms of the requirements for a bridge crossing the Thames between Nine Elms and Pimlico and the work of the Project Team. The Brief is intended to be high level and strategic in nature at this stage and defines a set of key objectives for the Project, as follows:

Connective

- Responsive to demand / desire lines.
- Local connectivity to existing & future infrastructure.
- London wide connectivity.
- Supports / encourages modal transfer.
- Quality of user experience.
- Equal treatment to both sides of river.

Sustainable

- Improve user safety.
- Improve air quality.
- Minimise impact at landings.
- Minimise negative ecological impacts.

Innovative

- Provide a positive contribution to public realm.
- Provide a positive contribution to heritage setting.
- Provide level and open access for all from river bank.
- Integration of bridge users on a shared surface.
- Meet key stakeholder technical requirements e.g. PLA, EA, TfL etc.

Deliverable

- Deliver value for money.
- Deliver on cost.
- Minimise disruption during construction.
- Minimise planning risk.

Collaborative

- Undertake engagement with schools, businesses and residents.
- Undertake consultation throughout the design process with all stakeholders.
- Undertake public exhibitions and workshops at key stages.
- Keep communities up to date on progress via interactive website and social media.

The objectives set out the key principles to be achieved by the Project and provide a frame of reference for the Location Appraisal, with each site tested where possible against its potential ability to meet these strategic objectives.

The Project Brief will be revised as the project progresses, with a Final Brief produced at the end of Stage 2. This will be accompanied and supported by a detailed Technical Design Brief which will define the quality, design and engineering standards to be achieved in the finalised design and construction.

It had been assumed that the TfL Feasibility Study 2013 would form the basis of the Technical Brief for the project, however this assumption has been shown not to be robust due to significant development and changes which have occurred since it was produced. The Team is therefore in the process of updating the Study to ensure for example that the transport case is still valid. These updates will feed into the emerging Technical Brief.

Pedestrians and Cyclists sharing a bridge in Copenhagen, Denmark

Quietway routes are a safer alternative to busy polluted roads in London

Opposite Page: Competition design sketch - improving connectivity for London

4.0 Technical Studies

Hyde Park
KNIGHTSBRIDGE
Buckingham Palace
Westminster Bridge
Palace of Westminster
BELGRAVIA
WESTMINSTER
VICTORIA
Lambeth Bridge
LAMBETH
Sloane Square
PIMLICO
Royal Hospital Chelsea
Ranelagh Gardens
Churchill Gardens
Dolphin Square
Pimlico Gardens
Vauxhall Bridge
St Georges Wharf
Vauxhall Station
CHELSEA
Chelsea Bridge
Grosvenor Rail Bridge
Westminster Boating Base
VAUXHALL
The Oval
Albert Bridge
Middle Wharf
Nine Elms Pier
Cringle Dock
Riverlight Site
Heathwall Pumping Station
New American Embassy Site
Battersea Power Station
NINE ELMS
Battersea Park
BATTERSEA
STOCKWELL

4.0 Technical Studies

Whilst at this stage there is no fixed design and no fixed location for the bridge, the Team, in consultation with relevant stakeholders and local communities, have commenced both a reassessment of the need for the bridge and a structured analysis of the 9 potential location options for a new Thames crossing between the existing Vauxhall and Chelsea Bridges.

These two strands of work are interrelated and are therefore being undertaken concurrently. For example, the need for a new crossing cannot be established without full consideration of the specific potential locations for a bridge on the north and south banks, because the transport level of demand will differ at each location.

In order to support this work, a series of technical investigations have been undertaken in the following areas:

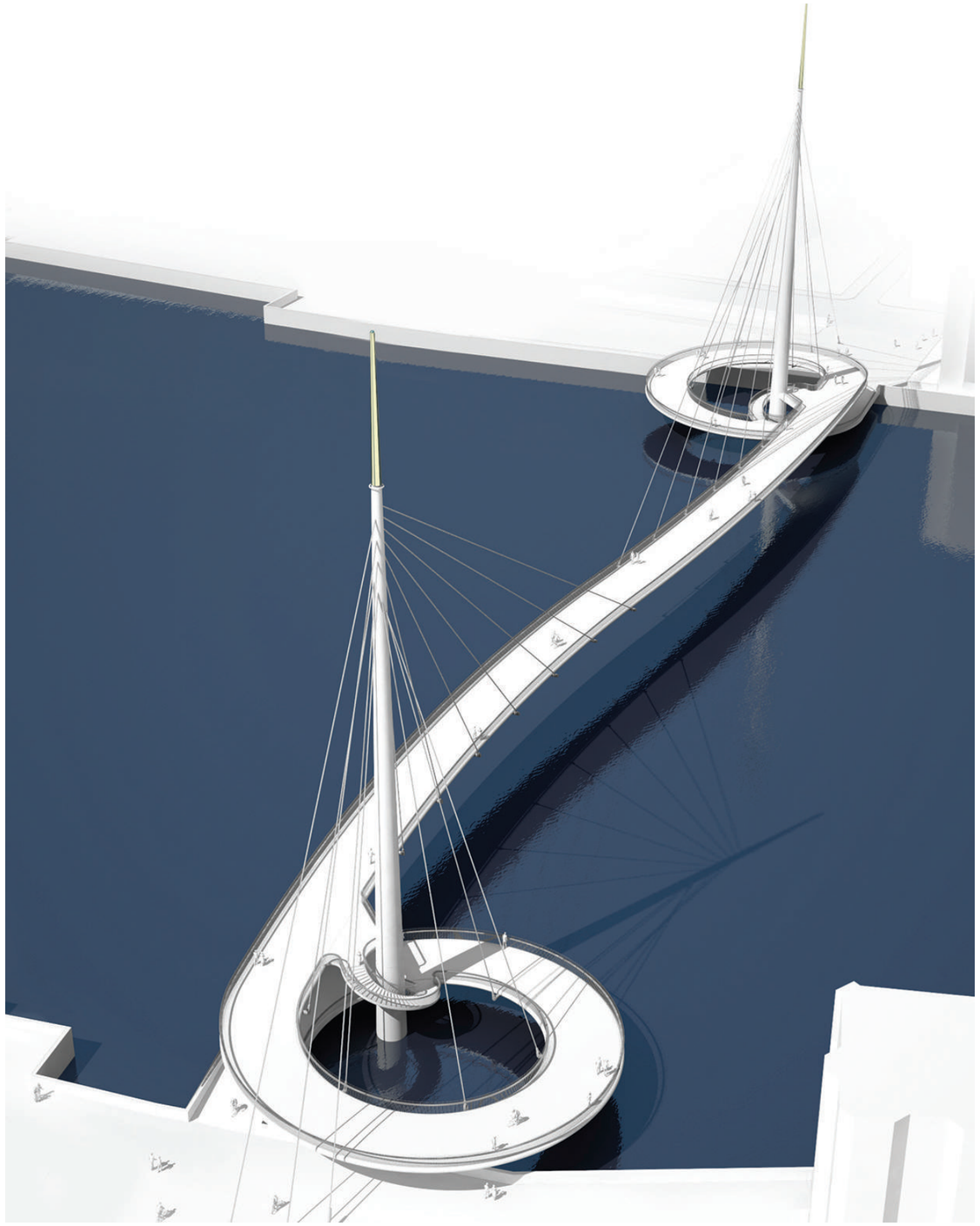
- Design
- Engineering
- Access
- River Use
- Transport
- Environment
- Heritage and Townscape
- Planning
- Deliverability

The technical studies conducted at this stage have been undertaken by specialists in the Project Team in direct consultation with relevant key stakeholders. The findings of these technical studies are summarised in the following pages.

For each area of study the Team have appraised the 9 identified potential locations on a comparative basis against a range of factors, relative to their respective discipline, which are likely to affect the feasibility of constructing the bridge at each location.

The technical analysis for each discipline directly supports and is fed into the overall location appraisal which combines all these individual assessments together with the input of key stakeholders and comparatively assesses each potential location in terms of site constraints, ability to meet project objectives and potential harms and benefits.

The Methodology for this overall assessment and the Location Appraisal itself is described in Section 6 of this report.



Aerial visualisation of the concept design

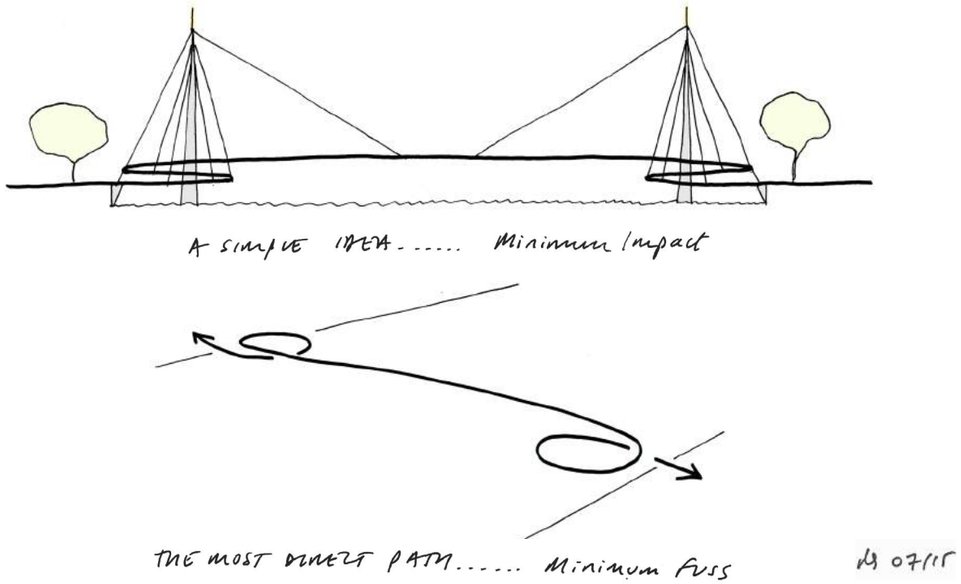
Opposite Page: Aerial photograph showing the 9 identified location options

4.1 Design

In support of the wider location appraisal the Team undertook a series of technical studies to identify the design constraints at each of the identified locations, including the development of:

- A **Site Locations Drawing** for the overall Nine Elms Reach of the Thames, identifying 9 potential locations which were identified for analysis following initial appraisals.
- A **Photographic Record** for the identified locations following site visits during Stage 1 by the Team.
- A set of **Constraints drawings** for the optional sites to support the appraisal process and illustrate the factors which may have a significant bearing on the relevant feasibility of each site including:
  - Site Locations
  - Centrality of Location
  - Space Availability at Landings
  - PLA Navigation Channel
  - Utilities
  - River Use
  - Heritage and Townscape
  - Planning Constraints
  - Public Transport
  - Local Cycle Connectivity
  - City Wide Cycle Connectivity
  - Pedestrian & Cyclist Accidents
  - Heritage Assets
  - Archeology Priority Areas
  - Ecology
  - Arboriculture
  - Bedrock & Superficial Geology
  - Ground Water Vulnerability
  - Flood Risk & Water Resources
  - Noise
  - Air Quality and Pollution
  - Land Use
  - Public Realm
  - Future Development
- A set of **Diagrammatic Plans and Sections** in more detail, to show the spatial constraints and impact of the bridge at each location, according to the unamended competition bridge design. This illustrates for example, the resultant space available at the bridge landing to manage pedestrian and cycle movements and an initial indication of the potential impact of the structure on the surrounding context such as the assumed location of the back stays.

  In particular the 9 location options are considered according to two different navigational clearances in the river. During the competition stage it was specified that the bridge should offer a 150m navigational clearance. However, during Stage 1, in consultation with the Port of London Authority, an alternate navigational clearance has been considered based on the Thames Navigational Channel, plus 15m either side. The use of this alternative navigational clearance is subject to further consultation and agreement by the PLA during the next stage.
- Supplementary drawings including a 3D computer model of the Nine Elms Reach and visuals of the competition bridge design at each location.



Design concept sketch for the pedestrian and cycle river crossing

Criteria Assessment

- No Constraint / High Positive Impact / Major Benefit
- Minor Constraint / Positive Impact / Moderate Benefit
- Moderate Constraint / Neutral Impact
- Significant Constraint / Negative Impact / Moderate Harm
- Major Constraint / High Negative Impact / Major Harm

		DESIGN														
		Engineering		Access			Marine and Navigation				Spatial			Urban			
		Engineering Constraints	Utility Constraints	Improve user safety	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements - 150m Clearance	Achieve PLA requirements -Navigational Channel +15m	River Use Constraints	River Use Impact	Navigational Clearance Requirement Constraints **	Landing Condition Constraints	Spatial Impact	Quality of user experience	Equal treatment to both sides of the river	Minimise impact at landings	Enhance public realm
1	N																
	S																
2	N																
	S																
3	N																
	S																
4A	N																
	S																
4B	N																
	S																
4C	N																
	S																
5	N																
	S																
6	N																
	S																
7	N																
	S																

Combined Design Appraisal Assessment Matrix

4.1 Design

The Design Studies have been directly supported by specialist input from the Design Team, particularly regarding engineering, marine navigation and access. Outcomes of design investigations are fed into the wider appraisal process to support the selection of short listed site locations which are recommended to be taken forward for further investigation in Stage 2 (Concept Design).

Engineering
Engineering Constraints are identified and incorporated into the design assessment, including initial analysis of the riverwall and navigational clearances, specifically in respect of the required level changes from bank to deck, available space and restrictions to backstays, interfaces with third party structures.

Major utility constraints are assessed on the information available, primarily including the proximity to Thames Tideway Tunnel and other below river utilities and subterranean tunnels. The presence of Tideway, for example, represents a significant constraint for consideration - any option where a foundation is located within a defined exclusion zone will add complexity. Option 4A is the most constrained followed by option 2, 3, 4B and 5 which sit in the deviation envelope.

The Team commenced engagement with a number of key technical stakeholders at this stage including Port of London Authority, Transport for London, Environment Agency, Thames Tideway and Network Rail to update them on the Project Status and allow them the opportunity to input into the Location Appraisal and begin to understand their technical requirements both now and in the future.

Access
A key design objective for the bridge at the outset is to provide level and open access for all from the river bank. Key Stakeholders will require that the project demonstrate it can meet current expectations regarding inclusive design.

The Team commenced engagement with potential users including an Active Travel Groups meeting to begin to understand their requirements and involve them at the start of the design process. Issues of accessibility and safety including the integration of cyclists, pedestrians and vehicles at the connections with the adjoining transport network were also highlighted as important considerations from the Public Consultations.

At this stage the Team have reviewed the access strategy for the bridge in the context of current standards, best practice and policies related to access and inclusive design. The report identifies the key issues and provides recommendations for the scheme to achieve a good level of accessibility to be fed into the technical design brief for the project in the next stage.

Further investigation of the landing conditions, accessibility and integration into existing transport networks will be developed in Stage 2 for the shortlisted sites.

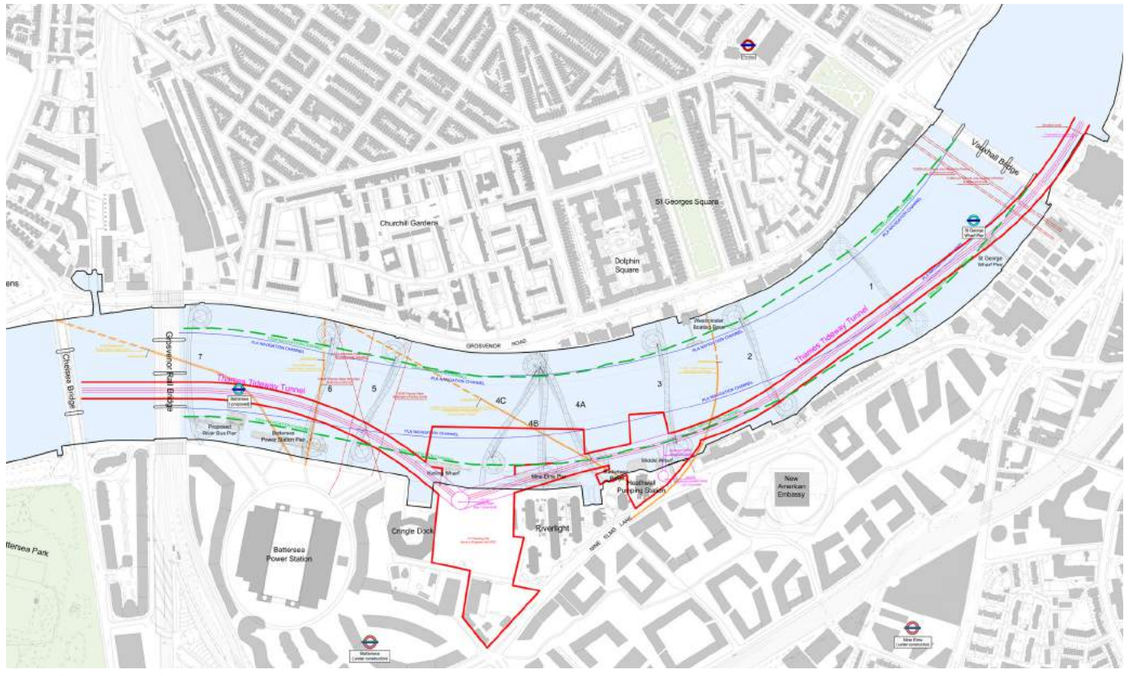
Marine and Navigation Assessment
River use constraints have been considered for each potential alignment and the assessment has been led by specialist marine consultants Beckett Rankine to highlight potential navigation constraints and advise on the possible impact of a new bridge on the river and its users.

To support the assessment a river use constraints drawing has been created based on the collection of Automatic Identification System (AIS) data which tracks the major vessel movements on this stretch of River.

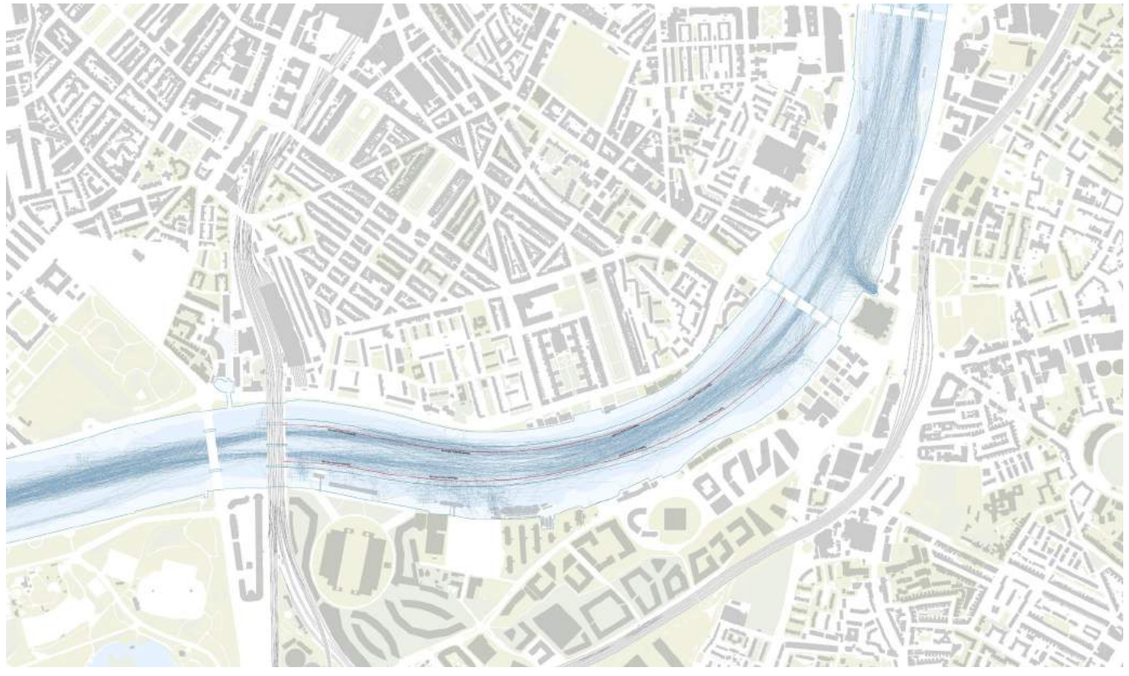
The Team have actively engaged with key marine stakeholders including meetings with the Port of London Authority, Environment Agency, Thames Tideway, Westminster Boating Base and Nine Elms Pier to update them on the Project Status, allow them the opportunity to input into the Location Appraisal and begin to understand their technical requirements.

