

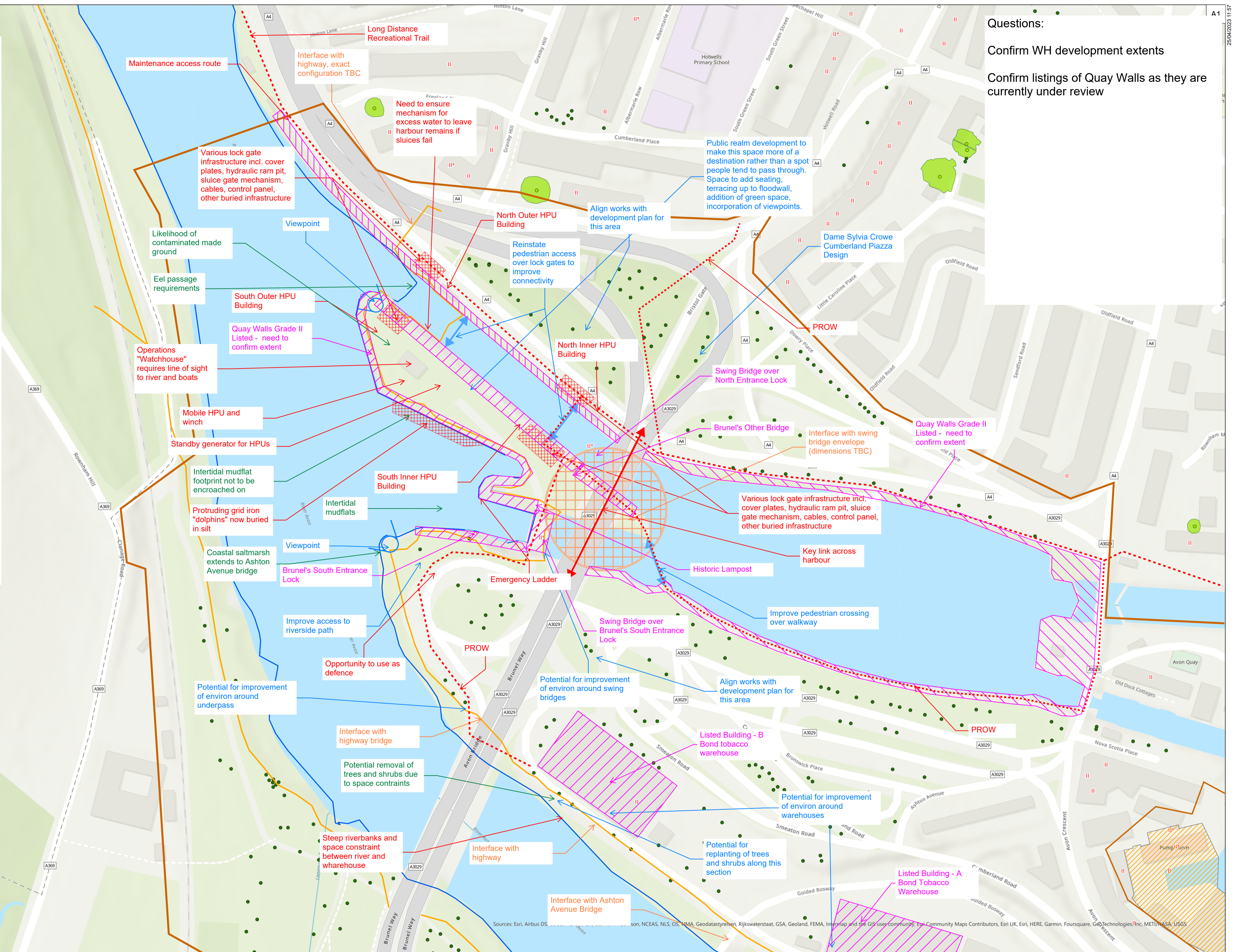


Site-wide constraints/opportunities:

**HERITAGE:**  
 -Whole area within City Docks Conservation Area  
 -Use of historic materials needs to be considered site wide  
 -Listed buildings and scheduled monuments cause potential planning issues  
 -Can improve interpretation of industrial heritage of the area  
 -Heritage assessment is

**ECOLOGY/ENVIRONMENTAL:**  
 -River Avon is a Site of Nature Conservation Importance and Local Nature Reserve  
 -Bristol Avon is a link for migratory fish between the Severn Estuary SAC  
 -Maximise deliver of planting along all extents where possible  
 -Integration of bird boxes, bee bricks and other habitat creation features into walls  
 -Floating vegetated pontoons and mudflat creation to be considered where possible

**LANDSCAPE:**  
 -Appearance and finish of wall to be high-quality and in keeping with local character  
 -Height of walls relative to ground level  
 -Maximise urban tree planting  
 -Maximise creation of inviting and multifunctional public spaces



Questions:  
 Confirm WH development extents  
 Confirm listings of Quay Walls as they are currently under review

<ul style="list-style-type: none"> <li>Blue line: Mean High Water Springs</li> <li>Orange line: Main Defences</li> <li>Red outline: Listed Building Grade</li> <li>Red outline: I</li> <li>Red outline: II</li> <li>Red outline: II*</li> <li>Orange outline: Western Harbour Development Area</li> </ul>	<ul style="list-style-type: none"> <li>Yellow outline: Scheduled Monuments</li> <li>Green outline: Tree Preservation Order (TPO)</li> <li>Green outline: Tree Preservation Order (TPO) Trunk</li> <li>Green outline: Tree Preservation Order (TPO) Canopy</li> <li>Green dot: Bristol City Council Trees and Planting Location</li> <li>Green dot: Bristol City Council Tree Planting Location</li> <li>Green dot: Bristol City Council Trees</li> </ul>	<ul style="list-style-type: none"> <li>Blue outline: Interface</li> <li>Blue outline: Opportunity</li> <li>Red outline: Physical constraint</li> <li>Pink outline: Heritage constraint</li> <li>Green outline: Environmental constraint</li> </ul>
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Scale: 0 20 40 80 Metres

Coordinate System: British National Grid

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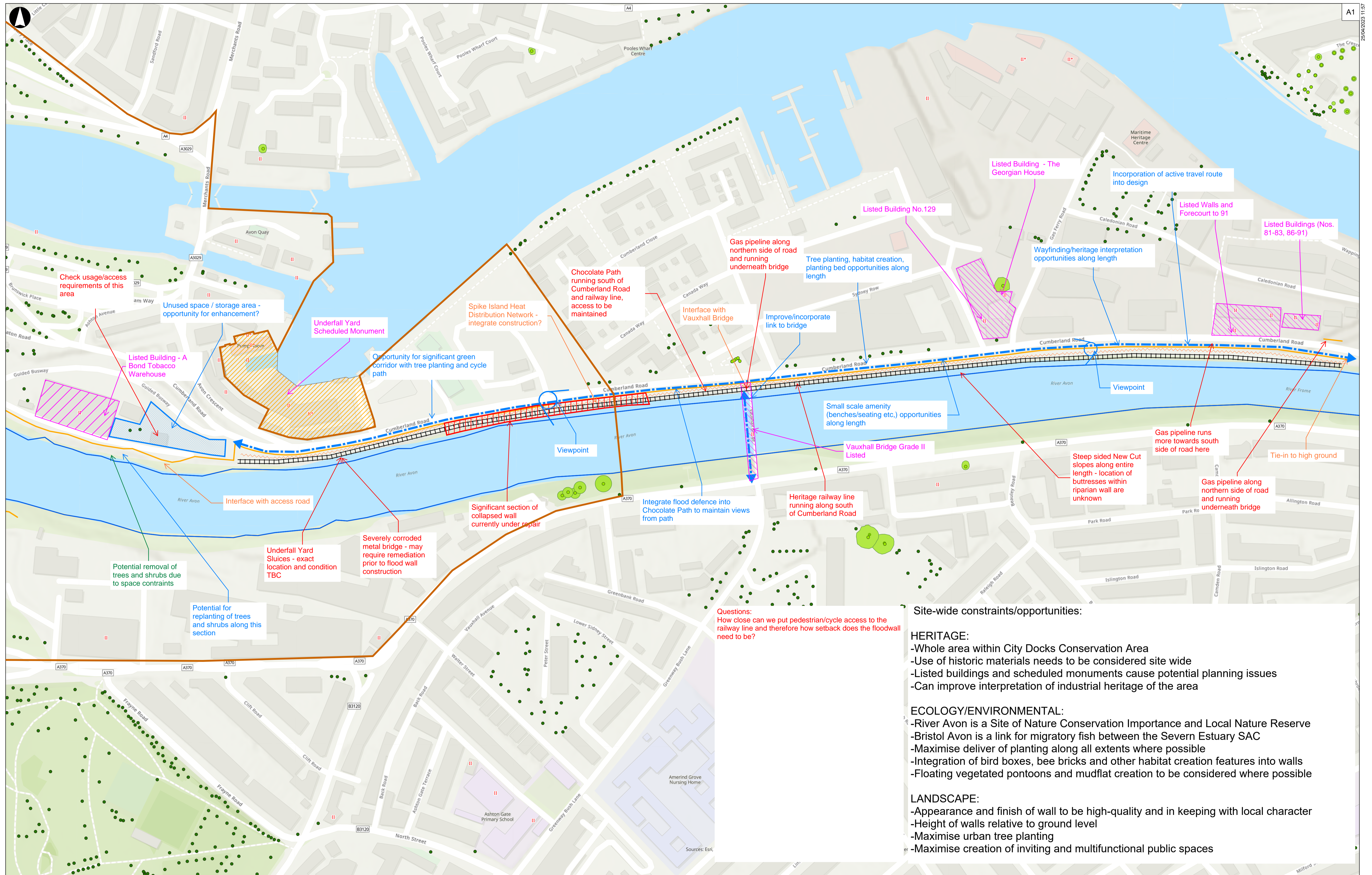
Client  
**Bristol City Council**

Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - Entrance Lock**

Scale at A1  
**1:1,000**  
 Role  
**Civil**  
 Suitability  
**For Information**  
 Project Number  
**28598200**  
 Drawing Name  
**285982-ARP-XX-DR-CIV-100**

Rev  
**P01**



Questions:  
How close can we put pedestrian/cycle access to the railway line and therefore how setback does the floodwall need to be?

**Site-wide constraints/opportunities:**

- HERITAGE:**
- Whole area within City Docks Conservation Area
  - Use of historic materials needs to be considered site wide
  - Listed buildings and scheduled monuments cause potential planning issues
  - Can improve interpretation of industrial heritage of the area

- ECOLOGY/ENVIRONMENTAL:**
- River Avon is a Site of Nature Conservation Importance and Local Nature Reserve
  - Bristol Avon is a link for migratory fish between the Severn Estuary SAC
  - Maximise deliver of planting along all extents where possible
  - Integration of bird boxes, bee bricks and other habitat creation features into walls
  - Floating vegetated pontoons and mudflat creation to be considered where possible

- LANDSCAPE:**
- Appearance and finish of wall to be high-quality and in keeping with local character
  - Height of walls relative to ground level
  - Maximise urban tree planting
  - Maximise creation of inviting and multifunctional public spaces

— Mean High Water Springs  
— Main Defences  
 Listed Building Grade  
 I  
 II  
 II\*  
— Western Harbour Development Area

Scheduled Monuments  
— Tree Preservation Order (TPO)  
— Tree Preservation Order (TPO) Trunk  
— Tree Preservation Order (TPO) Canopy  
 New Group Layer  
● Bristol City Council Tree Planting Locations  
● Bristol City Council Trees

— Interface  
— Opportunity  
— Physical constraint  
— Heritage constraint  
— Environmental constraint

Coordinate System: British National Grid  
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Client  
**Bristol City Council**

Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - Cumberland Road**

Scale at A1  
**1:1,500**  
 Role  
**Civil**  
 Suitability  
**For Information**  
 Project Number  
**28598200**  
 Drawing Name  
**285982-ARP-XX-DR-CIV-101**

Rev  
**P01**

**Site-wide constraints/opportunities:**

**UTILITIES:**

- Series of utilities (WPD, WWU, Bristol Water) run along both the Northern and Southern side of Commercial and Clarence Road (dashed red line)

**HERITAGE:**

- Working in the vicinity of or on listed buildings will require further planning permission.  
 - Redcliffe and City Docks Conservation Areas cover entire stretch of intended location of flood defence.

**ECOLOGY/ENVIRONMENTAL:**

- Temporary and permanent construction, including piling onto the riverbank may have negative environmental and ecological.  
 - River Avon New Cut is a Site of Nature Conservation Importance and Local Nature Reserve.  
 - Road closures may be necessary if construction is to take place roadside.  
 - Any loss to saltmarsh or intertidal mudflats need to be replaced. Loss/degradation of vegetation along River Avon will need to be mitigated, in part via BNG requirements. If land take is unavoidable then needs to be kept to a minimum.  
 - Construction methodology/programme may have implications for Habitats Regulations Assessment via pathway for effect on migratory fish.  
 - Species-specific surveys required at a later stage e.g otters.  
 - Integrate nesting opportunities and saltmarsh creation into structures.  
 - Opportunities to use sustainable materials / materials that require less maintenance / recycled materials with the ambition of reducing carbon emission.