Overall the sites closer to Vauxhall Bridge were seen as less challenging in terms of River Use. However, the assessment highlighted a number of navigational issues and constraints along this stretch of river particularly regarding protecting the working and safeguarded wharves: Cringle Dock (constraining Location 5 and to a lesser extent Location 6), Kirtling Wharf (Location 4C), and Middle Wharf (Location 3); and the effect on existing river users such as the Westminster Boating Base, and the House Boat community at Nine Elms Pier (Location 4A, B and C).

The key findings from the river use constraints appraisal are fed into the wider location appraisal process to support the selection of short listed site locations which are recommended to be taken forward for further investigation in Stage 2 (Concept Design). It is intended that further engagement with key marine stakeholders will occur as the project progresses including the Environment Agency, Port of London Authority, Thames Tideway, Westminster Boating Base and the Nine Elms Pier Residents.



Utility Constraints Mapping


Vessel Tracking Mapping

4.2 Transport

In 2013 TfL completed a Feasibility Study which established the need for a new Thames crossing in this location.

The bridge is identified as a vital element of London's new infrastructure and is included, for example, in the Vauxhall Nine Elms Battersea Planning Framework (2012); the Mayor of London's Connecting the Capital Vision, which identified it as one of 13 new strategic crossings in (2015); and most recently the Nine Elms Pimlico Bridge has been included in the Mayor of London's Draft Transport Strategy (2017) and Draft London Plan (2017).

The proposal is consistent with the transport policies of the surrounding Local Authorities and the GLA in that it is seeking to provide an attractive route for pedestrians and cyclists travelling between south and north London, helping to improve the share of trips being made by walking and cycling in line with the Mayor's aim for 80 per cent of Londoners' trips to be on foot, by cycle or by using public transport by 2041.

At Stage 1 the Team undertook a high-level transportation options appraisal to consider the local and strategic connectivity of the new bridge along with initial comparative forecasts of pedestrian and cycle activity on the new bridge and on key links in the local area. The transportation options appraisal included site investigations, data analysis and initial modelling which has been developed in consultation with Transport for London and been compiled in a detailed technical report which specifically addressed:

- City Connectivity
- Local Connectivity
- Demand Assessment

The key findings from the transportation options appraisal are summarised to the right and are incorporated into the wider location appraisal process to support the selection of a reduced number of site locations which are recommended to be taken forward for further investigation in Stage 2 (Concept Design).

Plan showing personal injury accidents for pedestrians and cyclists, 2011-16 for the area surrounding the Nine Elms Reach of the Thames

Criteria Assessment

No Constraint / High Positive Impact / Major Benefit	
Minor Constraint / Positive Impact / Moderate Benefit	
Moderate Constraint / Neutral Impact	
Significant Constraint / Negative Impact / Moderate Harm	
Major Constraint / High Negative Impact / Major Harm	

		TRANSPORT				
		Local Transport Connection Constraints	City Wide Transport Connection Contraints	Responds to demand / desire lines	Improve user safety	Transport Impact
1	N					
	S					
2	N					
	S					
3	N					
	S					
4A	N					
	S					
4B	N					
	S					
4C	N					
	S					
5	N					
	S					
6	N					
	S					
7	N					
	S					

Combined Transport Appraisal Assessment Matrix

City Connectivity

City Connectivity is evaluated for each location in terms of integration into the wider area transport infrastructure and responds to existing desire lines / patterns;

It should be noted that overall trends of existing travel patterns and forecast desire lines were developed based on the data collected in the questionnaire survey undertaken as part of the TfL Feasibility Study (2013) rather than new data inputs.

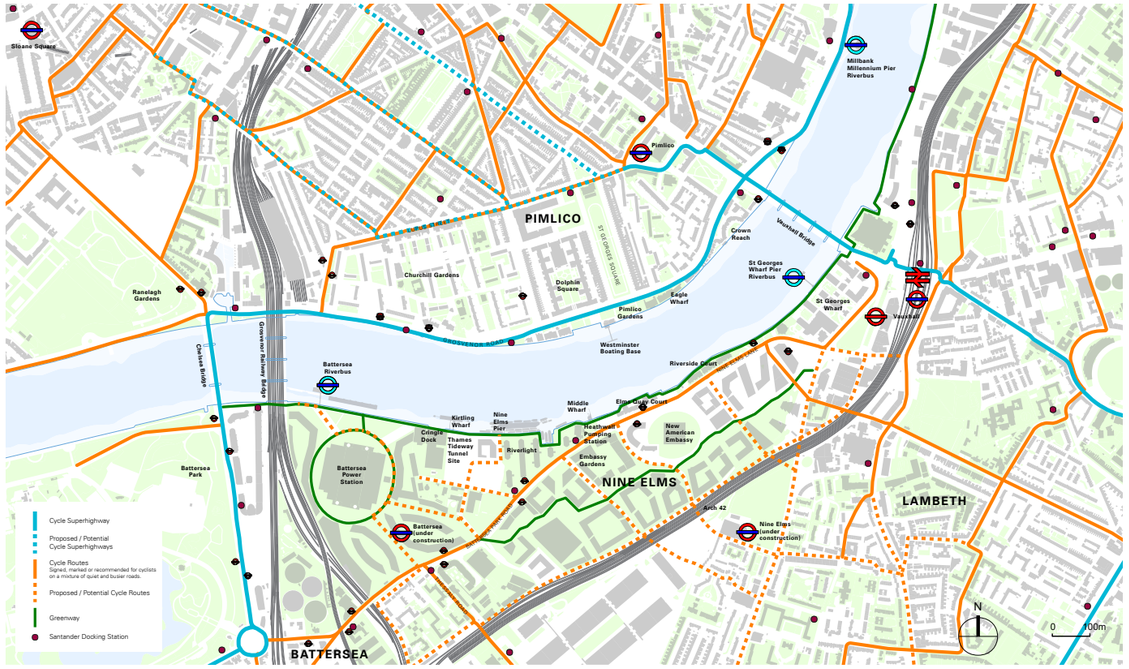
This analysis identifies that south-west to north-east and south-east to north were the strongest axes of desire. For pedestrians, this includes desire lines to/from Millbank, Westminster, Victoria and Slone Square and towards the embankment for pedestrians. Similar results are evident for cyclists, but with the catchment also extending further towards the City in the north-east and Marylebone in the north.

Options 1, 5 and 6 have the greatest constraints to the north of the river, most notably including the barriers created by the existing urban context which may restrict north-south movement without significant diversion from the predicted desire lines, including Churchill Gardens to the north of Site 5 and 6 and the gated private residential area to the north of Site 1.

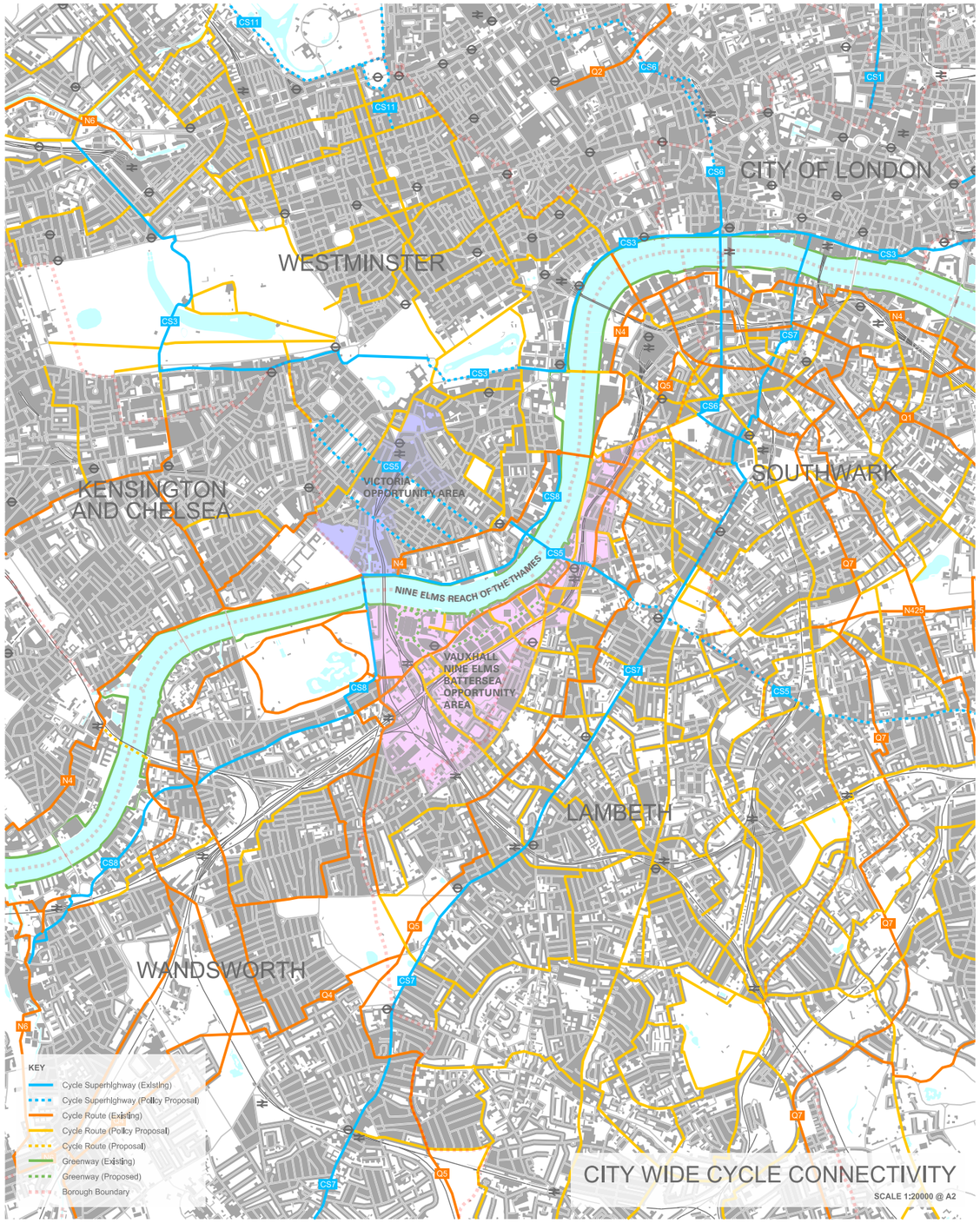
Option 7 contains the greatest constraints to the south of the river, notably being located to the extreme west of the Nine Elms development area which means that it is poorly located to capture that demand, whilst its ability to capture the wider demand to/from the south-west is also restricted by the proximity of the railway which may act as a barrier.

All options will have the potential to provide good east-west connectivity to the north for both cyclists and pedestrians via Grosvenor Road and Cycle Superhighway (CS8). Options 2, 3, 4A, B and C, were however, deemed to have the best connectivity north of the river having the potential to provide very good north-south links towards Victoria.

Options 4A, B and C are also shown to provide good connectivity to the south of the river. However, Options 1, 2 and 3 have slightly better connectivity on the south side due to their relatively close proximity to both Nine Elms Lane and the proposed Arch 42 scheme which provides a north-south connection across the railway line.



Plan showing existing and proposed cycle infrastructure, excluding the new bridge for the area surrounding the Nine Elms Reach of the Thames



Cycle Connectivity mapping showing proposed and existing routes as contained in the active travel policies of the surrounding boroughs

Local Connectivity

Local Connectivity is evaluated as how well, on a local level, alternative bridge landings can be accommodated and integrated into the existing transport infrastructure. The assessment includes analysis of: the amount of landing space; existing footway widths and cycle lanes immediately adjacent to the proposed landing options; existing crossing facilities; potential to provide new / upgraded crossing facilities; and, accident trends.

In terms of Local Connectivity Options 2, 3, 4A, B and C are highlighted as holding the least constraints. Options 1, 5, 6 and 7 were, by contrast, assessed as holding the greatest constraints, particularly where there was severely limited space on the north bank for a bridge landing and to manage pedestrian and cycle movements without mitigation.

Demand Assessment

The Demand Assessment is evaluated using an initial relative assessment of the relationship between bridge location and changes in potential pedestrian and cycle demand.

An initial update of the TfL Feasibility Study demand assessment (2013) provides a comparative assessment of the demand at alternative bridge locations. This initial assessment work uses a distribution update to the Feasibility Study for pedestrians and the new TfL Cynemon (Cycle Network Model London) tool for predicting cyclist demand.

As well as undertaking Cynemon modelling of the options, TfL were directly consulted throughout the work stage, providing base information and consultation on the methodology, process, and interim findings.

Further updates and refinement to the TfL Feasibility Study demand assessment will be carried out in the subsequent stages of the project. It is likely that these future updates to the demand assessment will result in significant changes to the predicted levels of demand. Therefore, the use of demand projections at Stage 1 is strictly limited to providing a comparative assessment of alternative locations.

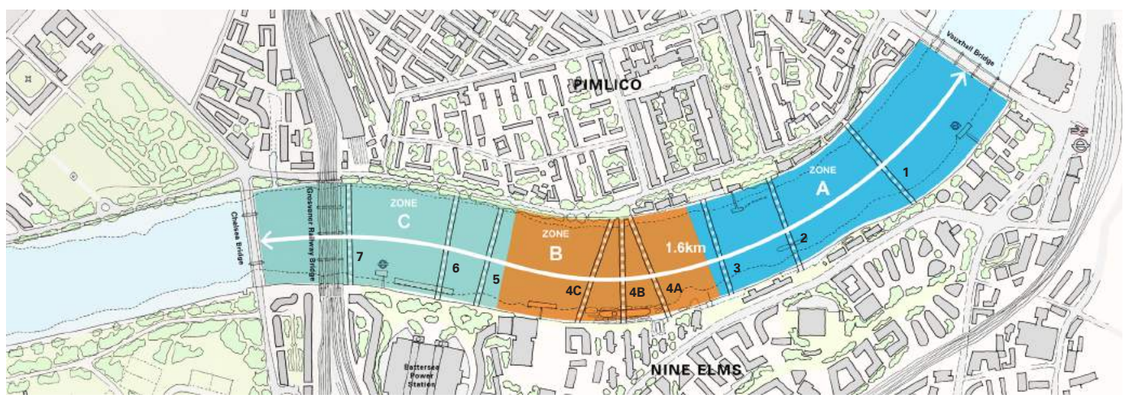
For the purpose of the demand assessment at Stage 1, the new bridge has been coded in three indicative locations representative of the 9 potential options.

Overall, the demand assessment indicates that the eastern bridge locations would have greater demand potential than the western options.

A new bridge in Zone A, is expected to result in the highest level of daily pedestrian and cycle demand.

A bridge in Zone B, is expected to result in a slightly lower level of demand when compared to Zone A, with approximately 40% less demand. This is however still expected to represent a significant relative demand potential, and these central bridge location options also offer to reduce distances to a river crossing by the greatest degree.

A bridge in Zone C, is expected to result in the lowest level of daily pedestrian and cycle demand when compared to the other zones, with approximately 45% of the demand of Zone A. Nevertheless, the assessment did indicate that even at Zone C, a level of demand does exist and there is potential for a bridge in this zone to afford transport benefits.



Zones for Demand Assessment for a cycle and pedestrian bridge between Nine Elms and Pimlico - Stage 1 Appraisal

4.3 Environmental

It is considered likely that any application for consent would have to be supported by an Environmental Impact Assessment (EIA). Examples of river crossings not requiring an EIA do exist including the Diamond Jubilee Footbridge, however, given the potential location of the proposed Nine Elms Pimlico Crossing it is expected that an EIA would be required. In order to fully determine this a formal EIA screening should be undertaken, it is expected that this would be conducted following the identification of a preferred location.

As the first stage of this Environmental Analysis and to support of the wider location appraisal at Stage 1 the Team have prepared a series of studies to analyse the environmental constraints at each of the identified locations.

This included desk based assessments of secondary sources supported by site investigations, walk over studies and initial discussion with Key Stakeholders.

The Team undertook an initial engagement meeting with the EA. Following this meeting the EA provided their initial input to the project in the form of a preliminary opinion setting out the key issues and opportunities from their perspective. A further meeting was offered to the EA to provide update on status of the project and allow them the opportunity to specifically input into the location appraisal, however, this was not taken up at this stage.

The Team also met with Historic England together with their Archaeology specialists.

The findings are compiled in a series of Environmental Reports and mapping which indicate the high level environmental constraints at each of the proposed bridge locations for:

- Ground Conditions;
- Archaeology;
- Arboriculture;
- Water Resources and Flood Risk;
- Noise (Residential Amenity);
- Terrestrial Ecology;
- Aquatic Ecology; and
- Air Quality (mapping only)

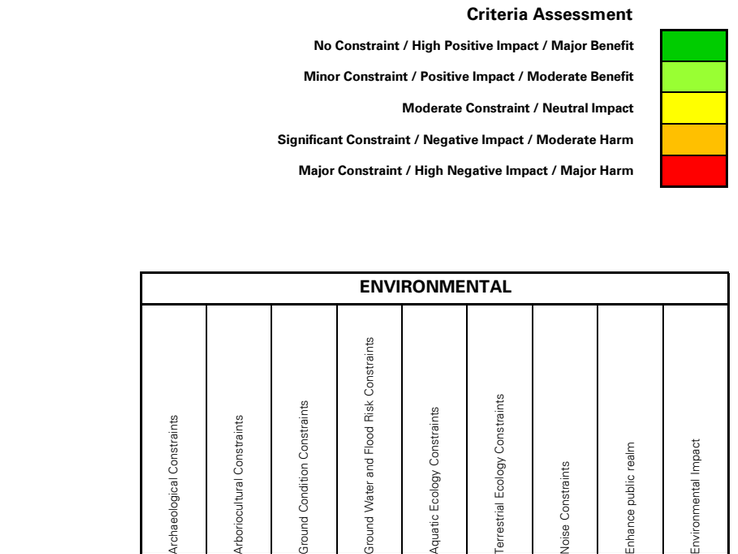
The environmental appraisal studies have been incorporated into the wider appraisal process to support the selection of a reduced number of locations, recommended to be taken forward for further investigation in Stage 2 (Concept Design).

The studies demonstrate that there is very little difference between the options in terms of environmental constraints, with Options 1, 3, 4C and 6 being identified as the marginally least constrained. The studies specifically illustrate that with regards to ground conditions, water resources and flood risk, aquatic and terrestrial ecology there is very little difference between the potential options and that there is nothing which has been specifically identified in these areas which would preclude development in the identified locations subject to appropriate (standard) mitigation. While potentially slightly more significant environmental constraints were identified in terms of archaeology and arboriculture.

In archaeological terms, this included for example, the presence of a significant Bronze Age timber structure at Option 1; and Option 7 may be constrained by the presence of prehistoric peats and proximity to a series of known wreck locations. However, it was again noted that the application of appropriate mitigation should mean development is not necessarily precluded.

Similarly, in arboricultural terms, a number of potential constraints are identified in the form of moderate and high-quality trees located in the potential landing areas across the nine options. This is particularly the case on the north bank in those locations where the trees are located close to the riverbank and densely spaced. Overall it is assessed that Options 2 and 4A were the most significantly constrained while Options 1, 7, 4B, 4C and 3 were the least constrained.

These results are incorporated into the appraisal, and it is proposed that more detailed investigations are undertaken in Stage 2 to further define the arboricultural constraints at the selected locations. This will establish the implications of siting a bridge in those specific locations and may help identify any mitigation required.



Note: Environmental technical appraisal excludes any mitigation through design which may reduce the level of constraint.

Combined Environmental Appraisal Assessment Matrix

4.4 Heritage and Townscape

The heritage constraints and considerations for the identified location options has been led by specialist heritage consultants Donald Insall Associates, who joined the Project Team during Stage 1 to describe the heritage constraints of the potential location options. They have also provided advice on the potential impact of a new bridge on the setting of historic buildings and on the character and appearance of the river-scape, particularly for those locations which fall within Conservation Areas.