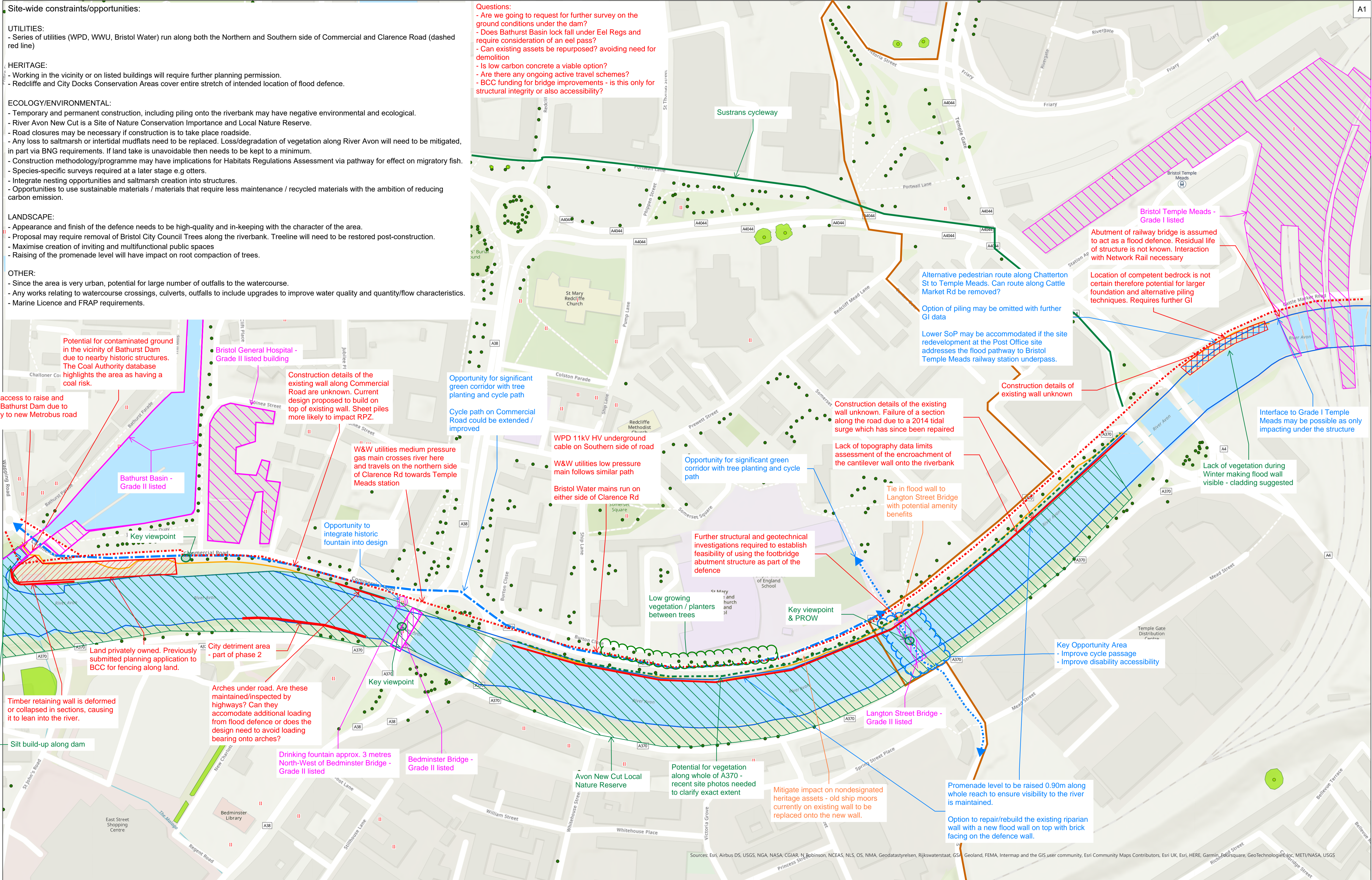
**LANDSCAPE:**

- Appearance and finish of the defence needs to be high-quality and in-keeping with the character of the area.  
 - Proposal may require removal of Bristol City Council Trees along the riverbank. Treeline will need to be restored post-construction.  
 - Maximise creation of inviting and multifunctional public spaces  
 - Raising of the promenade level will have impact on root compaction of trees.

**OTHER:**

- Since the area is very urban, potential for large number of outfalls to the watercourse.  
 - Any works relating to watercourse crossings, culverts, outfalls to include upgrades to improve water quality and quantity/flow characteristics.  
 - Marine Licence and FRAP requirements.

**Questions:**  
 - Are we going to request for further survey on the ground conditions under the dam?  
 - Does Bathurst Basin lock fall under Eel Regs and require consideration of an eel pass?  
 - Can existing assets be repurposed? avoiding need for demolition  
 - Is low carbon concrete a viable option?  
 - Are there any ongoing active travel schemes?  
 - BCC funding for bridge improvements - is this only for structural integrity or also accessibility?



<p>— Mean High Water Springs</p> <p>— Main Defences</p> <p>Listed Building Grade</p> <p>I</p> <p>II</p> <p>II*</p> <p>— Western Harbour Development Area</p>	<p>▨ Scheduled Monuments</p> <p>Tree Preservation Order (TPO)</p> <p>● Tree Preservation Order (TPO) Trunk</p> <p>■ Tree Preservation Order (TPO) Canopy</p> <p>New Group Layer</p> <p>● Bristol City Council Tree Planting Locations</p> <p>● Bristol City Council Trees</p> <p>Metres</p> <p>0 30 60 120</p>	<p>Interface</p> <p>Opportunity</p> <p>Physical constraint</p> <p>Heritage constraint</p> <p>Environmental constraint</p>
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Client  
**Bristol City Council**

Project Name  
**Bristol Avon Flood Strategy**

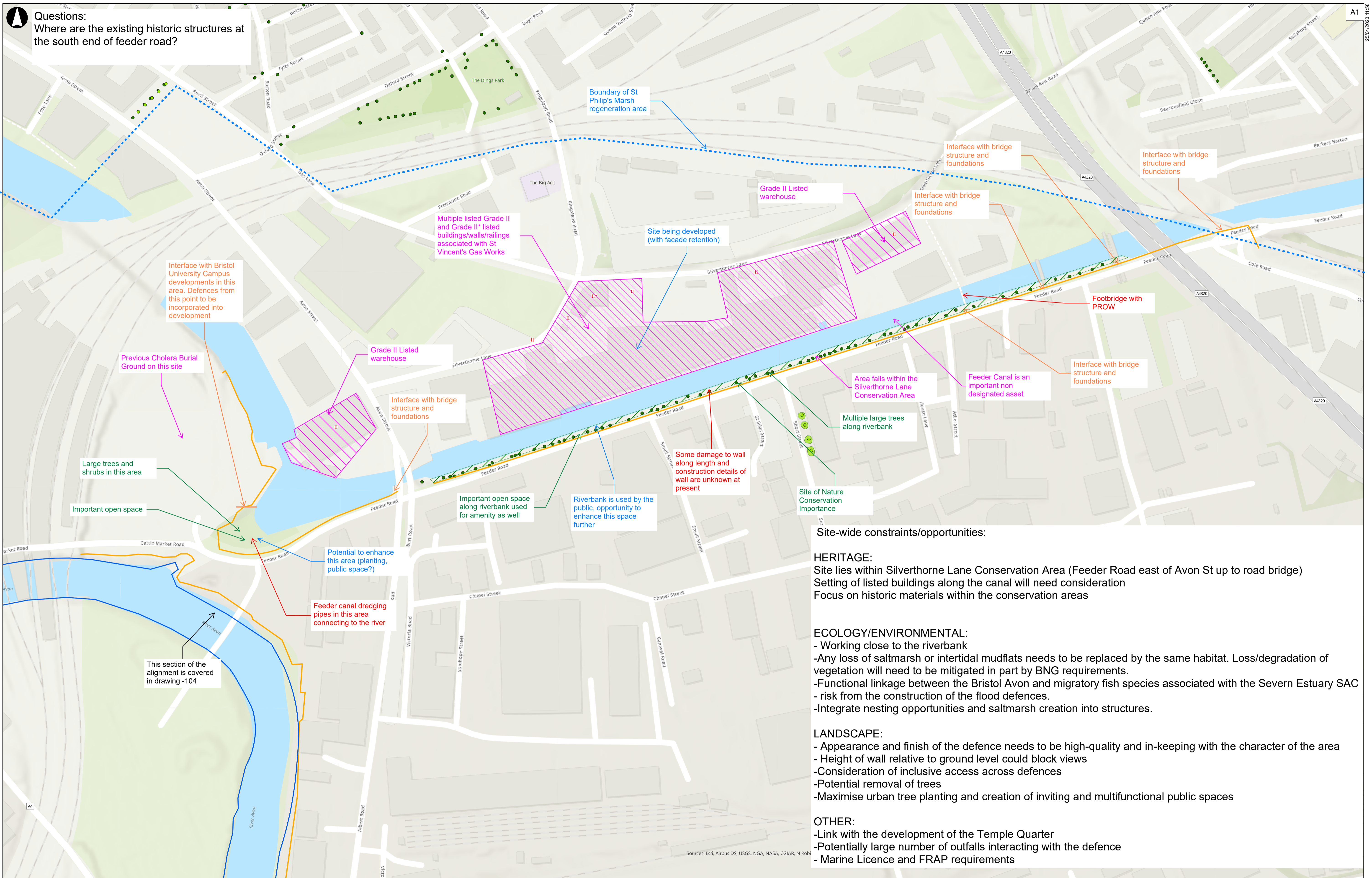
Drawing Title  
**Opportunities and constraints plan - City Centre**

Scale at A1  
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 Role  
**Civil**  
 Suitability  
**For Information**  
 Project Number  
**28598200**  
 Drawing Name  
**285982-ARP-XX-DR-CIV-102**

Rev	P01
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Questions:  
Where are the existing historic structures at the south end of feeder road?



Site-wide constraints/opportunities:

**HERITAGE:**  
Site lies within Silverthorne Lane Conservation Area (Feeder Road east of Avon St up to road bridge)  
Setting of listed buildings along the canal will need consideration  
Focus on historic materials within the conservation areas

**ECOLOGY/ENVIRONMENTAL:**  
- Working close to the riverbank  
-Any loss of saltmarsh or intertidal mudflats needs to be replaced by the same habitat. Loss/degradation of vegetation will need to be mitigated in part by BNG requirements.  
-Functional linkage between the Bristol Avon and migratory fish species associated with the Severn Estuary SAC  
- risk from the construction of the flood defences.  
-Integrate nesting opportunities and saltmarsh creation into structures.

**LANDSCAPE:**  
- Appearance and finish of the defence needs to be high-quality and in-keeping with the character of the area  
- Height of wall relative to ground level could block views  
-Consideration of inclusive access across defences  
-Potential removal of trees  
-Maximise urban tree planting and creation of inviting and multifunctional public spaces

**OTHER:**  
-Link with the development of the Temple Quarter  
-Potentially large number of outfalls interacting with the defence  
- Marine Licence and FRAP requirements

Legend:

- Mean High Water Springs
- Main Defences
- Listed Building Grade
- Scheduled Monuments
- Tree Preservation Order (TPO)
- Tree Preservation Order (TPO) Trunk
- Tree Preservation Order (TPO) Canopy
- New Group Layer
- Bristol City Council Tree Planting Locations
- Bristol City Council Trees

Scale: 1:1,500

Role: Civil

For Information

Project Number: 28598200

Drawing Name: 285982-ARP-XX-DR-CIV-103

Rev: P01

Coordinate System: British National Grid

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Client: **Bristol City Council**