The heritage appraisal is informed by multiple sources including, for example, site investigations, examination of historic maps, consideration of the Heritage List, Local Policy and the local Conservation Area Appraisals, and initial discussion with key stakeholders such as Historic England.

The Team met with Historic England to update them on the Project Status and allow them the opportunity to input into the Location Appraisal.

The findings are contained in a heritage assessment report which considers the impact on listed structures, conservation areas and the wider townscape. This analysis is supported by a constraints drawing which illustrates the designated heritage assets as well as the key views in the vicinity of the location options.

The assessment found that none of the proposed locations should be ruled out on the grounds of potential impact on the historic environment. However, some have greater sensitivity in heritage terms than others, notably including those in close proximity to listed buildings.

Historic England in particular raised concerns over the potential locations which are directly in the setting of Battersea Power Station (Options 5 and 6), and to a lesser extent Option 2 which is in close proximity to St George's Square.

The key findings from the heritage options appraisal are fed into the wider location appraisal process to support the selection of shortlisted site locations which are recommended to be taken forward for further investigation in Stage 2.

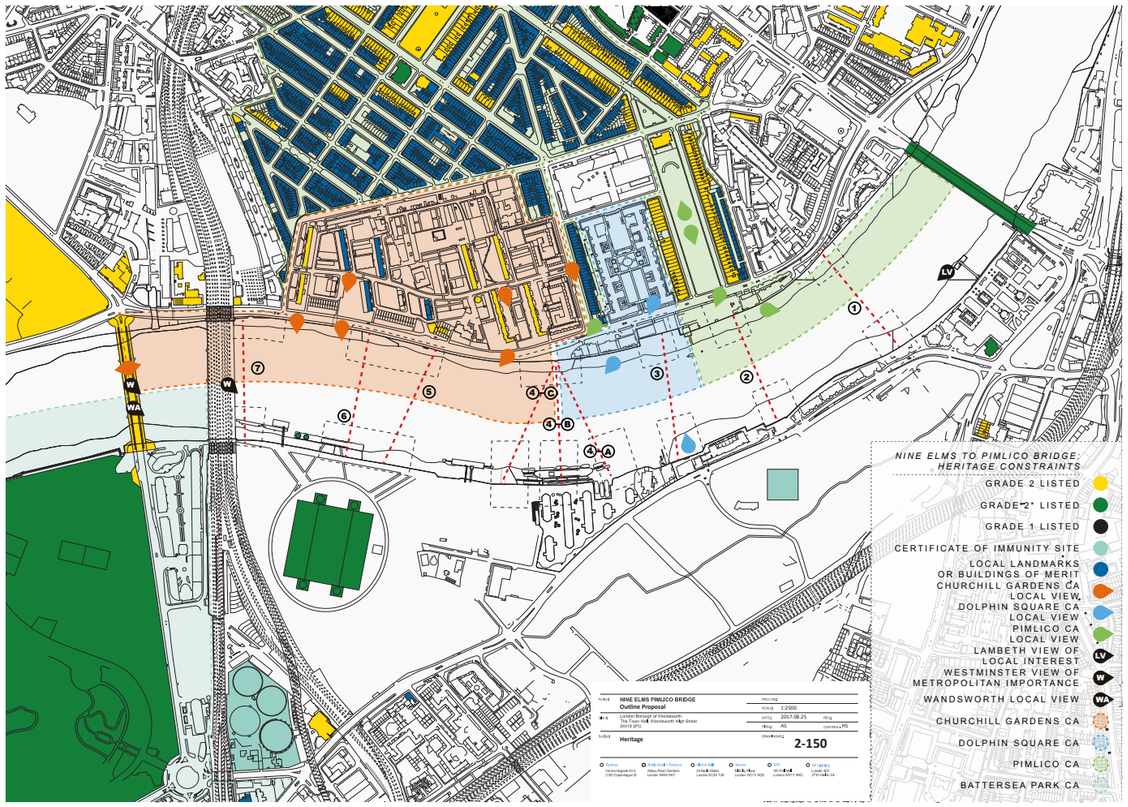
Criteria Assessment

- No Constraint / High Positive Impact / Major Benefit
- Minor Constraint / Positive Impact / Moderate Benefit
- Moderate Constraint / Neutral Impact
- Significant Constraint / Negative Impact / Moderate Harm
- Major Constraint / High Negative Impact / Major Harm

		HERITAGE				
		Archaeological Constraints	Townscape Constraints	Conservation and Heritage Constraints	Enhance heritage setting	Planning and Heritage Impact
1	N					
	S					
2	N					
	S					
3	N					
	S					
4A	N					
	S					
4B	N					
	S					
4C	N					
	S					
5	N					
	S					
6	N					
	S					
7	N					
	S					

Combined Heritage and Townscape Appraisal Matrix

Axial view looking south from the north bank towards the Grade II* Listed Battersea Power Station



Heritage constraints map showing the area surrounding the Nine Elms Reach of the Thames

4.5 Planning

The key planning outputs from Stage 1 have been to review and update the 'Initial Planning and Environment Assessment' which was undertaken as part of the TfL Feasibility Study (2013), including a Planning policy and Constraints review, which has been fed into the wider Location Appraisal and the commencement of initial engagement key stakeholders including the surrounding Local Authorities, Greater London Authority and Statutory Consultees.

Planning Policy

The Local Planning Authority for the north side of the River Thames for all location options is the City of Westminster and the London Borough of Wandsworth for all options to the south.

The Design Team have appraised the Town Planning issues associated with constructing a bridge across the Thames in this location against the local and wider policy designations which could be particularly relevant to the potential location alignments, including those set out in the following documents:

- The Vauxhall Nine Elms Battersea Planning Framework (2012);
- The Mayor of London's Transport Strategy (2010);
- The Mayor of London's Draft Transport Strategy (2017);
- The London Plan (2016);
- The Draft London Plan (2017);
- City of Westminster Planning Policy;
- London Borough of Wandsworth Planning Policy

The review highlighted key relevant policies to the proposal in the following areas Transport, Heritage, Views, Design, Open Space, Natural Environment, Ecology, Trees, River Thames, Safeguarded Wharves, Flood Risk, River Crossings, the Nine Elms Development Area and Battersea Power Station all of which will need to be taken into account as the project moves forward.

The review found that the principal of a new pedestrian and cycle bridge in this area is supported by both local and regional planning policy.

The review particularly found that the promotion of active travel and cycling is a key strategic aim shared across the planning policies of Westminster City Council, London Borough of Wandsworth and the Greater London Authority in line with the Mayor of London's Healthy Streets Agenda and the stated aim in the Draft London Plan (2017) for 80% of Londoners' trips to be on foot, cycle or public transport by 2041. The proposal for a new pedestrian and cycle crossing in this location which seeks to make a significant contribution to encouraging safe, sustainable transport methods is therefore is entirely consistent with these shared objectives.

The bridge is specifically identified as a vital element of London's new infrastructure and is included in a number of policy and key strategy documents including:

- The Vauxhall Nine Elms Battersea Planning Framework (2012);
- The Mayor of London's Connecting the Capital Vision (2015);
- The Mayor of London's Draft Transport Strategy (2017);
- The Draft London Plan (2017).

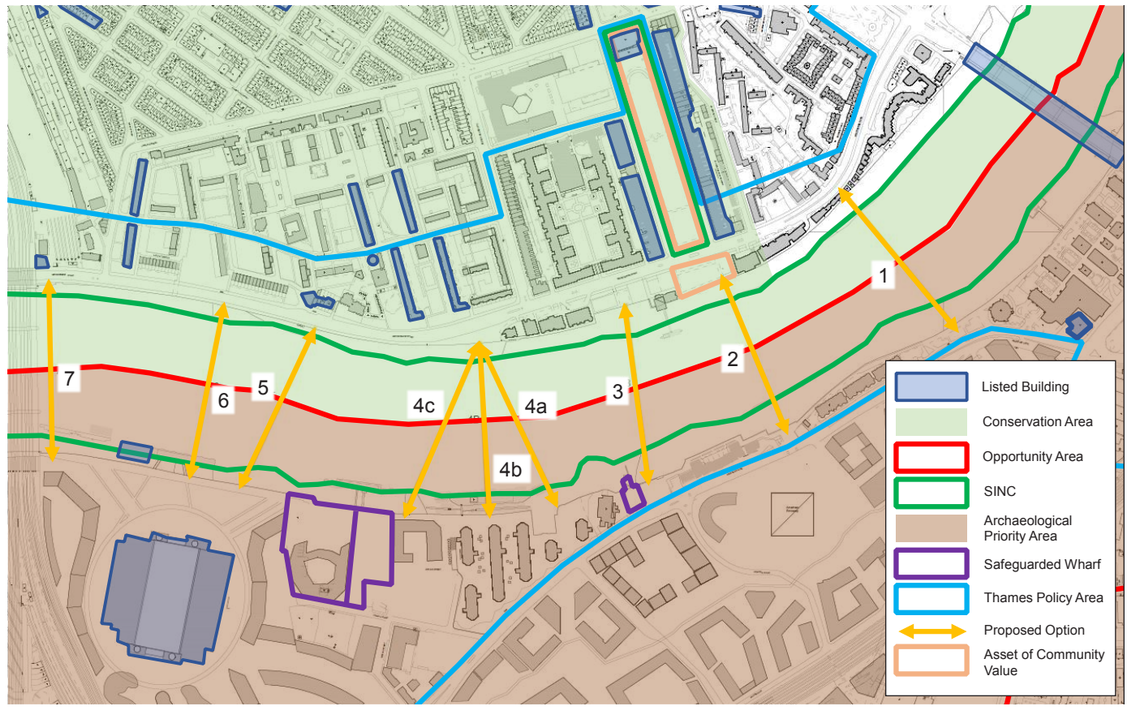
Planning Constraints

The review also identified the following series of planning and environmental issues as potential planning constraints and areas for further work and consideration though these issues are not currently considered to be insurmountable:

- Impact of Increased Pedestrian Flow and Impact on Residential Amenity
- Conservation Areas and Listed Buildings
- Assets of Community Value
- Views
- Archaeology
- Trees
- Ecology
- Hydrology
- Safeguarded Wharves
- Construction Impacts

The Planning Constraints Map below illustrates the significant site designations applicable to the identified potential landing points.

This analysis identifying the planning constraints has been incorporated into the wider appraisal process to support the recommendation for a reduction in the location options to be taken forward for further investigation in Stage 2 (Concept Design).



Planning constraints plan illustrating significant site designation applicable to the identified potential landing options

4.5 Planning

Areas for Further Investigation

The Planning Review also identified the following key areas for further investigation:

- **Statutory Consents Process**
  A new bridge would require full planning permission as it constitutes development together with additional consents including a Marine Licence, River Works Licence and Flood Defence Licence.

  The Statutory Consents Strategy for the Project will be determined during Stage 2, with options including:
  - The concurrent submission of two planning applications to Wandsworth and Westminster Councils
  - An application for an Order under the Transport Works Act 1992 (TWAO)

  Initial discussions on the options are on-going and have been conducted with both the Client and Key Stakeholders. TfL confirmed that the first route may be the most practicable, but also that the TWAO route could be a viable option.

  There may be benefits to the TWAO route, such as the potential to incorporate powers for land acquisition and additional consents in a single application. However, it is likely the TWAO process would take longer and be subject to additional costs.

  It has been recommended that both options should be considered in more detail during Stage 2 including obtaining specialist legal advice and if the TWAO option is to be pursued undertaking initial discussions with the Department for Transport.

- **Land Ownership**
  It was highlighted during the initial Stage of the project that land ownership may prove to be a significant constraint or opportunity for the development and that it may be a critical factor in the selection of the preferred location, the deliverability of the scheme and determining the preferred planning route. Preliminary investigations have been based on information from the 2013 Feasbility Study but it has been recommended that Land Ownership will be considered for a reduced number of locations during the next stage of the project.

Stakeholder Meetings

The Team has established links and met with the surrounding Local Authorities: Westminster City Council; London Borough of Lambeth; and London Borough of Wandsworth as well as the Greater London Authority and Statutory Consultees (see page 32 of this report for full list of engagement meetings undertaken).

The meetings provided an update on the status of the project and offered the key stakeholders the opportunity to directly input into the location appraisal.

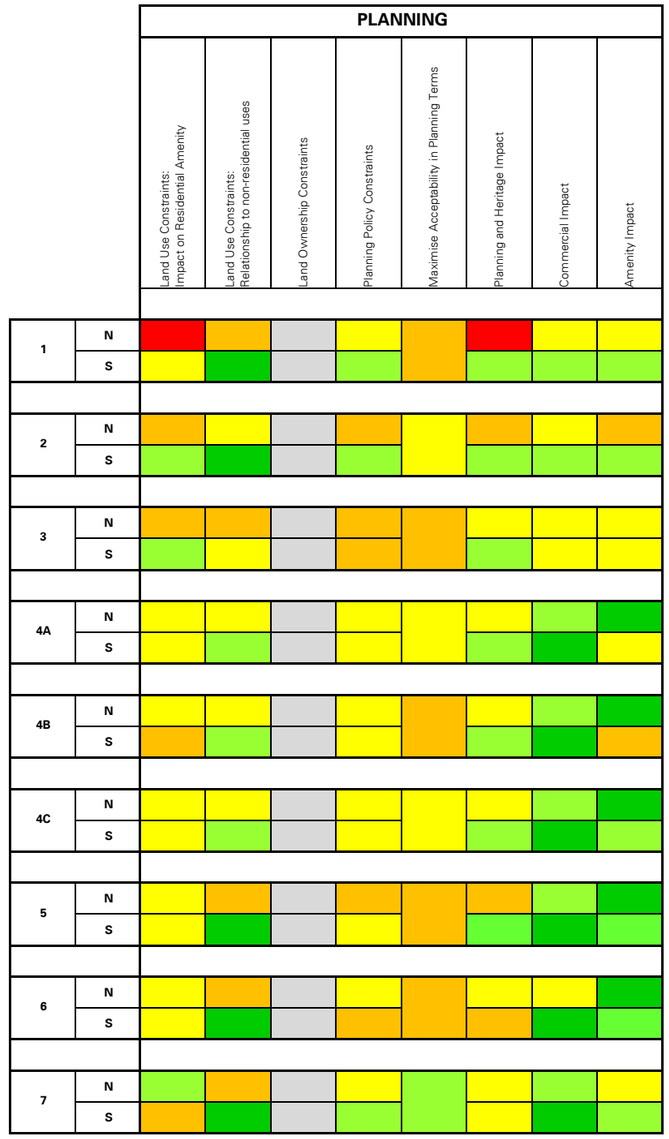
It is noted that there is a significant overlap between the identified planning policy constraints and the key issues which arose in consultation with stakeholders and the local community, including protection of green spaces, mature trees and potential impact of increased pedestrian flow on residential amenity. These issues have been identified as important areas for further investigation during the next stage.

The meetings with the four authorities along with other key Stakeholders resulted in a positive round of consultation directly informing the site location appraisals, and which will have a significant bearing on the reduction in the number of Location Options identified for further investigation at the next stage, as well as ultimately the selection of a preferred location.

All stakeholders were keen to engage, whether favourable or not to the principal of a new river crossing in this location. This engagement has allowed the Team to establish an initial network of Stakeholders and close correspondence will be continued with these key stakeholders as the Project progresses.

Criteria Assessment

- No Constraint / High Positive Impact / Major Benefit
- Minor Constraint / Positive Impact / Moderate Benefit
- Moderate Constraint / Neutral Impact
- Significant Constraint / Negative Impact / Moderate Harm
- Major Constraint / High Negative Impact / Major Harm
- Not Assessed at this Stage



Combined Planning Constraints Appraisal Assessment Matrix

4.6 Deliverability

Cost

The cost model developed for the 2015 competition concept proposal estimated the cost of the major bridge elements (including substructure, superstructure, finishes and services and landings) and net construction cost.

At this stage the same cost model is updated for inflation to August 2017 levels. No other changes have been made to the competition cost model assumptions. The model has been applied to each of the 9 location options to show the relative implications to cost of the bridge span lengths at each of the identified locations.

Option	Span	Relative Cost (August 2017)
1	231m	£41.9m
2	217m	£39.4m
3	242m	£43.9m
4A	248m	£45.0m
4B	235m	£42.7m
4C	256m	£46.5m
5	236m	£42.9m
6	237m	£43.0m
7	233m	£42.3m

Exclusions

1 Inflation beyond August 2017. Contract assumes a notional one day contract
2 Site acquisition and associated costs including land, agents, legal fees
3 Site investigation costs
4 Abnormal ground conditions, including consequential works and significant level of imported filling or removal of excavated material from site
5 Effect of discovery of archaeological artefacts or other antiquities, leading to delayed start
6 Allowance for extensive / specialist external works
7 Finance charges
8 VAT
9 Compensation to adjoining owners
10 Landscaping outside a notional 500m2 zone to each landing
11 Transport
12 Utilities diversion, reinforcement and abnormal connection charges
13 Phasing of works
14 Other third party costs
15 Ecology requirements - protected species etc.
16 Section 106 and 278
17 Road closure costs
18 Temporary access requirements
19 Artwork
21 Wind deflection
22 Utilities and routes across bridge for others

This sum equates to approximately £10950/m2 and initial benchmarking would place this between the Merchant Bridge, Manchester and Peace Bridge, Derry, but substantially below the cost for the Millennium Bridge, London or Infinity Bridge, Stockton.

Further cost analysis is planned in Stage 2 on the initial Concept Designs for the reduced number of location options identified for further investigation.

Further cost analysis will be undertaken in the subsequent stages of the Project. In particular the selection of a preferred location will allow construction costs to be more accurately determined and incorporated into an overall deliverability strategy along with detailed strategies for planning, procurement, construction and funding.

The technical analyses undertaken by the Team at this stage and detailed in this chapter have all been undertaken in consultation with key stakeholders and local communities. This engagement is described in the following section.

Criteria Assessment

- No Constraint / High Positive Impact / Major Benefit
- Minor Constraint / Positive Impact / Moderate Benefit
- Moderate Constraint / Neutral Impact
- Significant Constraint / Negative Impact / Moderate Harm
- Major Constraint / High Negative Impact / Major Harm
- Not Assessed at this Stage

	DELIVERABILITY			
	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms
1				
2				
3				
4A				
4B				
4C				
5				
6				
7				

Above: Combined Planning Constraints Appraisal Assessment Matrix

View of the operational Battersea Power Station (c.1950s)

Aerial view looking east towards the City, showing the Nine Elms development area under construction (c.2016).

Opposite Page: Competition Stage visualisation of Nine Elms Pimlico Bridge, looking south

5.0 Consultation

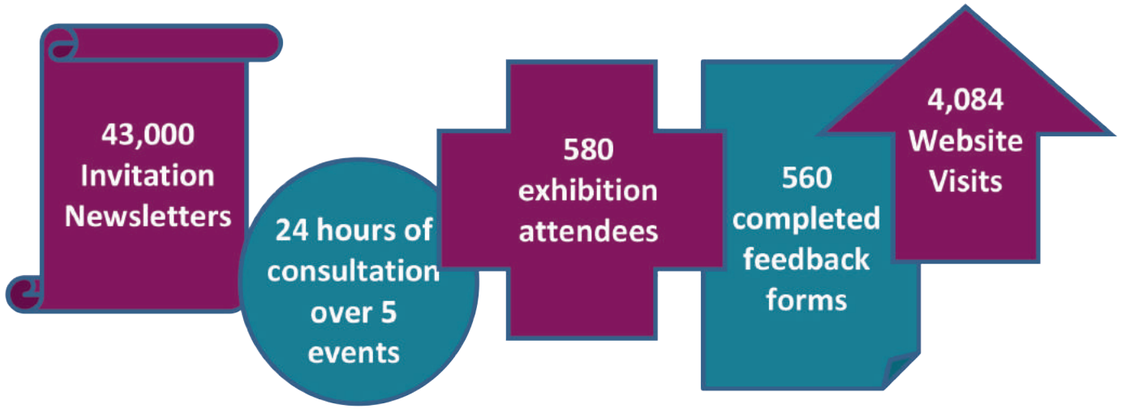
5.1 Consultation - Public Exhibitions

The project is being progressed in a collaborative way, in consultation with key stakeholders and local communities. A communications programme, completed during 2017 was designed to engage as widely as possible with the local community, as well as wider Londoners, to get feedback during this initial stage of consultation. A series of public exhibitions and meetings with local residents, groups, amenity organisations, political stakeholders and statutory consultees have allowed all relevant stakeholders the opportunity to input into the process from the earliest stage.

Public Exhibitions

The Design Team hosted public exhibitions over five days in June and July on the North Bank (Westminster), South Bank (Wandsworth) and in Lambeth to engage with local communities and stakeholders, providing an update on the project including the need for a bridge, current location options and the technical and feasibility work being undertaken.

- The public exhibitions were held in Westminster on 30th June and 1st July, Wandsworth on 7th and 8th July and Lambeth on 31st July to engage with local communities and stakeholders.
- Invitation newsletters promoting the events were distributed to some 43,000 households and local businesses in Westminster, Wandsworth and Lambeth. Newsletters were also issued directly to key local and London wide stakeholders as well as publicised via press and social media.
- Overall 580 people attended the exhibitions including local residents, politicians, members of local amenity groups and residents' associations, together with attendees from wider groups such as Sustrans and the London Cycling Campaign.
- Members of the Design Team were in attendance to explain the information, answer questions and gather feedback
- The exhibition consisted of a set of 12 presentation boards; these included the background to the project, details of the works currently being undertaken and outlined the consultation process.
- All visitors were encouraged to leave their views via a feedback form. The exhibition material was also made available online on the project website together with the opportunity to leave feedback.
- Feedback was collected using a questionnaire which could be completed at the exhibition, returned via Freepost or completed online. Questions sought to understand the issues that people viewed as important and their views on the proposals at this early stage, as well as to collect demographic and contact information to help analyse the feedback and enable future contact and engagement.
- 89% of feedback respondents lived locally (within 2 miles), with 45% from Westminster, 43% from Wandsworth, 14% from Lambeth and 3% from other boroughs.
- The exhibitions provided the opportunity for the Team to engage directly with the public and attendees were generally open and interested to discuss both the principle of a bridge and potential locations.

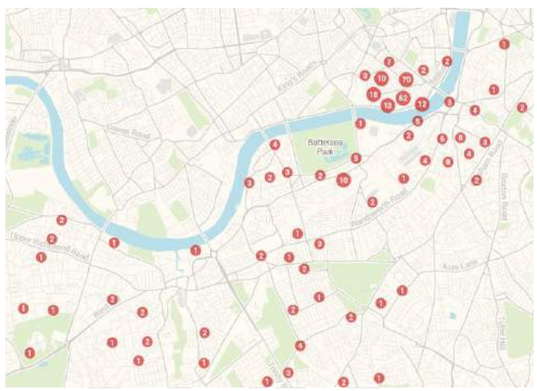


Key Outcomes:

- **While feedback forms did not specifically ask about levels of support and objection, views were made known in discussion, including:**
  - **Confirmation of some strong opposition on both sides of the River; and**
  - **Identification of a number of strong supporters on both sides of the river.**
- **Key matters for future consideration were raised.**

Feedback: Top 5 'Very Important' Issues

1. **Improving air quality.**
2. **Access to green spaces and the river walk.**
3. **Preservation of existing green spaces on both sides of the river.**
4. **High quality public space.**
5. **Creating safer infrastructure for pedestrians.**



Map indicating location of those who shared their feedback on the proposed bridge.

Westminster Public Exhibition (1st July 2017)

Wandsworth Public Exhibition (7th July 2017)

Lambeth Public Exhibition (31st July 2017)

5.1 Consultation - Public Exhibitions

Key matters raised in respondent feedback:

Need for the Bridge
One of the primary questions raised was: is there a need for a bridge in this general location? Further information as to the benefits of the bridge will need to be provided.

Nine Elms on the South Bank
There is a general lack of awareness of the Nine Elms regeneration area including the size of the development area, the number of jobs being created, the new town centre at Battersea Power Station and the amount of new public facilities and amenities that will be available for communities on both sides of the river. This scale of development is a key rationale for the Bridge and this needs to be explained.

Air Quality
There is concern over existing air pollution levels particularly along major roads and traffic intersections. Improving air quality was seen as the most important issue in the feedback.

Active Travel
There is interest in the potential to develop safer and less polluted pedestrian and cycle routes.

Connectivity
There is a desire to understand wider connectivity potential and how the bridge would connect with existing/proposed transport infrastructure networks to encourage active travel options, particularly at Grosvenor Road and Nine Elms Lane.

Access and Safety
Access and safety issues were raised in the feedback, particularly the integration of the bridge with local roads at the landings and the segregation of cyclists and pedestrians on the bridge itself.

Impact of potential locations on residential amenity and existing community facilities
Some feedback requested further information to understand the potential impacts on the surrounding roads, residential amenity, Westminster Boating Base and Nine Elms Pier.

Impact of potential locations on trees and green spaces
Some feedback highlighted the importance of access to green spaces, and raised concerns over potential impacts on green spaces and trees, and particularly the protection of Pimlico Gardens.

Funding and Timescales
A number of questions were raised as to how the bridge will be funded and the timescales in relation to other local projects such as Thames Tideway Tunnel and Battersea Power Station.

Reaching out more widely
Respondents want to see the ongoing consultation process engage with all parts of the local communities as well as interested parties throughout London.

Westminster Public Exhibition (30th June 2017)

Active Travel Workshop

5.2 Consultation - Stakeholder Engagement

The exhibitions formed part of the wider and on-going programme of consultation and engagement with community and statutory stakeholders, including:

Website

- The website www.nineelmspimlicobridge.co.uk was established as an electronic means of information sharing and gathering feedback as well as reaching a wider audience. In 2017 the website received 6,653 visitors.

Project Launch

- In February 2017 Wandsworth Council announced the start of a programme of exploratory works for a new car-free bridge across the Thames via a press release, the Council's website and a letter to a number of key stakeholders including:
  - The Mayor of London
  - The Deputy Mayor for Transport and the Deputy Mayor for Planning, Regeneration and Skills
  - GLA's Walking and Cycling Commissioner
  - Local MPs for Battersea, Vauxhall and the Cities of London and Westminster
  - All councillors from the London Borough of Wandsworth
  - The Leader of the Council, Senior Cabinet members and neighbouring ward councillors from Westminster City Council, London Borough of Lambeth and Royal Borough of Kensington & Chelsea
  - Nine Elms Landowners
  - Community groups and statutory consultees from Wandsworth, Lambeth and Westminster
  - Planning officers from the GLA, the London Borough's of Wandsworth and Lambeth and Westminster City Council
  - Local primary and secondary schools in Wandsworth, Lambeth and Westminster
  - London wide transport groups including the London Cycling Campaign, Living Streets and Sustrans

Presentations

- Participating in events such as the Liveable City: Cycling and Connectivity seminar at the Danish Embassy on 14th June 2017 and in an Active Travel Summit organised by New London Architecture on 2nd August 2017, which were particularly beneficial in engaging with potential stakeholders and interest groups.

Engagement Meetings

- Stakeholder briefing notes were prepared and issued to key political stakeholders and individuals.
- An extensive programme of engagement has been undertaken with Local Authorities and Statutory Stakeholders updating them on the status of the project, offering them the opportunity to input directly into the Location Appraisal and enabling the Team to understand their key technical requirements.
- During Autumn 2017 further consultation meetings were also offered to local residents' associations, community representatives, amenity organisations, political stakeholders potential users and statutory consultees as a follow up to the public consultation events held in the summer.

  At these meetings the Design Team gave a presentation on the background to the proposals followed by a detailed exploration of each of the nine location options currently being explored. This engagement allowed for more detailed discussions about the proposals with a focus on gathering further feedback on the nine location options under consideration.
- Initial meetings have been arranged and conducted with representatives from other current projects on the Thames such as the Illuminated River Project, Thames Tideway Tunnel, Rotherhithe Bridge and Sustrans to consider if there are any potential overlaps, mutually beneficial areas of collaboration or opportunities for shared information.
- Initial meetings have also been conducted with groups and individuals who have been identified as potential advocates of the project, e.g. New London Architecture.

Engagement meetings have been undertaken with all the stakeholders listed below who have been updated on the status of the project and offered the opportunity to input into the Location Appraisal.

Stakeholder
London Borough of Wandsworth
Westminster City Council
London Borough of Lambeth
Greater London Authority
Local Ward Councillors (North Bank)
Local Ward Councillors (South Bank)*
Transport for London
Environment Agency *
Port of London Authority
Historic England
Network Rail
Thames Tideway
Battersea Power Station *
Nine Elms Pier
Westminster Boating Base
Residents North of the River
Residents South of the River
Amenity Groups
Active Travel Groups

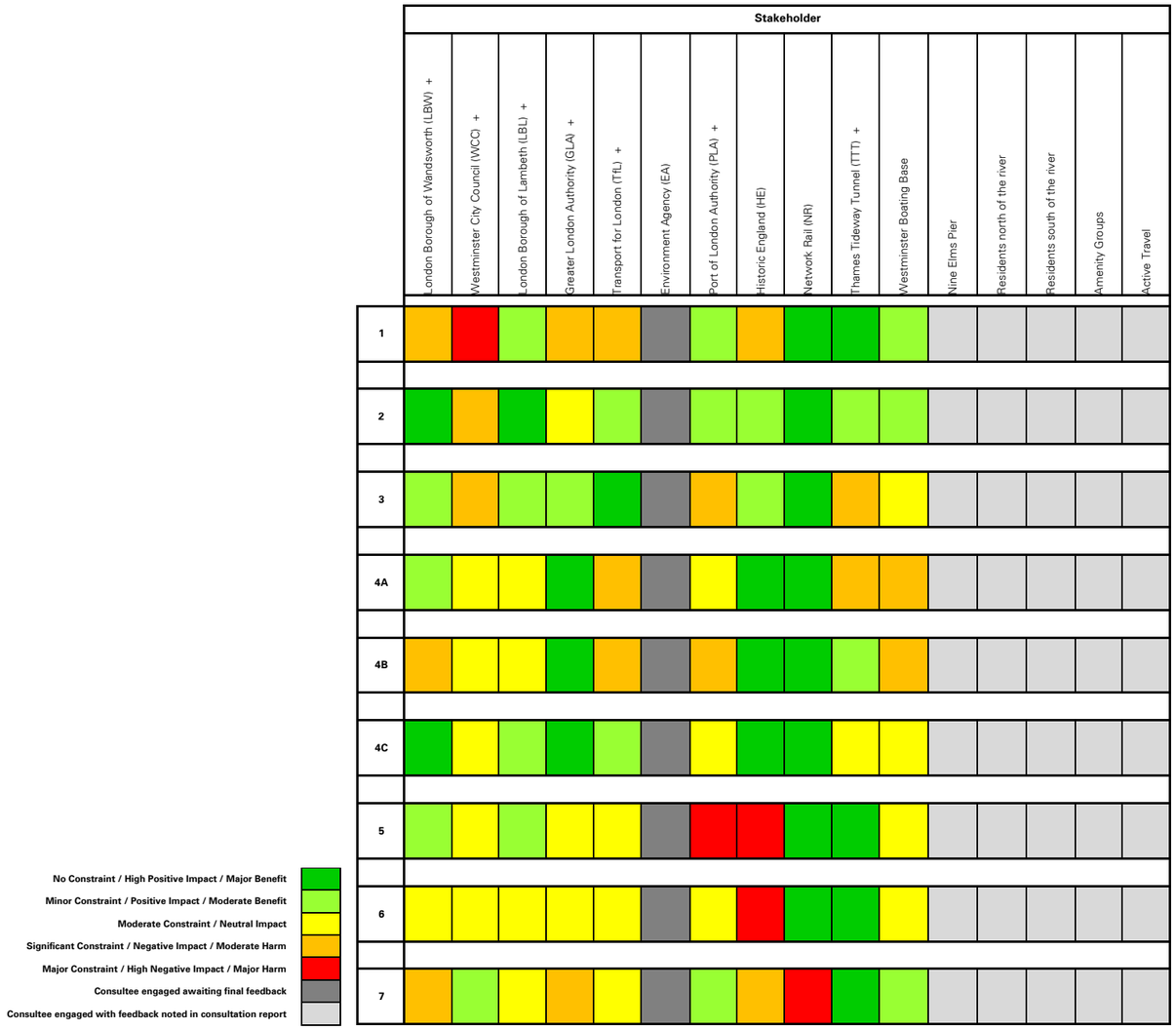
* Engaged but not provided formal input to Location Appraisal of all 9 options.

Stakeholder Assessment of Location Options

Key stakeholders have been offered the opportunity to provide their appraisal and comments on the 9 potential location options under investigation at this stage. In their consultation responses, stakeholders had the opportunity to provide any specific constraints, impacts or general issues relative to their interests.

The Stakeholder assessment results are summarised in the table below.

Local Residents and Amenity Groups have been engaged as part of this process and their comments have been incorporated into the Location Appraisal, however, they have not been attributed a specific colour grading in the Table below as the views of these groups were not unified with both supporters and objectors identified at both sides of the river.



\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

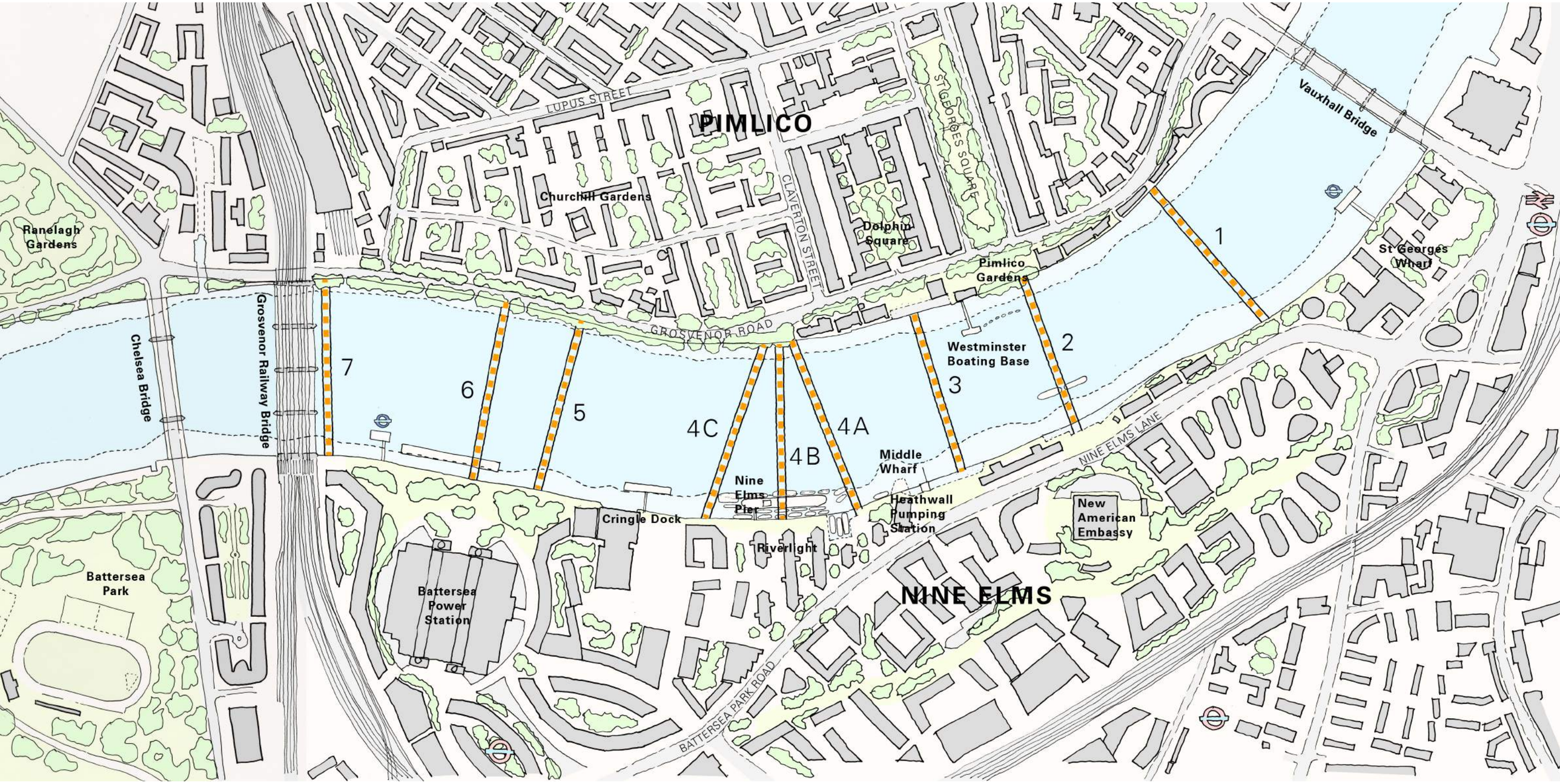
Key Outcomes of Consultation

- Most stakeholders were keen to engage, irrespective of their views on the bridge. This engagement has allowed the Team to establish an initial network of Stakeholders and close correspondence will be continued with these key stakeholders as the Project progresses.
- The public exhibitions and meetings with key stakeholders have resulted in a positive round of consultation directly informing the site location appraisals, and which will have a significant bearing on the reduction in the number of Location Options identified for further investigation at the next stage, as well as ultimately the selection of a preferred location. Input from this engagement has been directly fed into the assessment as described in the Location Appraisal in Section 6 of this report.
- Public Consultation has identified some strong opposition on both sides of the river as well as some strong support on both sides of the river.
- The consultation identified support for the proposals in general from Authorities and Statutory Consultees with no in principal objections to the idea of a crossing with the exception of Westminster City Council who require further information to demonstrate the need for the bridge and the integration with local infrastructure.
- Given the early stage of this consultation, detailed information on specific location options and other elements such as predicted user numbers was limited and it was clear that many consultees wanted further information as to the benefits the bridge would bring for communities on each side of the river and further afield.
- This early consultation was however valuable in opening up a dialogue with residents and stakeholders and has identified a number of key themes for further consideration at the next stage of the Project and future consultation, including:
    - **Need for the Bridge**: Further work is still required to demonstrate the need for a bridge in this area. Opposition and support for the bridge was split. However, it was clear that many want further information as to the benefits the bridge would bring for communities on each side of the river and further afield. A number of people were unaware that a location for the crossing and the design of the bridge was still to be finalised.
    - **Nine Elms on the South Bank:** There is a general lack of awareness of the Nine Elms regeneration area including the size of the development area, the number of jobs being created, the new town centre and the amount of new public facilities and amenities that will be available for communities on both sides of the river. The scale of development as a driver of demand and the consequent need for improved connectivity is a key rationale for the bridge.
    - **Air Quality:** Improving air quality is seen as an important issue in the feedback.
    - **Active Travel:** Interest in the potential to develop safer and less polluted pedestrian and cycle routes.
    - **Connectivity:** There is a desire to understand wider connectivity potential and how the bridge would connect with and impact upon existing/proposed transport networks.
    - **Access and Safety:** Access and safety issues are raised in the feedback, particularly the integration of the bridge with local routes at the landing points and the segregation/integration of cyclists and pedestrians on the bridge itself to ensure the bridge is accessible to all.
    - **Impact of potential locations on residential amenity and existing community facilities (including green spaces):** Some feedback requested further information to understand the potential impacts on the surrounding roads, residential and leisure amenity, green spaces and trees.

A report has been produced to describe the Consultation works undertaken in 2017 and feedback received.

Alongside the Technical Studies which the Team conducted at this stage the consultation with key stakeholders and local communities formed a crucial component of the overall Location Options Appraisal which is described in full in the following section.

6.0 Location Appraisal



Identified Location Options

6.1 Location Appraisal - Methodology

The Team have developed a Methodology, to allow each of the 9 location options to be assessed on a consistent and comparative basis against a range of factors, likely to affect the feasibility of constructing the bridge at each location.