Project Name: **Bristol Avon Flood Strategy**

Drawing Title: **Opportunities and constraints plan - Feeder Road**

Scale at A1: **1:1,500**

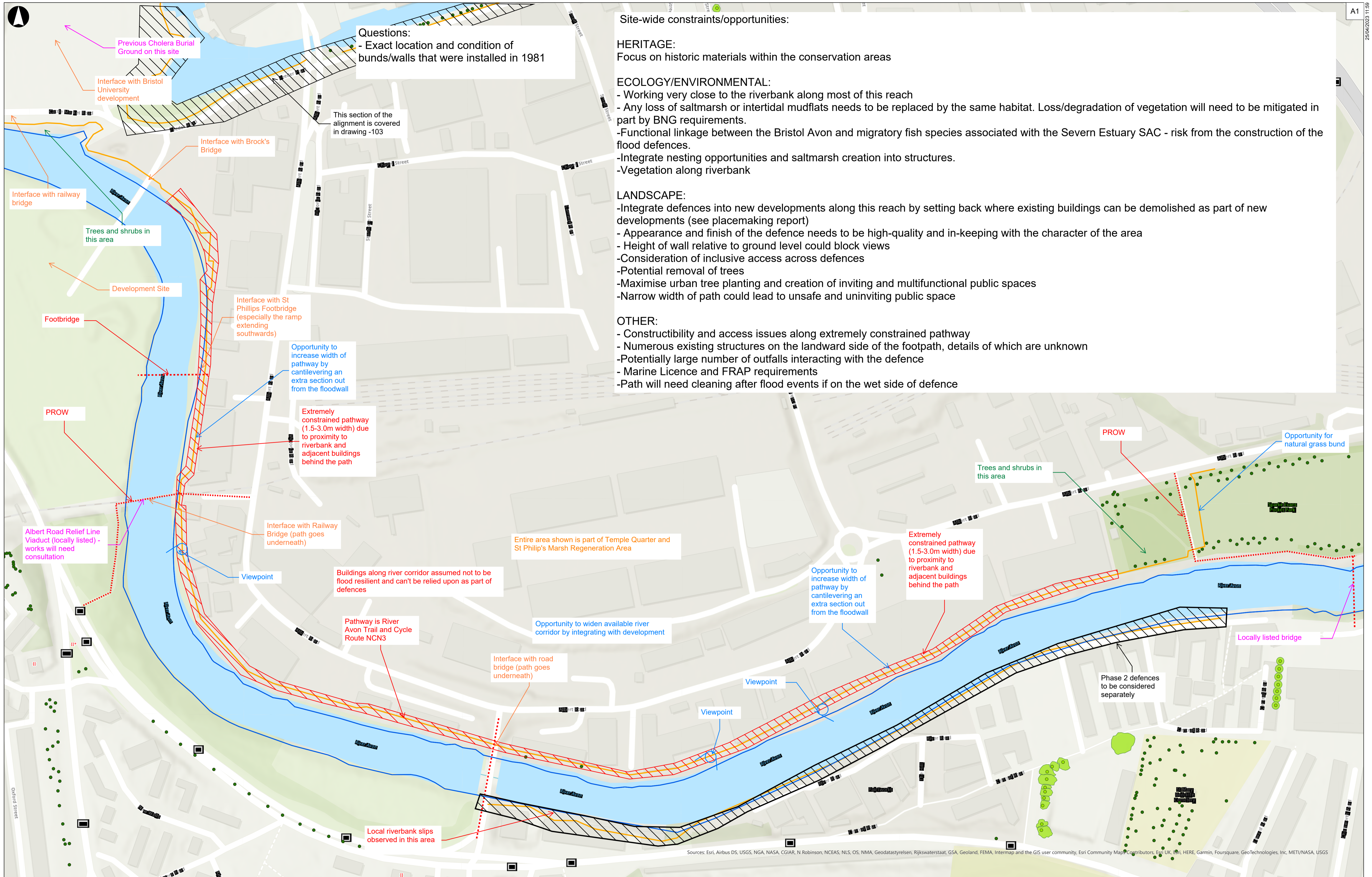
Role: **Civil**

For Information

Project Number: **28598200**

Drawing Name: **285982-ARP-XX-DR-CIV-103**

Rev: **P01**



**Questions:**  
 - Exact location and condition of bunds/walls that were installed in 1981

**Site-wide constraints/opportunities:**

**HERITAGE:**  
 Focus on historic materials within the conservation areas

**ECOLOGY/ENVIRONMENTAL:**  
 - Working very close to the riverbank along most of this reach  
 - Any loss of saltmarsh or intertidal mudflats needs to be replaced by the same habitat. Loss/degradation of vegetation will need to be mitigated in part by BNG requirements.  
 -Functional linkage between the Bristol Avon and migratory fish species associated with the Severn Estuary SAC - risk from the construction of the flood defences.  
 -Integrate nesting opportunities and saltmarsh creation into structures.  
 -Vegetation along riverbank

**LANDSCAPE:**  
 -Integrate defences into new developments along this reach by setting back where existing buildings can be demolished as part of new developments (see placemaking report)  
 - Appearance and finish of the defence needs to be high-quality and in-keeping with the character of the area  
 - Height of wall relative to ground level could block views  
 -Consideration of inclusive access across defences  
 -Potential removal of trees  
 -Maximise urban tree planting and creation of inviting and multifunctional public spaces  
 -Narrow width of path could lead to unsafe and uninviting public space

**OTHER:**  
 - Constructibility and access issues along extremely constrained pathway  
 - Numerous existing structures on the landward side of the footpath, details of which are unknown  
 -Potentially large number of outfalls interacting with the defence  
 - Marine Licence and FRAP requirements  
 -Path will need cleaning after flood events if on the wet side of defence

— Mean High Water Springs  
 — Main Defences  
 Listed Building Grade  
 I  
 II  
 II\*

Scheduled Monuments  
 Tree Preservation Order (TPO)  
 Tree Preservation Order (TPO) Trunk  
 Tree Preservation Order (TPO) Canopy  
 New Group Layer  
 Bristol City Council Tree Planting Locations  
 Bristol City Council Trees