Each location option is appraised in four respects,

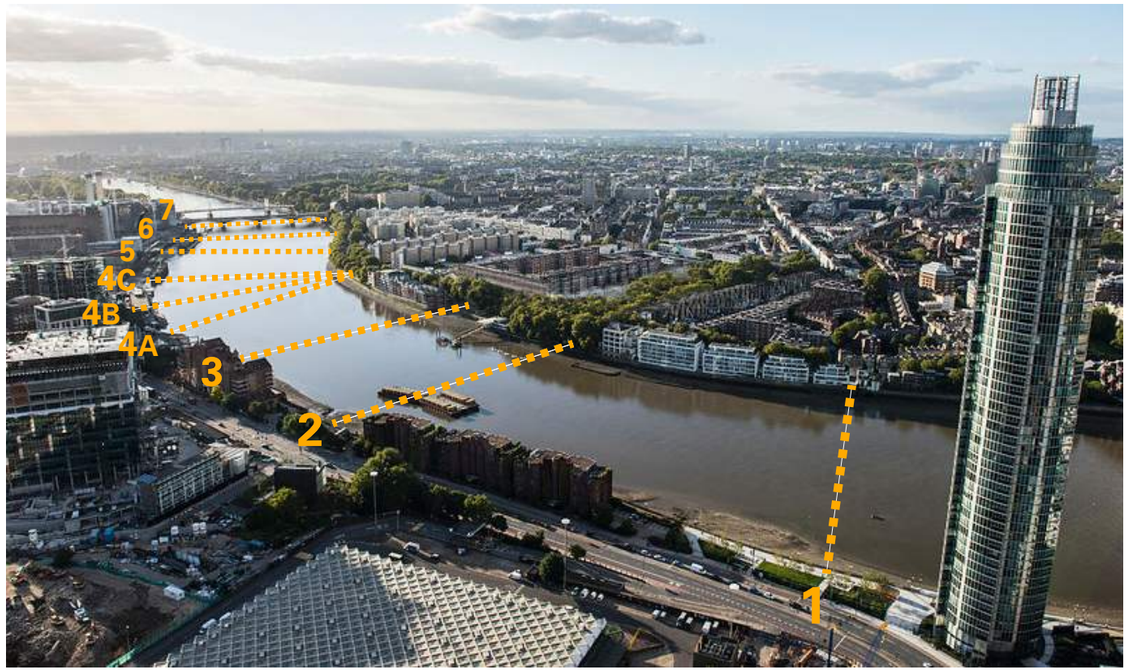
- Assessment of Technical Constraints
- Assessment to Meet the Project Objectives
- Assessment of Harms and Benefits
- Stakeholder Assessment of Location Options

The Methodology and appraisal have been developed in consultation with the following key stakeholders who have been given the opportunity to comment on the method of appraisal, criteria for appraisal and provide input directly into the options appraisal itself, including:

- London Borough of Wandsworth
- Westminster City Council
- London Borough of Lambeth
- Local MPs
- Local Ward Councillors
- Greater London Authority
- Transport for London
- Environment Agency
- Port of London Authority
- Historic England
- Network Rail
- Thames Tideway
- Nine Elms Pier
- Westminster Boating Base
- Battersea Power Station
- Residents North of the River
- Residents South of the River
- Local Amenity Societies
- Active Travel Groups

Under the assessment methodology each site is analysed against multiple criteria, which are set out in full on page 48 and 49 but include, for example, issues such as transport demand, local and city connectivity, heritage, and environmental issues including archaeology, ecology and arboriculture etc.

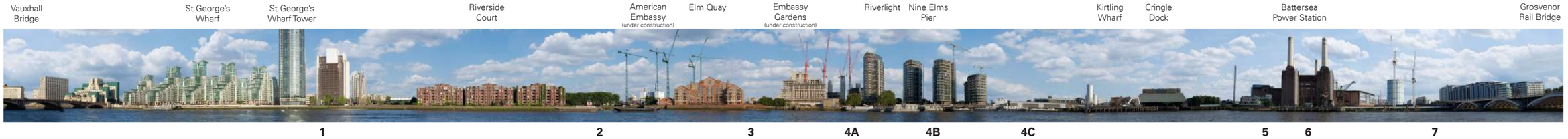
Each potential location has been comparatively assessed against each of these criterion in a series of appraisal matrices utilising a colour coded rating system. The methodology and appraisal of all criteria assessed is summarised in the following pages.



Aerial photograph showing the 9 identified location options

North Bank

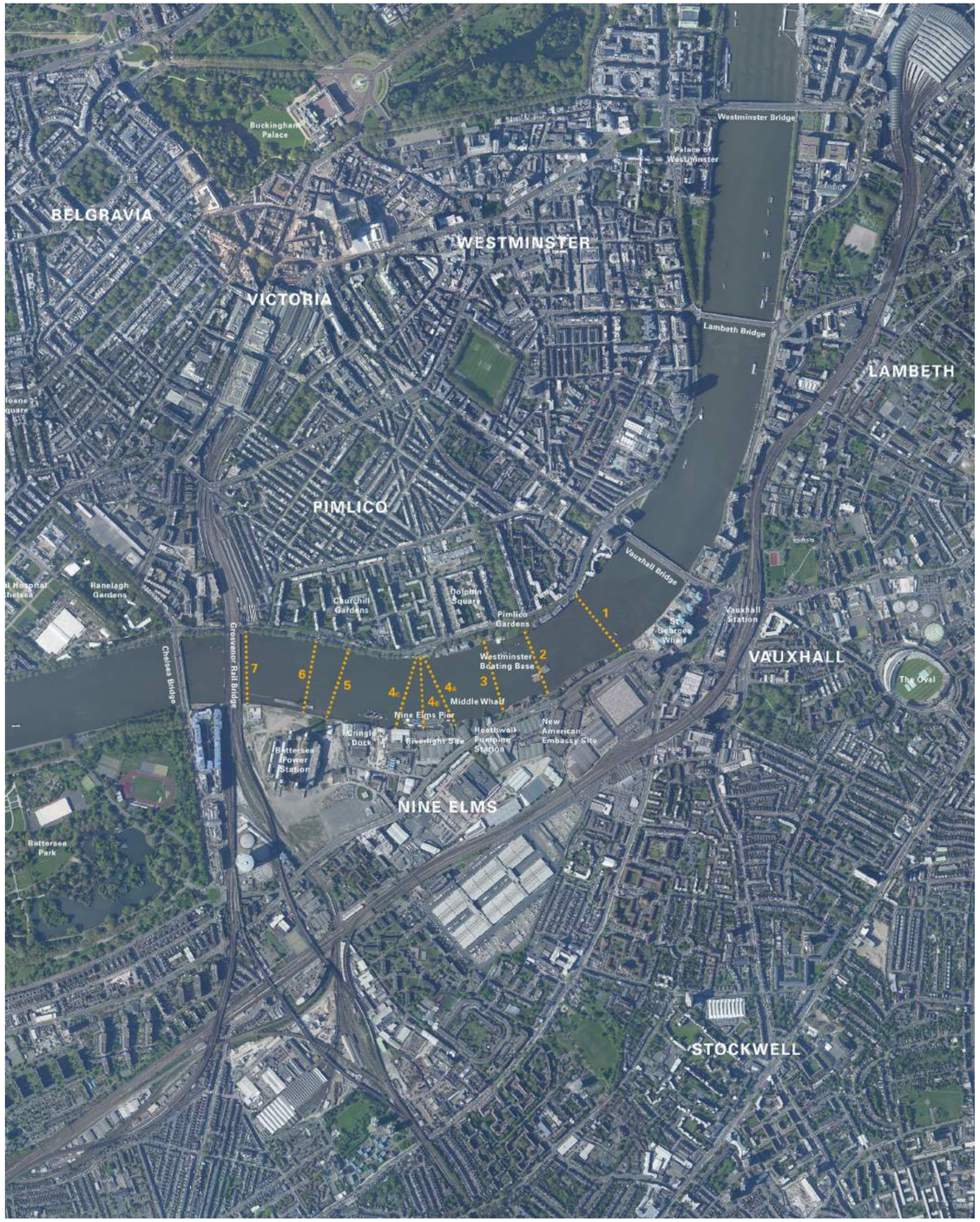
South Bank



Panoramas of the River Thames Panoramas between Vauxhall Bridge and Grosvenor Bridge (2014) showing Location Options
Credit: Panorama of the Thames Ltd

Opposite Page: Sketch plan showing the 9 identified Location Options

6.2 Location Appraisal - Location Options Assessment



The 2013 TfL Feasibility Study established a need for a pedestrian and cycle bridge to be located somewhere between the existing Chelsea and Vauxhall Bridges. As part of this study TfL identified a range of potential crossing locations.

The Project Team, in consultation with key stakeholders and the London Borough of Wandsworth, built on this previous analysis and sought to identify a series of potentially viable locations for a bridge on the Nine Elms Reach of the Thames which would be suitable for further investigation.

The identification of potential Location Options was particularly informed by the following:

- Location options considered in the 2013 TfL Feasibility Study.
- Additional location options identified by the team during the competition stage which were made viable by the design approach and concept.
- Initial site investigations made by the team during Stage 0 and 1 of the Project.

After evaluating all relevant and potential locations for a bridge on this stretch of the Thames, the Team identified 9 alignment options as feasible solutions for individual investigation.

The 9 location options identified for appraisal are listed in the table below.

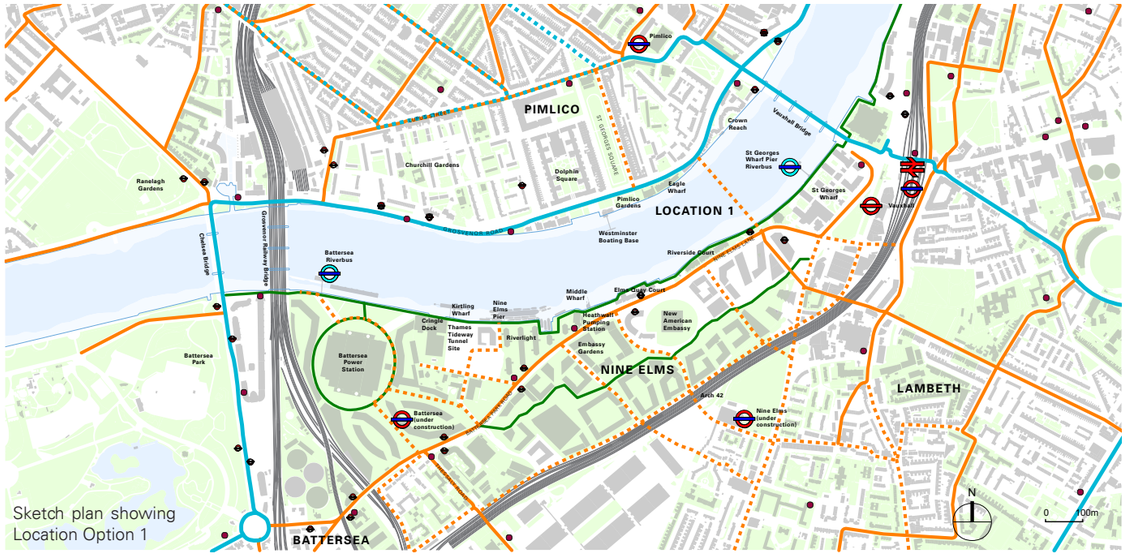
Location Option	North Landing	South Landing
1	Grosvenor Road (Tyburn Brook)	Riverside Gardens
2	Pimlico Gardens	Bourne Valley Wharf
3	Dolphin Square	Prescot Wharf
4A	Grosvenor Road (Claverton Street)	Riverlight East
4B	Grosvenor Road (Claverton Street)	Nine Elms Pier
4C	Grosvenor Road (Claverton Street)	Kirtling Street
5	Grosvenor Road (King William IV Pub)	Battersea Power Station (East)
6	Grosvenor Road (Churchill Gardens)	Battersea Power Station (Axis)
7	Grosvenor Road (Rail Bridge)	Battersea Power Station (Rail Bridge)

The Team in consultation with key stakeholders have applied the Appraisal Methodology described above to the identified sites.

The following sections summarise the outcomes of the appraisal for each of the identified location options. This includes a high level summary outlining the key pros and cons identified by both the Team and Stakeholder assessment and explaining the key grounds for elimination or further investigation.

The outcome of this analysis has arrived at a limited number of locations which are recommended for investigation in more detail at the next stage of the project.

6.2.1 Location 1 [Grosvenor Road (Tyburn Brook) to Riverside Gardens]



Assessment	Pros	Cons
Team	• Strongest relative transport demand. • Good landing space availability at the south bank. • Good riverside amenity space with public access at south bank. • Good local and wider connectivity at south bank.	• High impact on residential properties at the north bank. • Insufficient space at north bank for landing. • Poor local connectivity for cycle and pedestrian routes at the north bank. • High archaeological constraint compared to other sites. • Relatively close proximity to existing crossing.
Stakeholders	• London Borough of Lambeth note the strong cycle connectivity to the south and east for Lambeth and Wandsworth. • PLA, Network Rail and Thames Tideway all note limited impact to their operations and utilities at this location.	• All stakeholders commented on close proximity to Vauxhall Bridge limiting the connectivity benefit. • Westminster City Council and Westminster Residents note the major constraint of integrating a bridge landing with Grosvenor Road where there is not space available. • Historic England noted the area is archaeologically sensitive and could impact remains of a Bronze Age wooden henge in the river foreshore.

NOT RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Elimination	• Insufficient space at the north bank landing at Tyburn Brook for a bridge landing. • Major impact on residential properties immediately adjacent to the north bank landing. • Poor location for the integration of cycle and pedestrian bridge traffic into existing Grosvenor Road infrastructure. • Restricted city wide connectivity options north of the river, cycle superhighway 8 only. • Relatively close proximity to existing crossing.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisal
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel + 15m	Deliver on cost	Deliver value for money *	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Ojectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

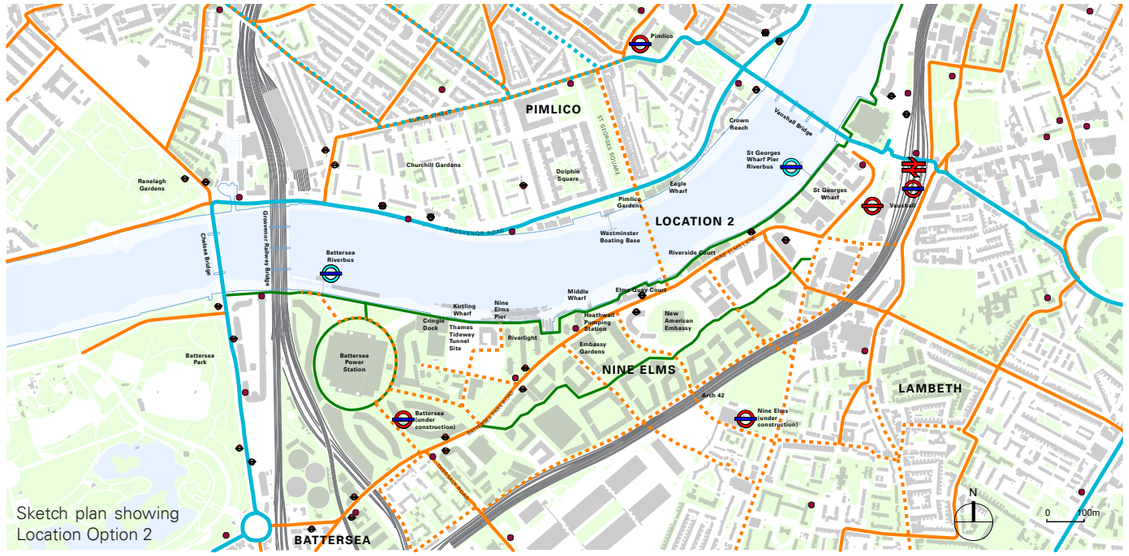
Stakeholder Appraisal - Stakeholder Response

London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.2 Location 2 [Pimlico Gardens to Bourne Valley Wharf]



Assessment	Pros	Cons
Team	• Strongest relative transport demand. • Good local and wider city connectivity on north and south bank. • Good landing space availability on both banks. • Good riverside amenity space with public access at north and south banks. • Narrowest crossing point of river (clear span).	• Potential impact on open green space, trees and public amenity. • Moderate and high quality densely spaced trees close to riverbank. • Pimlico Gardens Planning Policy protections.
Stakeholders	• WCC, LBL and GLA planning authorities note the strong cycle connectivity to the south, (via Arch 42) and potential to the north. • PLA, Network Rail and Thames Tideway all note limited impact to their operations and utilities at this location. • Westminster Boating Base noted that the close proximity of a bridge to their base at this location would have the lowest impact of all location options on their operations on the Nine Elms Reach of the Thames, and may allow for mutual benefits. • LBW, LBL, PLA, HE, NR, TT, WBB note no significant constraints to this location option.	• WCC and Westminster Residents strongly oppose the location for the perceived impact of cyclists and pedestrians on St George's Square, and Pimlico Gardens. • Westminster residents note strong concerns that the amenity and character of Pimlico Gardens would be harmed with impact to the trees. • GLA acknowledge the opposition in Westminster to this location and note the difficulty this presents in planning terms. • Wandsworth residents local to the south landing note concerns regarding the proximity of a bridge landing to residences on the south bank.

RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Further Investigation	• Good location technically for a bridge with sufficient space north and south of the river for landing and integration of pedestrians and cyclists into network. • Shortest distance across the river channel. • Crossing location best serves the transport demand. • Good connectivity north and south of the river, however further investigation required to determine the impact of cycle and pedestrian demand on St George's Square and crossing of Grosvenor Road. • Challenge to mitigate against significant impact on Pimlico Gardens green space and trees.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricoultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints +	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisa
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel +15m	Deliver on cost	Deliver value for money *	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

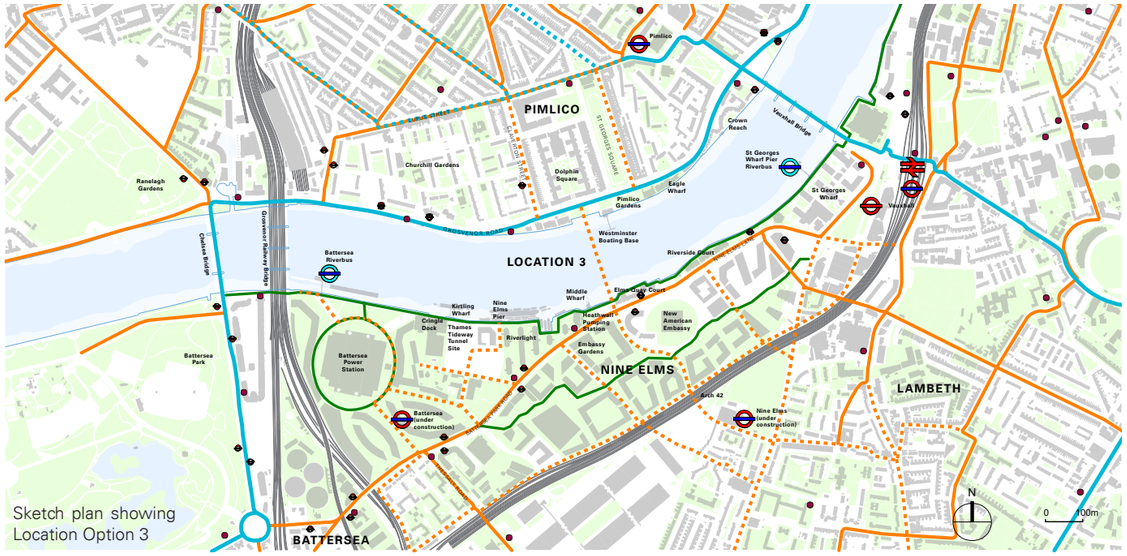
Stakeholder Appraisal - Stakeholder Response

	London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.3 Location 3 [Dolphin Square to Prescot Wharf]



Sketch plan showing Location Option 3

Assessment	Pros	Cons
Team	• Strongest relative transport demand. • Good wider connectivity at the north and south bank • Good landing space availability. • Good riverside amenity space with public access at south bank.	• North bank landing on publicly inaccessible private land. • Potential impact on Tennis Court / private amenity. • Proximity to Westminster Boating Base. • Proximity to Middle Wharf (vessel movements) • Thames Tideway Tunnel location may affect south foundations.
Stakeholders	• WCC, LBL and GLA planning authorities note the strong cycle connectivity to the south, (via Arch 42) and potential to the north. • Westminster Boating Base noted that the close proximity of a bridge to their base at this location may allow for mutual benefits. • LBW, LBL, GLA, HE, NR, note no significant constraints to this location option.	• WCC and Westminster Residents oppose the location for the perceived impact of cyclists and pedestrians on St George's Square, Claverton Street and Dolphin Square. • Westminster residents note that the potential north landing is privately owned by Dolphin Square who would stand to lose this private amenity space. • Wandsworth residents local to the south landing note concerns regarding the proximity of a bridge landing to Elm Quay Court the south bank • PLA concerns due to proximity of Middle Wharf.

RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Further Investigation	• Good location technically for a bridge with sufficient space north and south of the river for landing and management of pedestrians and cyclists. • Crossing location serves the transport demand well. • Good connectivity south of the river, however further investigation required to determine the impact of cycle and pedestrian demand on routes connecting to the north. • Challenge to mitigate against impact on operations of safeguarded Middle Wharf.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisal
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel +15m	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

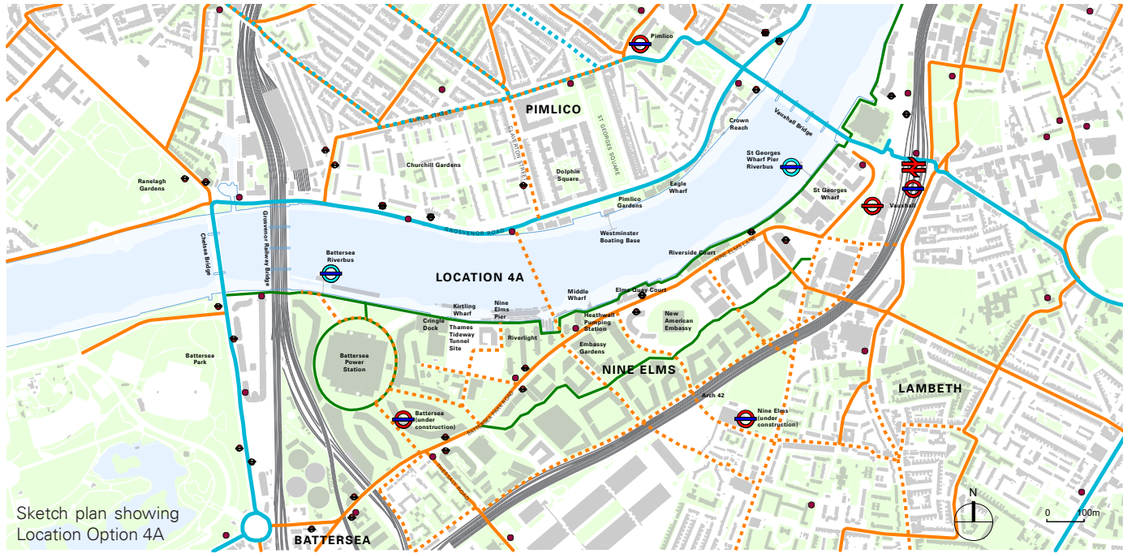
Stakeholder Appraisal - Stakeholder Response

London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.4 Location 4A [Grosvenor Road (Claverton Street) to Riverlight East]



Sketch plan showing
Location Option 4A

Assessment	Pros	Cons
Team	• Relatively good transport demand. • Good wider connectivity at the north and south bank. • Good riverside amenity space with public access at north and south banks. • Public leisure amenities at the south bank landing. • Central location between existing bridges.	• Limited landing space availability at north bank for this alignment. • Moderate to high quality trees close to riverbank at the north and south landings. • Impact on houseboat community at the south bank. • Thames Tideway Tunnel location may affect south foundations.
Stakeholders	• Wandsworth and GLA planning officers note the good cycle connectivity to the south, and strong potential to the north via Claverton Street. • WCC and Westminster residents acknowledge that the north landing alongside Grosvenor Road is riverside public space which is underused and could be improved. • LBW, WCC, LBL, GLA, PLA, HE and NR note no significant constraints to this location option.	• Westminster Boating Base noted that the north landing of a bridge at this location would have the biggest impact of all location options to their operations on the Nine Elms Reach of the Thames. • Westminster Residents are concerned about the impact of cyclists and pedestrians crossing Grosvenor Road and the perceived impact on Claverton Street and further connections north. • Nine Elms Pier note significant impact of a bridge landing on a limited number of houseboat moorings to the east of Nine Elms Pier.

NOT RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Elimination	• Position of Thames Tideway Tunnel with regards to southern landing foundations. • Impact on Nine Elms Pier houseboat residents.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisa
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel +15m	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

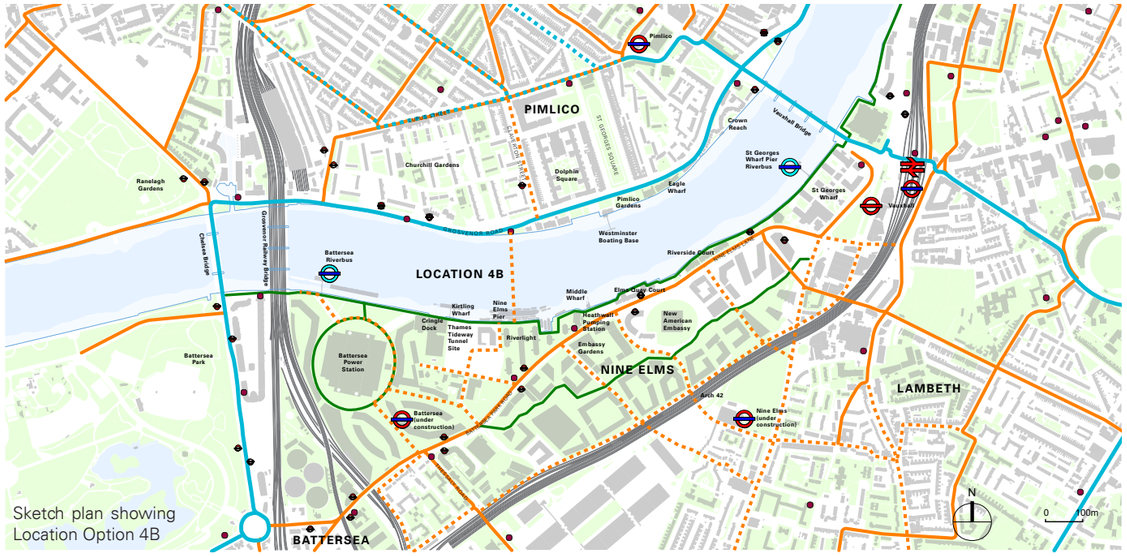
Stakeholder Appraisal - Stakeholder Response

London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.5 Location 4B [Grosvenor Road (Claverton Street) to Nine Elms Pier]



Assessment	Pros	Cons
Team	• Relatively good transport demand. • Good wider connectivity at the north and south bank. • Good riverside amenity space with public access at north bank. • Public leisure amenities at the south bank landing. • Central location between existing bridges.	• Limited landing space availability at north bank for this alignment. • Nine Elms Pier at the south bank. • Impact on houseboat community at the south bank. • Moderate to high quality trees close to riverbank at the north landing. • Impact on residents south of the river.
Stakeholders	• LBL and GLA note the good cycle connectivity to the south, and strong potential to the north via Claverton Street. • WCC and Westminster residents acknowledge that the north landing alongside Grosvenor Road is riverside public space which is underused and could be improved. • WCC, LBL, GLA, HE, NR and TT note no significant constraints to this location option.	• Westminster Boating Base noted that the north landing of a bridge at this location would have the biggest impact of all location options to their operations on the Nine Elms Reach of the Thames. • Westminster Residents are concerned about the impact of cyclists and pedestrians crossing Grosvenor Road and the perceived impact on Claverton Street and further connections north. • LBW and Nine Elms Pier note significant impact of a bridge landing on Nine Elms Pier and all of its houseboat moorings.

NOT RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Elimination	• Major constraint of Nine Elms Pier structure and level of mitigation necessary to enable a bridge landing at the south bank. • Impact on Nine Elms Pier houseboat residents.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisal
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

Connective			Sustainable		Innovative						Deliverable			
Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel + 15m	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

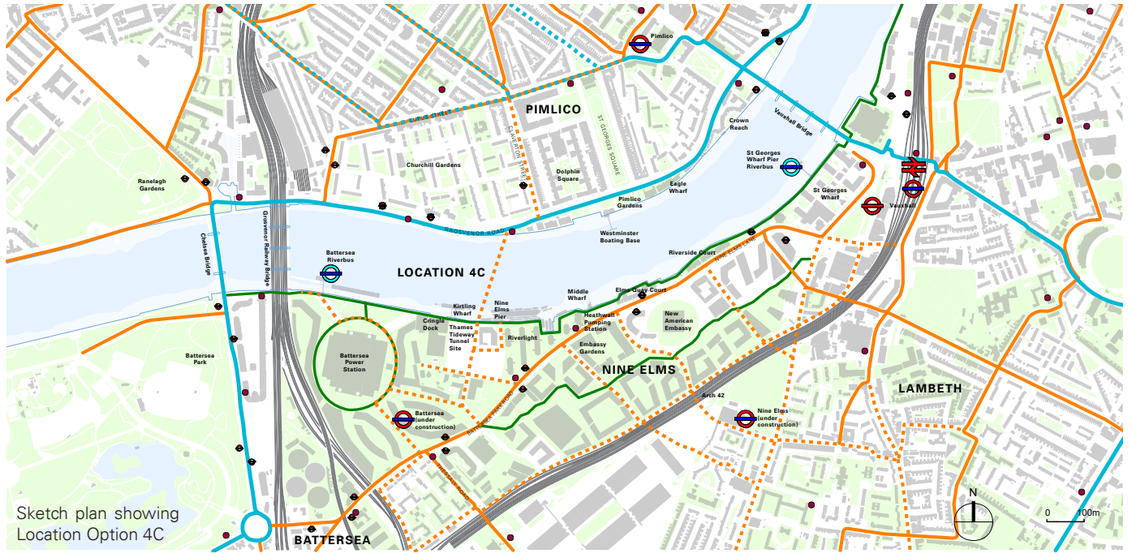
Stakeholder Appraisal - Stakeholder Response

London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.6 Location 4C [Grosvenor Road (Claverton Street) to Kirtling Street]



Assessment	Pros	Cons
Team	• Relatively good transport demand. • Good wider connectivity at the north and south bank • Good landing space availability at north and south bank for this alignment. • Undeveloped site at south bank landing. • Good riverside publicly accessible amenity landing space north and south of the river. • Central location between existing bridges.	• Moderate to high quality trees close to riverbank at the north landing. • Some impact on and houseboat community at the south bank. • Proximity to safeguarded Kirtling Wharf. • Relatively long span. • Higher relative construction cost.
Stakeholders	• LBL and GLA note significant potential benefits for development on the south bank to be explored. • The TT diverts out of the river channel at this location and its access shaft protection zone could provide an access route. • LBL and GLA note good potential pedestrian and cycle connectivity to both north and south. • WCC and Westminster residents acknowledge potential north landing as underused public space. • LBW, WCC, LBL, GLA, HE, NR no significant constraints.	• Westminster Boating Base noted that the north landing of a bridge at this location would have the biggest impact of all location options to their operations on the Nine Elms Reach of the Thames. • Westminster Residents are concerned about the impact of cyclists and pedestrians crossing Grosvenor Road and the perceived impact on Claverton Street and further connections north.

RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Further Investigation	• Sufficient space north and south of the river for landings to integrate pedestrians and cyclists into the transport network. • Less opposition from Westminster residents. • Crossing location is central on the Nine Elms Reach of the Thames and serves demand, particularly by good connectivity to the new Battersea Power Station development. • Potential opportunity to develop a coordinated scheme marrying the bridge with BPS's outline planning consent for Phase 7. Subject to further investigation this may result in significant benefits. • Potential for significant benefit to the south bank river walk, completing connection to proposed high level walkway. • Good connectivity north and south of the river, however further investigation required to determine the impact of cycle and pedestrian demand on Claverton Street and further connections north. • Coordination to overcome challenges with stakeholders, landowners and residents at the south landing.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisa
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel +15m	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

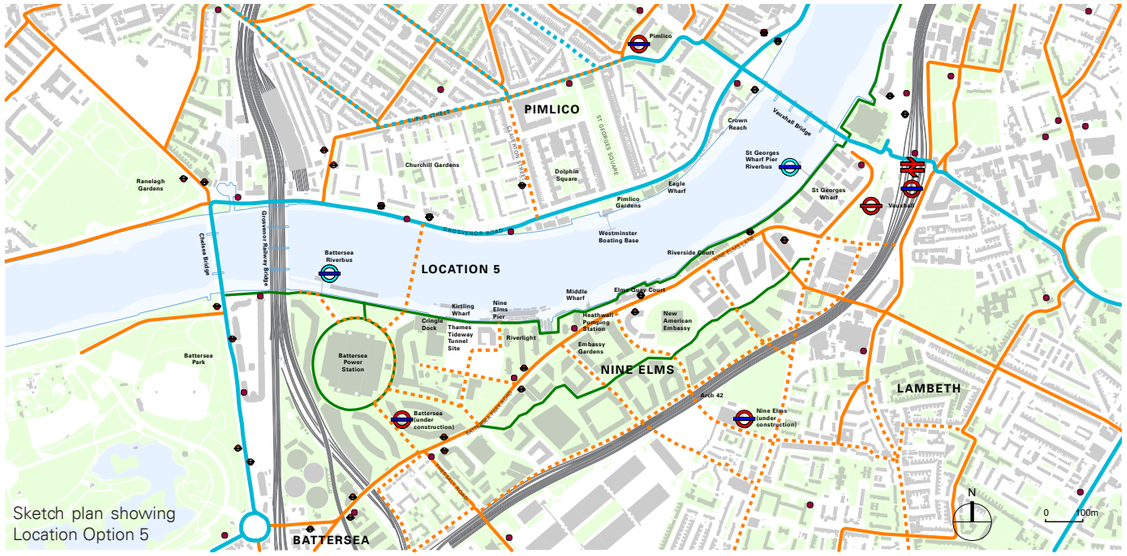
Stakeholder Appraisal - Stakeholder Response

	London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.7 Location 5 [Grosvenor Road (King William IV Pub) to Battersea Power Station (East)]



Assessment	Pros	Cons
Team	• Good landing space availability at the south bank. • Good riverside amenity space with public access is proposed at the south bank.	• Relatively low transport demand. • Relatively poor wider connectivity at the north and south bank. • Poor landing space availability at the north bank. • Moderate to high quality trees close to riverbank at north landing. • Management of public space for cyclists at the south bank. • Proximity to Safeguarded Cringle Dock.
Stakeholders	• LBW note good connectivity to the Battersea Power Station development and integration into the new south bank riverside. • LBW, LBL, GLA, NR, WBB and TT note no significant constraints to this location option.	• Historic England note the significant impact on the heritage setting and last remaining open view of Battersea Power Station. • PLA note the operations of vessels accessing Cringle Dock would be significantly impacted by a bridge at this location. • Westminster Residents are concerned about the impact of cyclists and pedestrians crossing Grosvenor Road where space is significantly constrained.

NOT RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Elimination	• Insufficient space at north bank Grosvenor Road landing to manage and integrate cyclists into the transport network. Significant mitigation works through alternative design would be necessary. • Relatively low demand at this location. • Restricted city connectivity options north of the river due to impermeability of Churchill Gardens to cyclists and pedestrians, meaning cycle superhighway 8 is the only connection. • Impact on the heritage setting of Battersea Power Station. • River vessels turning at this location in the river and accessing Cringle Dock on the South Bank.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisal
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel + 15m	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

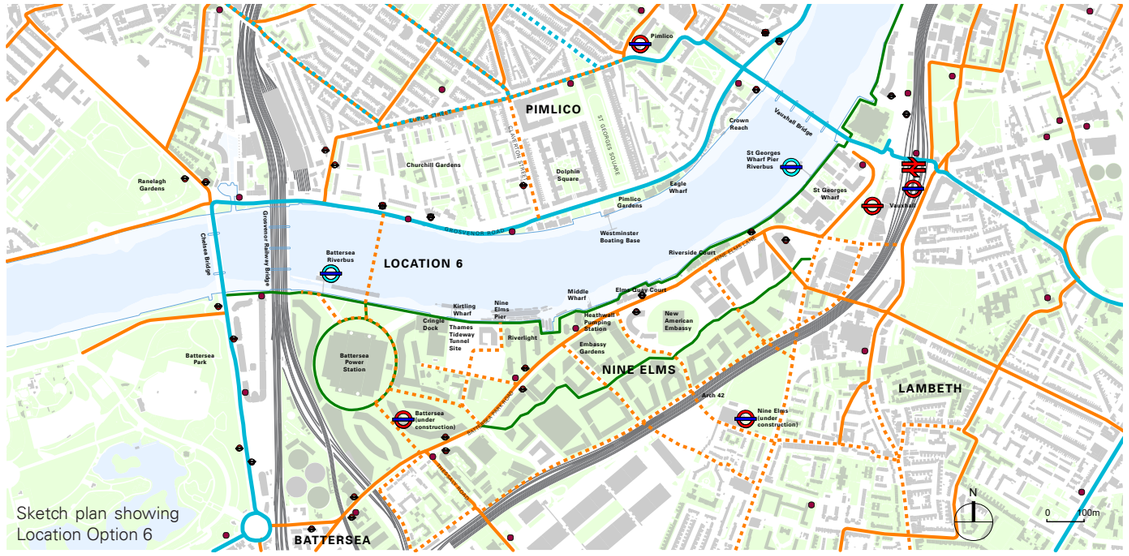
Stakeholder Appraisal - Stakeholder Response

London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.8 Location 6 [Grosvenor Road (Churchill Gardens) to Battersea Power Station (Axis)]



Assessment	Pros	Cons
Team	• Good landing space availability at the south bank. • Good riverside amenity space with public access is proposed at the south bank. • Good access to Battersea Power Station.	• Relatively low transport demand. • Relatively poor wider connectivity at the north and south bank. • Insufficient landing space availability at north bank. • Moderate to high quality trees close to riverbank at north landing. • Management of public space for cyclists at south bank. • Townscape and heritage concerns in relation to Battersea Power Station.
Stakeholder	• LBW and LBL note good connectivity to the Battersea Power Station and BPS Park as destinations. • LBW, WCC and GLA note the potential townscape and place making benefit of alignment on access with Battersea Power Station - reference to the Millennium Bridge. • LBW, WCC, LBL, GLA, HE, NR and TTT note no significant constraints to this location option.	• Historic England note the significant impact on the heritage setting and last remaining open view of Battersea Power Station. • Westminster Residents are concerned about the impact of cyclists and pedestrians crossing Grosvenor Road where space is significantly constrained. • PLA note the operations of vessels turning are a constraint at this location.