Metres  
 0 30 60 120

Coordinate System: British National Grid

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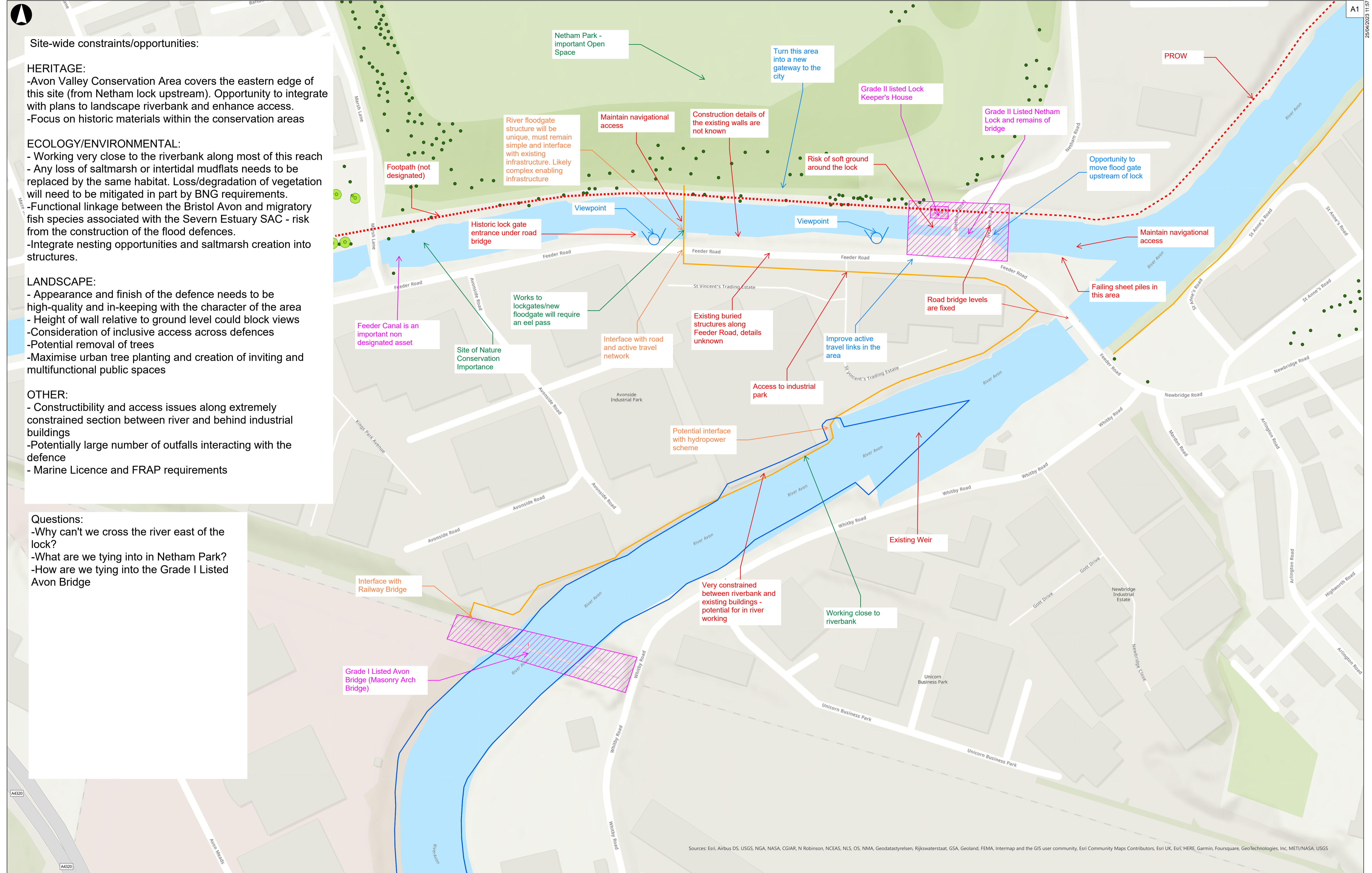
Client  
**Bristol City Council**

Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - Feeder Road**

Scale at A1  
**1:1,500**  
 Role  
**Civil**  
 Suitability  
**For Information**  
 Project Number  
**28598200**  
 Drawing Name  
**285982-ARP-XX-DR-CIV-104**

Rev  
**P01**



Site-wide constraints/opportunities:

**HERITAGE:**  
 -Avon Valley Conservation Area covers the eastern edge of this site (from Netham lock upstream). Opportunity to integrate with plans to landscape riverbank and enhance access.  
 -Focus on historic materials within the conservation areas

**ECOLOGY/ENVIRONMENTAL:**  
 - Working very close to the riverbank along most of this reach  
 - Any loss of saltmarsh or intertidal mudflats needs to be replaced by the same habitat. Loss/degradation of vegetation will need to be mitigated in part by BNG requirements.  
 -Functional linkage between the Bristol Avon and migratory fish species associated with the Severn Estuary SAC - risk from the construction of the flood defences.  
 -Integrate nesting opportunities and saltmarsh creation into structures.

**LANDSCAPE:**  
 - Appearance and finish of the defence needs to be high-quality and in-keeping with the character of the area  
 - Height of wall relative to ground level could block views  
 -Consideration of inclusive access across defences  
 -Potential removal of trees  
 -Maximise urban tree planting and creation of inviting and multifunctional public spaces

**OTHER:**  
 - Constructibility and access issues along extremely constrained section between river and behind industrial buildings  
 -Potentially large number of outfalls interacting with the defence  
 - Marine Licence and FRAP requirements

**Questions:**  
 -Why can't we cross the river east of the lock?  
 -What are we tying into in Netham Park?  
 -How are we tying into the Grade I Listed Avon Bridge

<ul style="list-style-type: none"> <li>— Mean High Water Springs</li> <li>— Main Defences</li> <li>Listed Building Grade</li> <li>I</li> <li>II</li> <li>III*</li> </ul>	<ul style="list-style-type: none"> <li>▨ Scheduled Monuments</li> <li>Tree Preservation Order (TPO)</li> <li>● Tree Preservation Order (TPO) Trunk</li> <li>■ Tree Preservation Order (TPO) Canopy</li> <li>New Group Layer</li> <li>● Bristol City Council Tree Planting Locations</li> <li>● Bristol City Council Trees</li> </ul>	<ul style="list-style-type: none"> <li>Interface</li> <li>Opportunity</li> <li>Physical constraint</li> <li>Heritage constraint</li> <li>Environmental constraint</li> </ul>
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Coordinate System: British National Grid

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**Bristol City Council**

Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - Netham**

Scale at A1  
**1:1,100**  
 Role  
**Civil**  
 Suitability  
**For Information**  
 Project Number  
**28598200**  
 Drawing Name  
**285982-ARP-XX-DR-CIV-105**

Rev	P01
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— Mean High Water Springs  
 — Main Defences  
 Listed Building Grade  
 I  
 II  
 II\*

Scheduled Monuments  
 Tree Preservation Order (TPO)  
 — Tree Preservation Order (TPO) Trunk  
 — Tree Preservation Order (TPO) Canopy  
 Bristol City Council Trees and Planting Locations  
 ● Bristol City Council Tree Planting Locations  
 ● Bristol City Council Trees

0 20 40 80  
 Metres

Coordinate System: British National Grid

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Drawing Title  
**Opportunities and constraints plan - Entrance Lock**

Scale at A1  
**1:1,000**

Role  
**Civil**

Suitability  
**For Information**

Project Number  
**28598200**

Drawing Name  
**285982-ARP-XX-DR-CIV-100**

Rev  
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— Mean High Water Springs  
 — Main Defences  
 Listed Building Grade  
 I  
 II  
 II\*

Scheduled Monuments  
 Tree Preservation Order (TPO)  
 Tree Preservation Order (TPO) Trunk  
 Tree Preservation Order (TPO) Canopy  
 New Group Layer  
 Bristol City Council Tree Planting Locations  
 Bristol City Council Trees

0 30 60 120 Metres

Coordinate System: British National Grid

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Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - Cumberland Road**

Scale at A1  
**1:1,500**

Role  
**Civil**

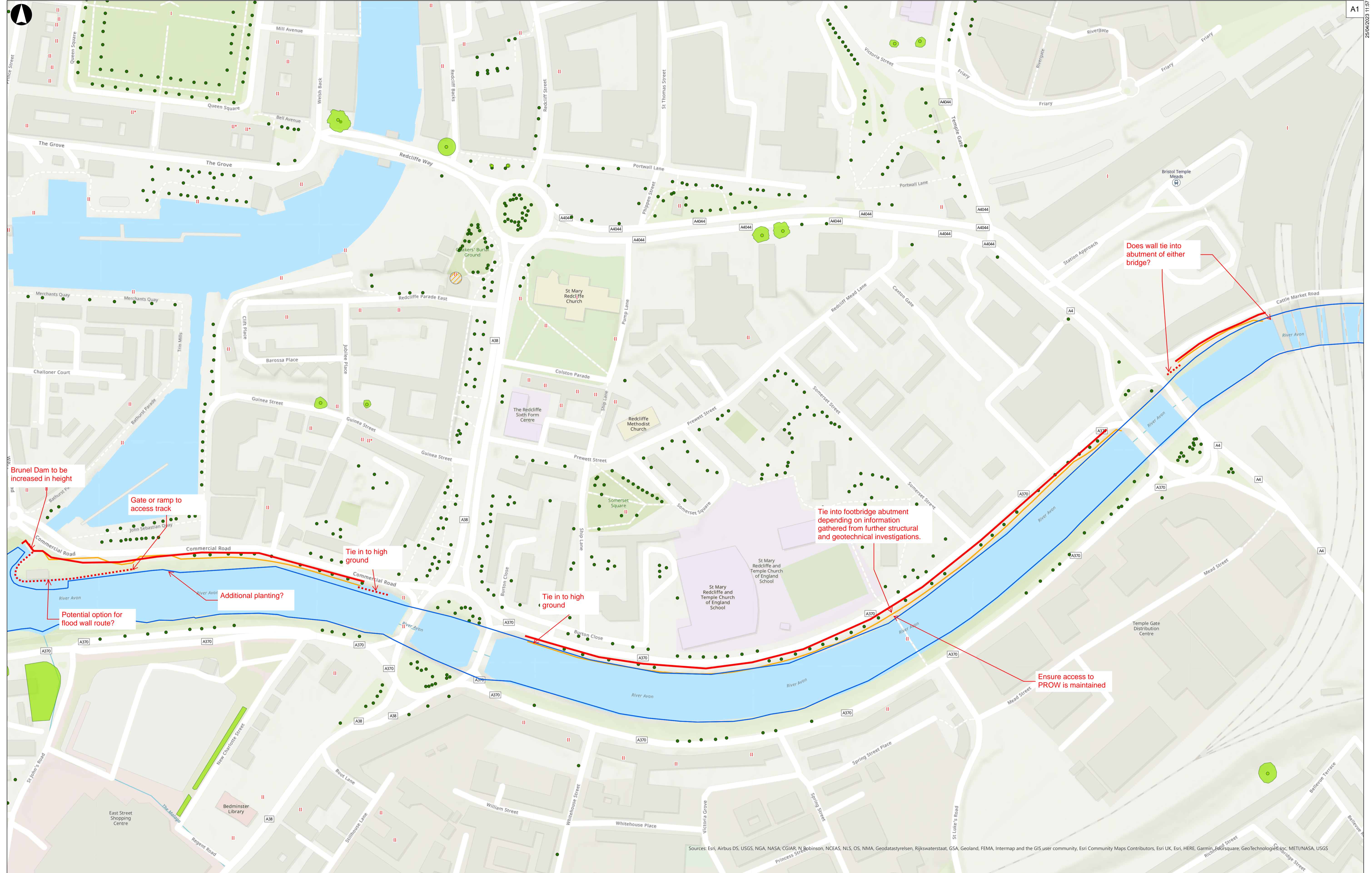
Suitability  
**For Information**

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— Mean High Water Springs  
 — Main Defences  
 Listed Building Grade  
 I  
 II  
 II\*

Scheduled Monuments  
 Tree Preservation Order (TPO)  
 Tree Preservation Order (TPO) Trunk  
 Tree Preservation Order (TPO) Canopy  
 New Group Layer  
 Bristol City Council Tree Planting Locations  
 Bristol City Council Trees

0 30 60 120  
 Metres

Coordinate System: British National Grid

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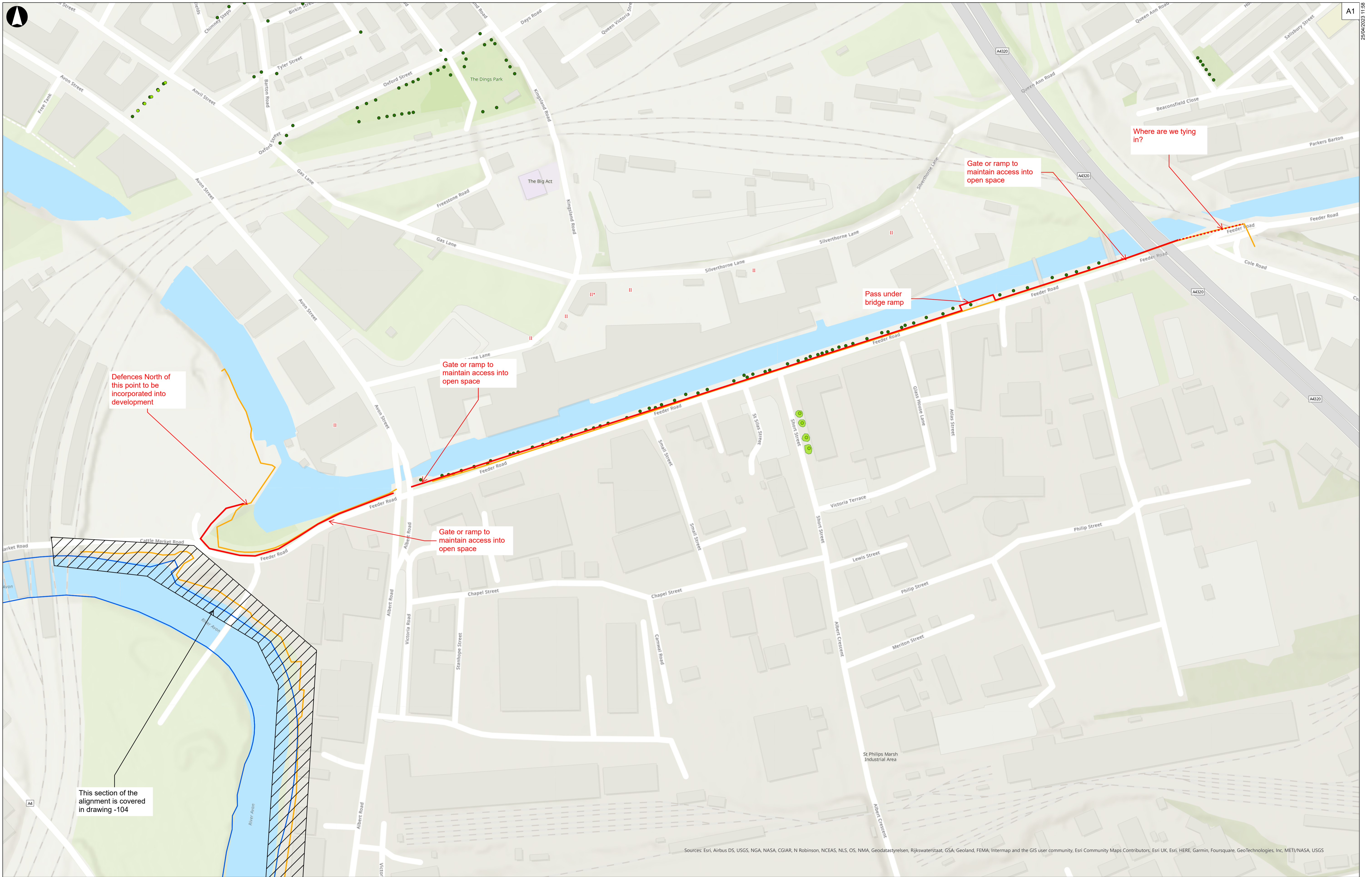
Client  
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Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - City Centre**