NOT RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Elimination	• Insufficient space at the north bank Grosvenor Road landing to manage and integrate cyclists into the transport network. Significant mitigation works through alternative design would be necessary. • Relatively low demand at this location. • Restricted city connectivity options north of the river due to impermeability of Churchill Gardens to cyclists and pedestrians, meaning cycle superhighway 8 is the only connection. • Impact on the heritage setting of Battersea Power Station. • Constraint of access over Battersea Power Pier which houses 2 listed crane structures.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints **	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricoultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisa
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel +15m	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

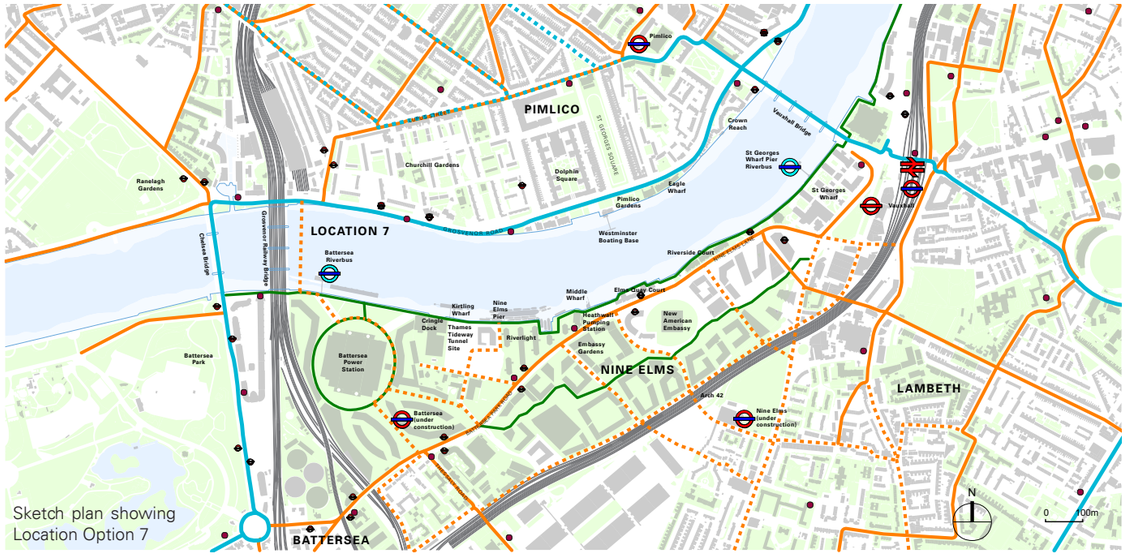
Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

Stakeholder Appraisal - Stakeholder Response

London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.2.9 Location 7 [Grosvenor Road (Rail Bridge) to Battersea Power Station (Rail Bridge)]



Assessment	Pros	Cons
Team	• Good access to Battersea Power Station. • Minimal impact on river traffic navigation adjacent to Railway Bridge. • Access to the proposed Thames Clipper river bus stop.	• Relatively low transport demand. • Relatively poor wider connectivity at the north and south bank. • Insufficient landing space availability at north bank. • Poor user experience of crossing alongside railway. • Moderate to high quality trees close to riverbank at the north landing. • Management of public space for cyclists at the south bank. • Proximity to existing piers and Thames Clipper Pier. • Relatively close proximity to existing crossing. • Negotiate agreements with Network Rail.
Stakeholders	• PLA and WBB note that a bridge directly adjacent to the Grosvenor Rail Bridge piers would have minimal impact on river vessel navigation. • WCC and Westminster residents note that this would be their preferred location, with residents noting the possibility of wider connectivity northwards made alongside the railway lines. • WCC, PLA, WBB and TT note no significant constraints to this location option.	• Network Rail note major constraint posed by Grosvenor Rail Bridge in terms of access for rail operations, maintenance, structure, user safety, risk, liabilities and legal agreements. • LBW, LBL, GLA commented on close proximity to Chelsea Bridge and restricted local connectivity due to the adjacent railway bridge. • Historic England note there are archaeological and listed buildings as constraints to this location.

NOT RECOMMENDED FOR FURTHER INVESTIGATION

Grounds for Elimination	• Not feasible from a Network Rail perspective - prohibitively constrained by the operations and management of Grosvenor Rail Bridge and Grosvenor Sidings. • Insufficient space at the north bank Grosvenor Road landing to manage and integrate cyclists into the transport network. Significant mitigation works through alternative design would be necessary. • Lowest demand at this location with poor connectivity north and south. • Poor user experience for cyclists and pedestrians caused by adjacent busy rail bridge. • Constraint of Battersea Power Station river bus pier and Thames Clipper operations.

Technical Appraisal - Constraint Assessment

	Transport		Spatial				Environmental*							River Use	Planning and Heritage					
	Local Transport Connection Constraints	City Wide Transport Connection Contraints	Navigational Clearance Requirement Constraints *	Landing Condition Constraints	Engineering Constraints	Utility Constraints	Archaeological Constraints	Arboricultural Constraints	Ground Condition Constraints	Ground Water and Flood Risk Constraints	Aquatic Ecology Constraints	Terrestrial Ecology Constraints	Noise Constraints	River Use Constraints	Land Use Constraints: Impact on Residential Amenity	Land Use Constraints: Relationship to non-residential uses	Land Ownership Constraints	Townscape Constraints	Conservation and Heritage Constraints	Planning Policy Constraints
N																				
S																				

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

Technical Appraisal
Constraint Assessment
None
Minor Constraint
Moderate Constraint
Significant Constraint
Major Constraint
Not assessed at this stage

Appraisal to Meet Objectives

	Connective			Sustainable		Innovative						Deliverable			
	Responds to demand / desire lines	Quality of user experience	Equal treatment to both sides of the river	Improve user safety	Minimise impact at landings	Enhance public realm	Enhance heritage setting	Provide level and open access for all from river bank	Integration of bridge users on a shared surface	Achieve PLA requirements 150m Clearance	Achieve PLA requirements Navigational Channel + 15m	Deliver on cost	Deliver value for money	Minimise disruption from construction	Maximise Acceptability in Planning Terms

Objectives Appraisal
Objectives Assessment
Meets all aspects of Objective
Meets most aspects of Objective
Meets some aspects of Objective
Meets few aspects of Objective
Fails to meet Objective
Not assessed at this stage

Impact Appraisal - Harms and Benefits Assessment

	Transport	Spatial	Environmental	River Use	Planning and Heritage	Commercial	Amenity
N							
S							

Impacts Appraisal
Harms and Benefits Assessment
Positive - Major Benefit
Positive - Moderate Benefit
Neutral Impact
Negative - Moderate Harm
Negative - Major Harm

Stakeholder Appraisal - Stakeholder Response

London Borough of Wandsworth (LBW) +	Westminster City Council (WCC) +	London Borough of Lambeth (LBL) +	Greater London Authority (GLA) +	Transport for London (TfL) +	Environment Agency (EA)	Port of London Authority (PLA) +	Historic England (HE)	Network Rail (NR)	Thames Tideway Tunnel (TTT) +	Westminster Boating Base	Nine Elms Pier	Residents north of the river	Residents south of the river	Amenity Groups	Active Travel

Stakeholder Appraisal
Stakeholder Response
No Constraint / High Positive Impact / Major Benefit
Minor Constraint / Positive Impact / Moderate Benefit
Moderate Constraint / Neutral Impact
Significant Constraint / Negative Impact / Moderate Harm
Major Constraint / High Negative Impact / Major Harm
Consultee engaged, awaiting final feedback
Consultee engaged with feedback noted in consultation report

\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

6.3 Location Appraisal - Comparative Assessment Summary

Assessment of Technical Constraints

The constraints of each site location option have been appraised by considering a range of factors which are likely to have a significant bearing on the relative feasibility of constructing a bridge at each of the identified locations.

The analysis has been supported by detailed technical studies undertaken by specialists in the Project Team including Design, Engineering, Access, River Use, Transport, Environment, Cost, Planning and Heritage and developed in consultation with stakeholders.

This Technical Constraints appraisal has been undertaken by the Project Team and utilises a colour coded rating system to comparatively assess each site against each of the identified criteria set out below. The findings of the technical assessments are summarised in the cumulative matrix below:

* Environmental technical appraisal excludes any migration which may reduce the level of constraint.
** For Navigation clearance requirement N = 150m Clear / S = PLA Navigational Clearance + 15m either side.

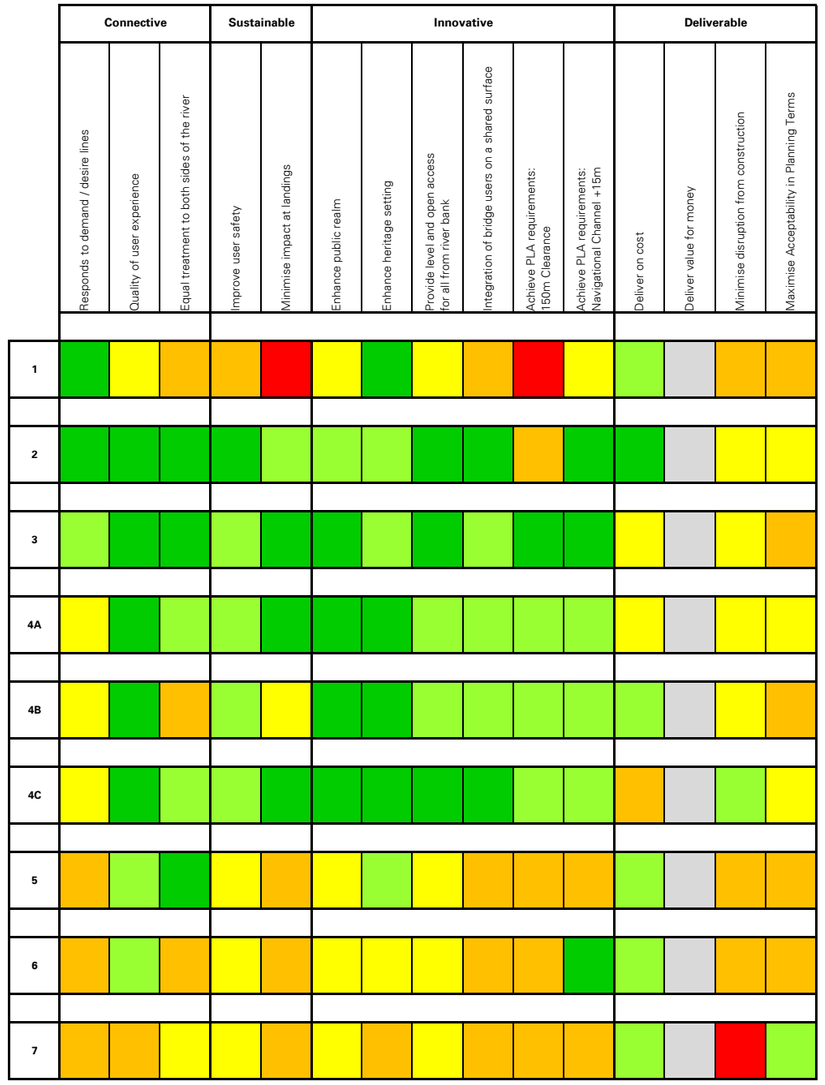
Assessment of Technical Constraints - Comparative Appraisal Matrix

Assessment to Meet Objectives

The Objectives of the Project are defined in the initial Project Brief. The ability to meet each of the identified Project Objectives at each site location have been assessed by the Project Team using a colour coded rating system set out below.

The analysis has been developed in consultation with stakeholders has been supported by detailed technical studies undertaken by specialists in the Project Team including Design, Engineering, Access, River Use, Transport, Environment, Cost, Planning and Heritage.

The assessment of each location's ability to meet the Project Objectives is summarised in the cumulative matrix below:



Assessment to Meet Objectives - Comparative Appraisal Matrix

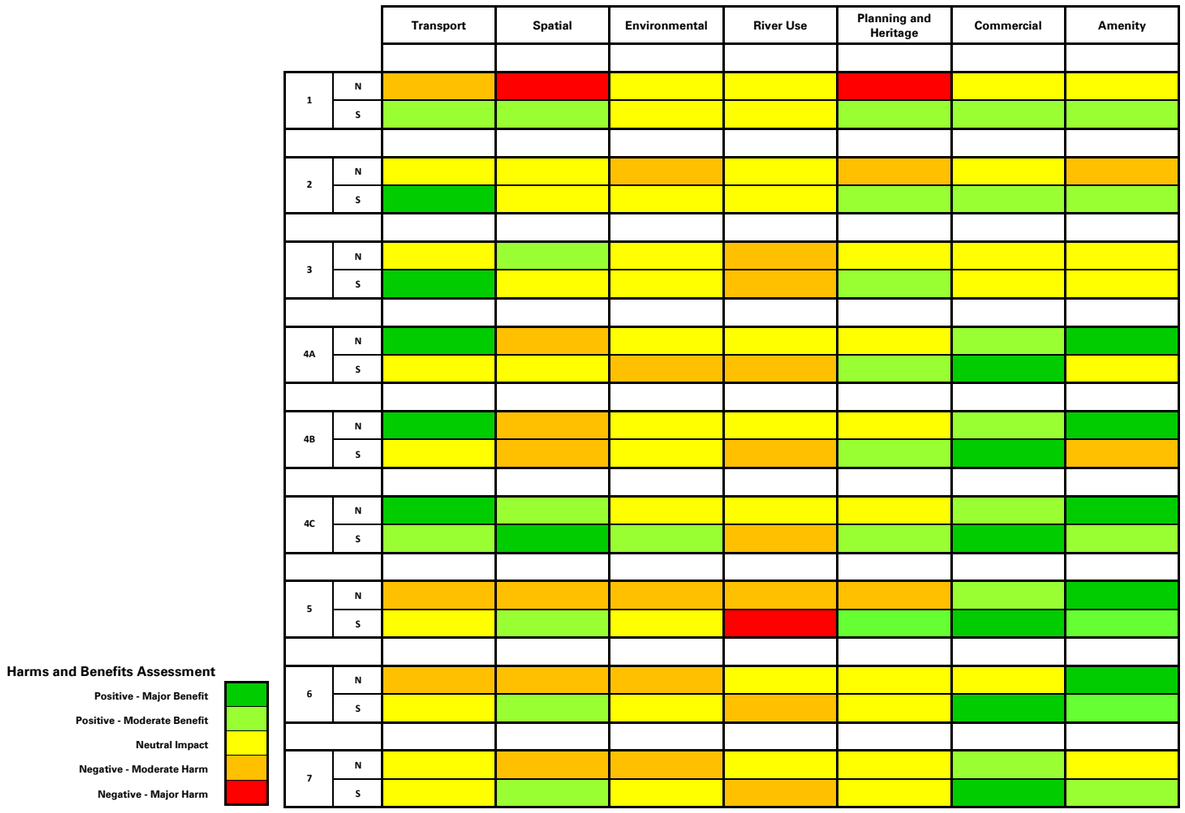
Assessment of Harms and Benefits

The potential positive and negative impacts of a cycle and pedestrian bridge at each site location option have been appraised as 'harms' and 'benefits'.

This assessment has been undertaken by the Project Team considering their technical and objective assessments and feedback from consultation with stakeholders.

Perceived harms and benefits have been appraised for each potential site location using the colour coded rating system set out below for the following impact assessment categories: Transport, Spatial, Environmental, River Use Planning and Heritage, Commercial Amenity. It is noted that the rating scale ranges from major benefit to major harm, and as a result an overall assessment grade may reflect a balance between the two.

The assessment of harms and benefits at each site location are summarised in the comparative matrix below:



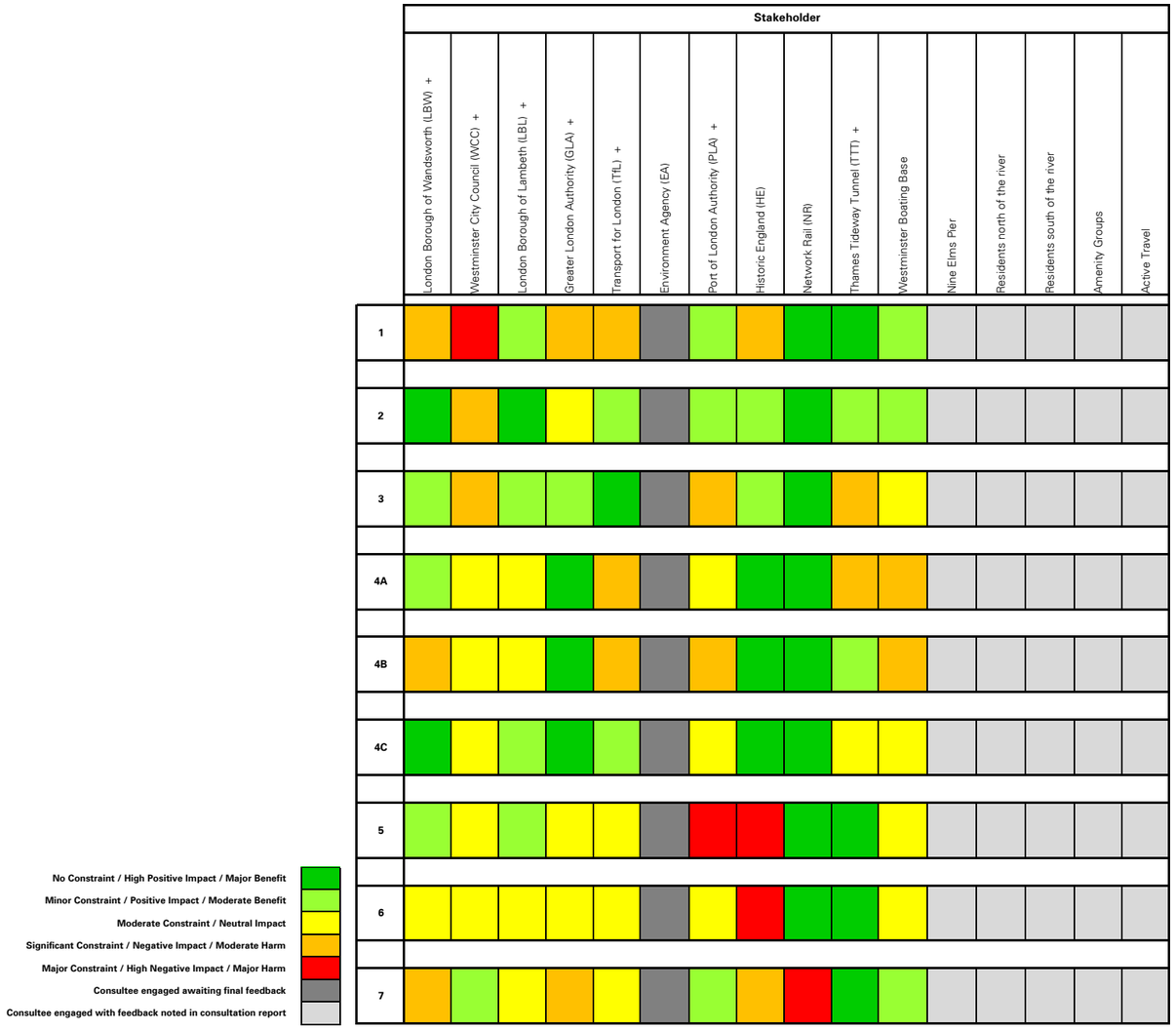
Assessment of Harms and Benefits - Comparative Appraisal Matrix

Stakeholder Assessment

Key stakeholders have been offered the opportunity to provide their appraisal and comments on the 9 potential location options. In their consultation responses, stakeholders had the opportunity to provide any specific constraints, impacts or general issues relative to their interests.

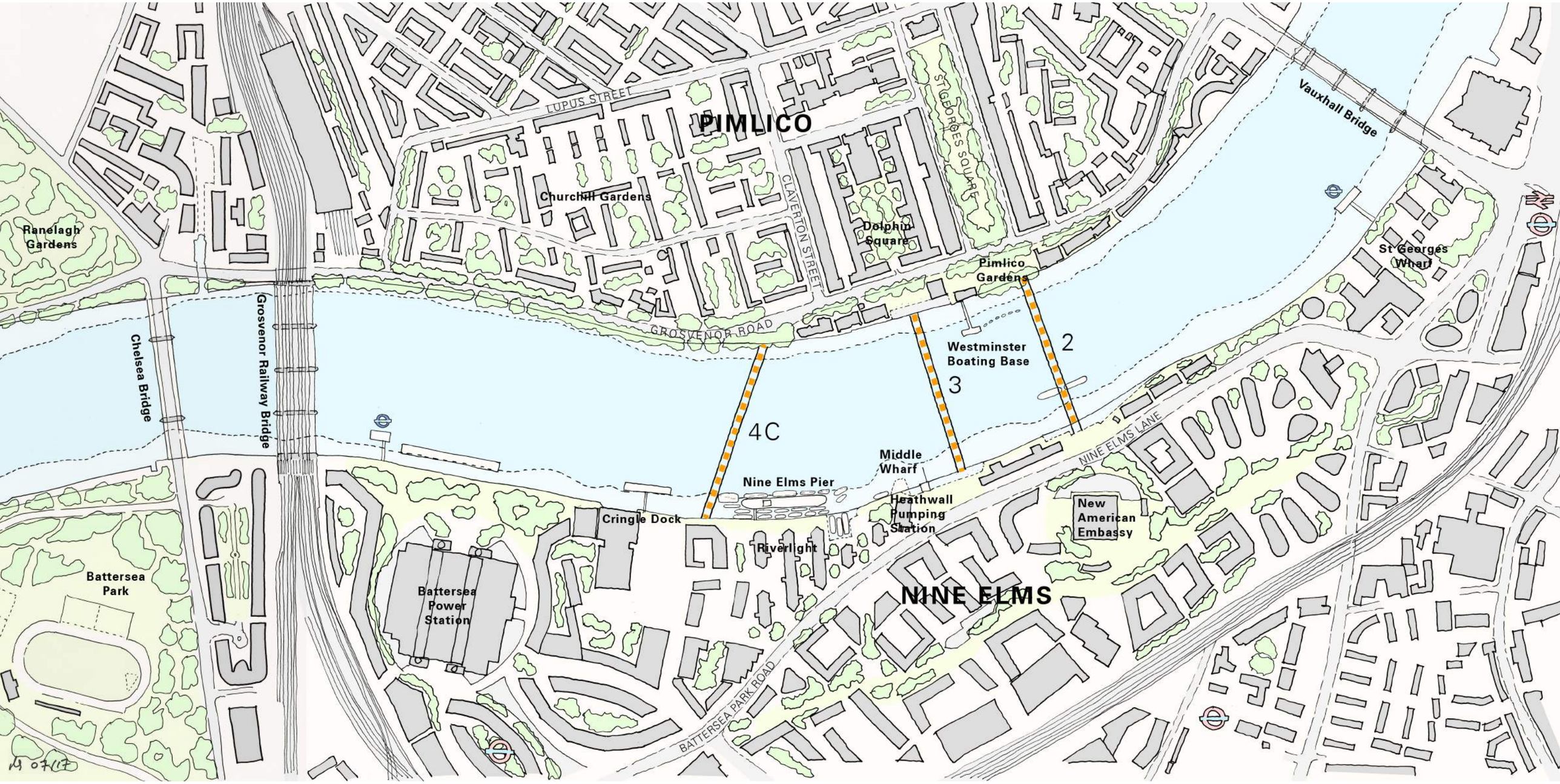
The input from key stakeholders has been incorporated into the overall Location Appraisal assessment and allows for the verification and/or addition to the Team's appraisal. The assessment of each individual stakeholder for each potential site has been prepared based on the Team's understanding of Stakeholder Comments in the engagement meetings, with their views summarised in the stakeholder assessment matrix below. Final confirmation of the appraisal has been requested from all stakeholders and is noted below where not received.

Local Residents and Amenity Groups have been engaged as part of this process and their comments have been incorporated into the Location Appraisal, however, they have not been attributed a specific colour grading in the Table below as the views of these groups were not unified with both supporters and objectors identified at both sides of the river.



\+ Stakeholder Location Appraisal based on Team's understanding of stakeholder comments in engagement meetings. Final Stakeholder confirmation of appraisal requested but not yet received.

Stakeholder Assessment - Comparative Appraisal Matrix



Location Options Recommended for Further Investigation

6.4 Location Appraisal - Recommendation

The location appraisal did not identify a single location that delivers benefits without significant challenges. The eventual selection will be about balancing the benefits against any harms that may arise.

This appraisal work identified some definitive factors which when assessed, significantly contributed to the elimination of certain sites from further consideration. It is noted that the key eliminating factors identified at this stage are broadly technical and physical constraints, which cannot be reasonably mitigated against or offered resolution through further investigation. These critical constraints included spatial limitations for a bridge structure and access, technical operational constraints of stakeholders and consideration of the levels of projected demand. The eliminating factors of the site locations not recommended for further investigation are summarised in the lower right hand table.

Stakeholder comments have been directly incorporated into the appraisal and were particularly useful to understand the requirements and viewpoints of specific groups. Engagement with stakeholders has also highlighted particular issues which require further investigation with regards to the location options taken forward.

Appraisal of the 9 location options has resulted in the following 3 options being identified for further investigation based on the most favourable and least constrained sites for a pedestrian and cycle bridge across the Nine Elms Reach of the Thames.

- Location 2 - Pimlico Gardens to Bourne Valley Wharf
- Location 3 - Dolphin Square to Prescot Wharf
- Location 4C - Grosvenor Road (Claverton Street) to Kirtling Street

The 3 location options identified for further investigation exhibited relatively few significant constraints, few failures to meet the project objectives, and on balance, have a positive impact. Where potential negative impacts have been identified, (for example arboricultural impacts or possible traffic impacts) further investigation is warranted to be undertaken at the next stage of the project, and may either highlight possible mitigation opportunities or prove reason to discount the option.

Locations 2, 3 and 4C all provide the spatial requirement for the proposed bridge concept, whilst being able to maintain the required navigational clearance in the river. The landing areas also offer the best spatial conditions for a landing which is able to accommodate the arrangement and integration of pedestrian and cycle movements to the surrounding access routes. The opportunity to develop an optimal landing condition is especially strong at Location 4C on the south bank, where the landing site it currently undeveloped. Options 2 and 3 offer good wider connectivity to the southern pedestrian and cycle routes via Arch 42.

The initial comparative assessment of transport demand is a key consideration in the recommendation of the shortlisted locations. Optimal locations for a bridge are considered to be where the highest levels of demand are served, which suggests the need for a bridge at these placements. The preliminary transportation studies indicate that the demand for a cycle and pedestrian crossing is highest at the 3 eastern most location options. Sites 2 and 3 both experience this demand. The alternate option at this high demand is location 1; however, this is eliminated on the grounds of significant spatial constraints at the north bank which would limit the ability to provide access for such demand.

Location 4C is in a zone of slightly lower demand than options 2 and 3. The demand, however, is still considerable and this location does present one of the best routes for direct north-south connectivity to the wider City. Claverton Street to the north, in particular, could offer an attractive route for cyclists and pedestrians which may minimise impact on Pimlico residents. On these grounds, location options 4A and 4B are also strong options since they share the same connectivity to the north, however, their overall appraisal is less positive considering other factors, such as the proximity to the Nine Elms Pier at the southern landings.

A range of environmental factors were considered in the appraisal and some significant constraints were identified across all sites, including the shortlisted locations 2, 3 and 4C, which all contain protected trees in their respective landing areas. Further arboricultural investigations will need to be undertaken in the next stage of work to understand the detailed impact of a bridge landing at these locations. Although the environmental appraisal raises important considerations, it does not provide strong discrimination between sites, since conditions were widely similar and can be mitigated against in the design of a bridge.

RECOMMENDED FOR FURTHER INVESTIGATION

Site	Key Grounds For Further Investigation
2	• Good location technically for a bridge with sufficient space north and south of the river for landing and integration of pedestrians and cyclists into network. • Shortest distance across the river channel. • Crossing location best serves the transport demand. • Good connectivity north and south of the river, however further investigation required to determine the impact of cycle and pedestrian demand on St George's Square and crossing of Grosvenor Road. • Challenge to mitigate against significant impact on Pimlico Gardens green space and trees.
3	• Good location technically for a bridge with sufficient space north and south of the river for landing and management of pedestrians and cyclists. • Crossing location serves the transport demand well. • Good connectivity south of the river, however further investigation required to determine the impact of cycle and pedestrian demand on routes connecting to the north. • Challenge to mitigate against impact on operations of safeguarded Middle Wharf.
4C	• Sufficient space north and south of the river for landings to integrate pedestrians and cyclists into the transport network. • Less opposition from Westminster residents • Crossing location is central on the Nine Elms Reach of the Thames and serves demand, particularly by good connectivity to the new Battersea Power Station development. • Undeveloped site at south landing could offer significant potential benefits for both the bridge and the propoesed development and will be subject to further investigation. • Potential for significant benefit to the south bank river walk, completing connection to proposed high level walkway. • Good connectivity north and south of the river, however further investigation required to determine the impact of cycle and pedestrian demand on Claverton Street and further connections north. • Coordination to overcome challenges with stakeholders, landowners and residents at the south landing.

NOT RECOMMENDED FOR FURTHER INVESTIGATION

Site	Key Grounds For Elimination
1	• Insufficient space at the north bank landing at Tyburn Brook for a bridge landing. • Major impact on residential properties immediately adjacent to the north bank landing. • Poor location for the integration of cycle and pedestrian bridge traffic into existing Grosvenor Road infrastructure. • Restricted city wide connectivity options north of the river, cycle superhighway 8 only.
4A	• Position of Thames Tideway Tunnel with regards to southern landing foundations. • Impact on Nine Elms Pier houseboat residents
4B	• Major constraint of Nine Elms Pier structure and level of mitigation necessary to enable a bridge landing at the south bank. • Impact on Nine Elms Pier houseboat residents
5	• Insufficient space at north bank Grosvenor Road landing to manage and integrate cyclists into the transport network. Significant mitigation works through alternative design would be necessary. • Relatively low demand at this location. • Restricted city connectivity options north of the river due to impermeability of Churchill Gardens to cyclists and pedestrians, meaning cycle superhighway 8 is the only connection. • Impact on the heritage setting of Battersea Power Station. • River vessels turning at this location in the river and accessing Cringle Dock on the South bank.
6	• Insufficient space at the north bank Grosvenor Road landing to manage and integrate cyclists into the transport network. Significant mitigation works through alternative design would be necessary. • Relatively low demand at this location. • Restricted city connectivity options north of the river due to impermeability of Churchill Gardens to cyclists and pedestrians, meaning cycle superhighway 8 is the only connection. • Impact on the heritage setting of Battersea Power Station. • Constraint of access over Battersea Power Pier which houses 2 listed crane structures.
7	• Not feasible from a Network Rail perspective - prohibitively constrained by the operations and management of Grosvenor Rail Bridge and Grosvenor Sidings. • Insufficient space at the north bank Grosvenor Road landing to manage and integrate cyclists into the transport network. Significant mitigation works through alternative design would be necessary. • Lowest demand at this location with poor connectivity north and south. • Poor user experience for cyclists and pedestrians caused by adjacent busy rail bridge. • Constraint of Battersea Power Station river bus pier and Thames Clipper operations.

Opposite Page: Sketch plan showing the 3 Location Options recommended for furter investigation

7.0 Next Steps

7.1 Stage 2 (Concept Design)

Stage 2 of the project will continue the on-going location appraisal commenced at Stage 1. More detailed schematic assessments will be undertaken of the 3 locations which have been recommended for further investigation in order to understand their viability and potential impacts, leading to the identification of a preferred location for the bridge.

Initial Concept Designs will be developed for each alternative location responding to the specific constraints and opportunities of each site, but retaining the key principals from the original competition proposal, to be connective, sustainable, innovative, deliverable and collaborative.

These outline general arrangements will help establish the potential implications of siting a bridge in these specific locations, testing the technical feasibility and supporting the on-going options appraisal.

In response to the outcomes of Stage 1 the original scope, phasing and objectives of Stage 2 (Concept Design) were reconsidered and it was agreed that Stage 2 should be divided into 2 parts - Stage 2A and Stage 2B.

Stage 2A

The aim of Stage 2A will focus on undertaking further work on the 3 options to further test the technical viability and potential impacts of a bridge at these locations, including:

- Undertake further appraisal of the design feasibility of the identified alternative alignment options for the bridge and comparatively assess their strengths and weaknesses and their ability to meet the project objectives.
- Undertake further technical and environmental studies to assess the feasibility and impact of a crossing in this stretch of the river;
- Undertake further updates to the TfL Feasibility Study Transport Demand Assessment (2013) in order to confirm the level of demand for the bridge;
- Continue to consult on technical constraints and opportunities with local authorities, statutory bodies and stakeholders.

Stage 2B

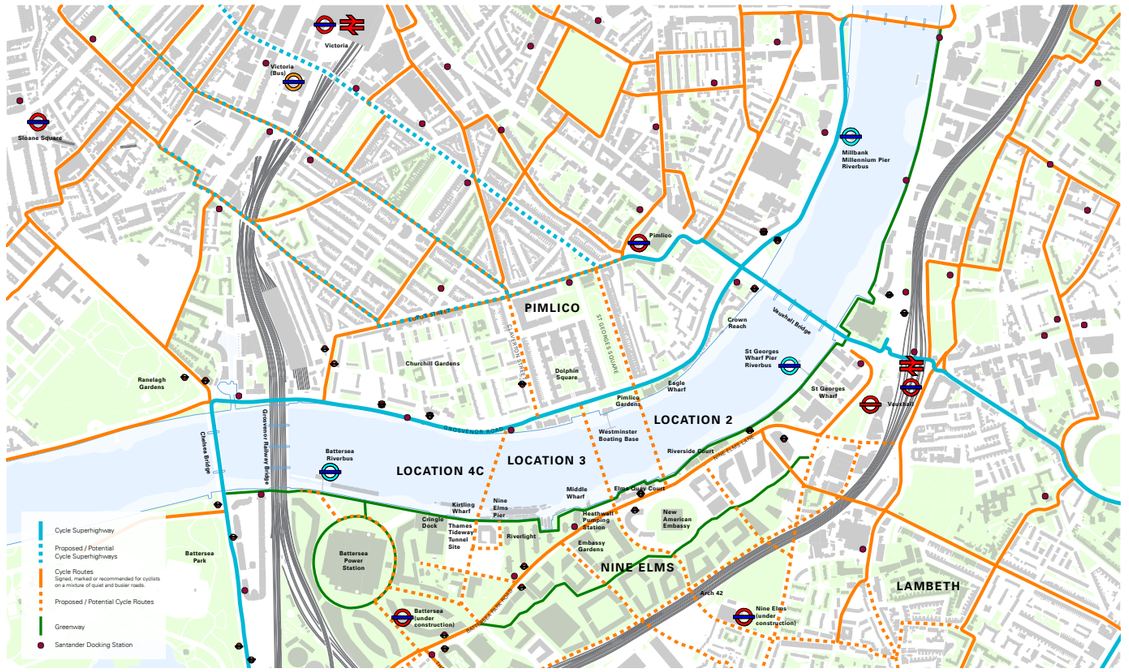
The aim of Stage 2B is to arrive at a recommendation of a Preferred Location for the bridge and identification of the next steps for the project towards a consents application. This will draw upon the outcomes of Stage 2A and further detailed assessments as necessary.

It is anticipated that the final analysis may not be able to identify a single location that delivers benefits without significant challenges. Therefore, the eventual selection will likely be about balancing the benefits against any harms that may arise.

Throughout its timeline the Project is being progressed in a collaborative way in consultation with all stakeholders, however, engagement will be particularly important during Stage 2B as feedback from stakeholders on the three options and the technical constraints will form a crucial part of the analysis.

To this end the Team will continue their extensive consultation with key stakeholders and local communities, building upon the positive engagement undertaken to date, explaining the work undertaken in Stage 1 and Stage 2A and allowing all stakeholders the opportunity to provide feedback on the locations under investigation.

Aerial photograph showing the 3 location options recommended for further investigation during Stage 2



Plan showing existing and proposed cycle infrastructure, including the 3 location options recommended for further investigation during Stage 2

7.2 Stage 3 (Developed Design)

Once a preferred crossing point has been identified, the Design Team will commence detailed design work on Stage 3, working towards the submission of a Consents Application.

A fixed location will mean the construction costs can be more accurately determined and incorporated within the wider Nine Elms infrastructure programme and allow deliverability, funding and procurement strategies to be developed in conjunction with key stakeholders.

A preferred location will also then enable the detailed reassessments of the case for the bridge to be concluded. It is envisaged that this will include the following:

Transport

Finalise the TfL Feasibillity Study Demand Assessment Update including for the Bridge. During this stage it is expected that a change in Methodology will be required to improve the robustness of the analysis moving from a comparative to absolute prediction of demand.

A full transport assessment is expected to be required to accompany a Consents Application which would be based on the findings of this detailed final assessment, set out the impact of the proposals and provide commentary on the rationale for the design (in transport terms) and integration to infrastructure at the landing points.

Environment

It is considered likely that any application for Consent would have to be supported by an Environmental Impact Assessment (EIA) including further study to describe the likely environmental effects, as well as possible mitigation measures. In order to fully determine this and to define the precise scope and methodology of this work a formal EIA screening will be prepared following the identification of a preferred location.

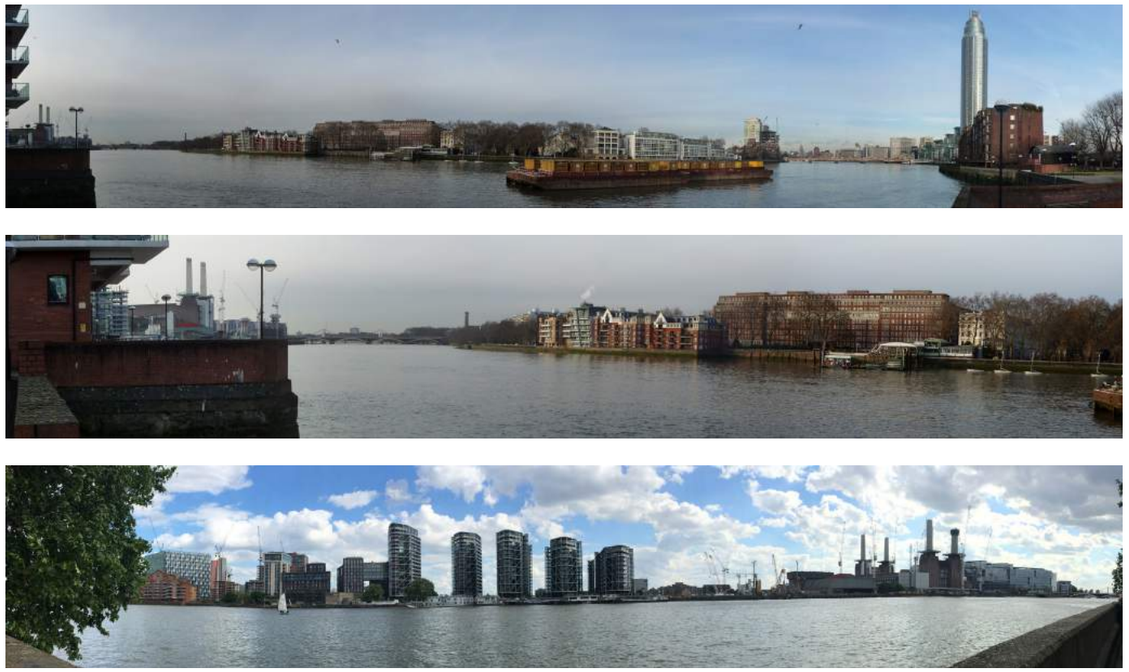
7.3 Recommendations

It is recommended that:

- The Client approves the recommendation of this report to reduce the number of locations being investigated from 9 to 3, as the least constrained sites for a pedestrian and cycle bridge and that the following options are considered in further detail at the next stage of the design process:
  - Location 2 - Pimlico Gardens to Bourne Valley Wharf
  - Location 3 - Dolphin Square to Prescot Wharf
  - Location 4C - Grosvenor Road (Claverton Street) to Kirtling Street

- The Team is instructed to undertake Stage 2A works on the 3 options identified above, including:
  - Undertake further appraisal of the design feasibility of the identified alternative alignment options for the bridge and comparatively assess their strengths and weaknesses and their ability to meet the project objectives.
  - Undertake further technical and environmental studies to assess the feasibility and impact of a crossing in this stretch of the river;
  - Undertake further updates to the TfL Feasibility Study Transport Demand Assessment (2013) in order to confirm the level of demand for the bridge;
  - Continue to consult on technical constraints and opportunities with local authorities, statutory bodies and stakeholders.

This work will be crucial to further test the technical viability and potential impacts of a bridge at these locations, help reaffirm the case for the bridge, inform the ongoing assessment of potential location options for the bridge and inform the next stage of the consultation with stakeholders and the public, to inform the selection of a Preferred Location at the conclusion of Stage 2B.



Views of Location Options recommended for further investigation including, Location 2 looking east towards Vauxhall Bridge (Top); Location 3 looking west towards Grosvenor Rail Bridge (Middle); and, Location Option 4C looking towards the South Bank landing (Bottom).

Visualisation of Nine Elms Pimlico Bridge looking towards Battersea Power Station from the Competition Stage of the Project