Scale at A1  
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Role  
**Civil**  
Suitability  
**For Information**  
Project Number  
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Drawing Name  
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Rev  
**P01**



Defences North of this point to be incorporated into development

Gate or ramp to maintain access into open space

Pass under bridge ramp

Where are we tying in?

Gate or ramp to maintain access into open space

This section of the alignment is covered in drawing -104

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatasystemen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Maps Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc, METI/NASA, USGS

- Mean High Water Springs
- Main Defences
- Listed Building Grade
  - I
  - II
  - II\*
- Scheduled Monuments
- Tree Preservation Order (TPO)
  - Tree Preservation Order (TPO) Trunk
  - Tree Preservation Order (TPO) Canopy
- New Group Layer
  - Bristol City Council Tree Planting Locations
  - Bristol City Council Trees

Metres

Coordinate System: British National Grid

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Project Name  
**Bristol Avon Flood Strategy**

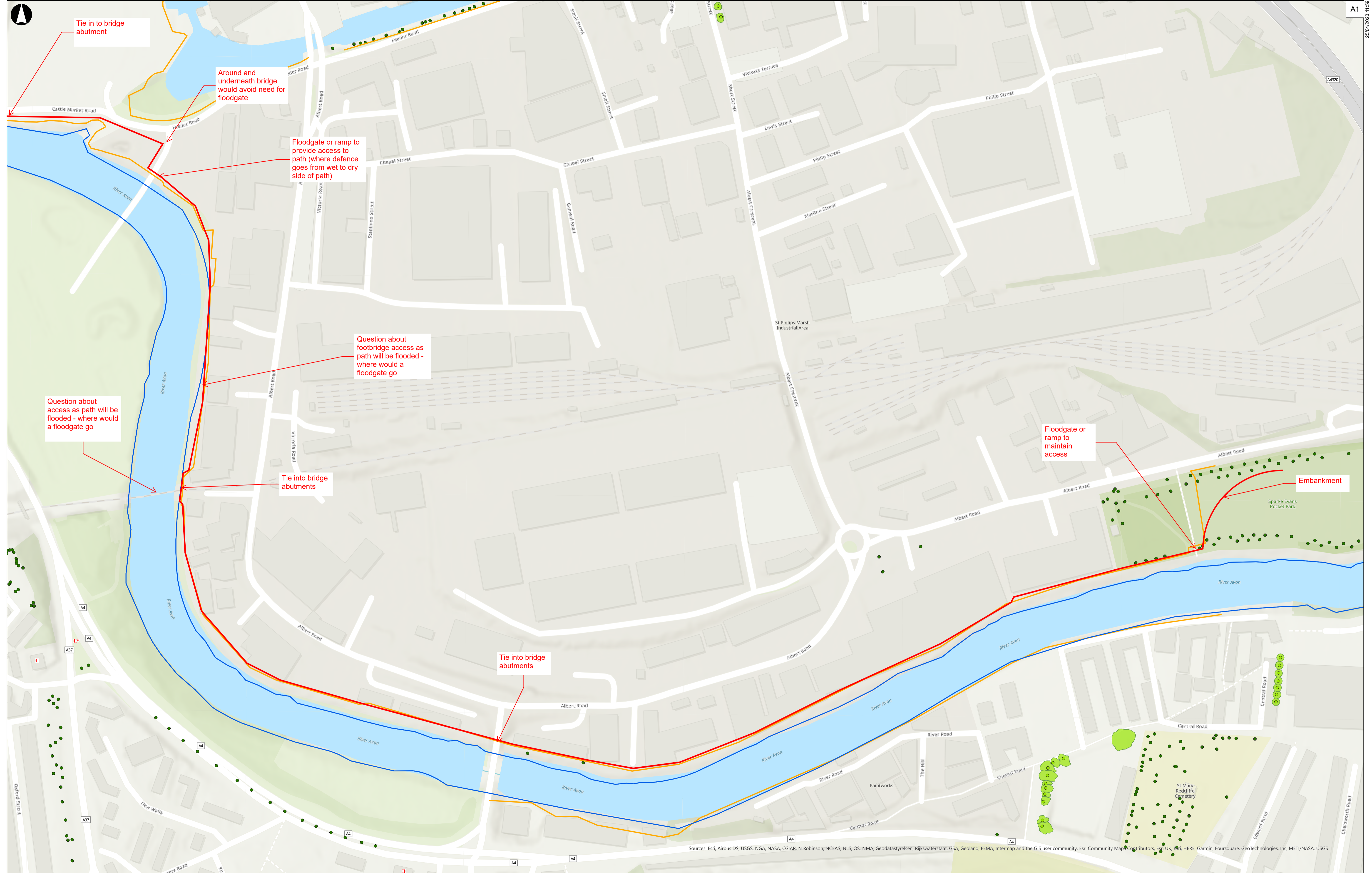
Drawing Title  
**Opportunities and constraints plan - St Philips Marsh**

Scale at A1  
**1:1,500**

Role  
**Civil**

Suitability  
**For Information**

Project Number <b>28598200</b>	Rev <b>P01</b>
Drawing Name <b>285982-ARP-XX-DR-CIV-103</b>	



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatasystyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri Community Map Contributors, Esri UK, Esri, HERE, Garmin, Foursquare, GeoTechnologies, Inc. METI/NASA, USGS

— Mean High Water Springs  
 — Main Defences  
 Listed Building Grade  
 I  
 II  
 II\*

— Scheduled Monuments  
 Tree Preservation Order (TPO)  
 ● Tree Preservation Order (TPO) Trunk  
 ■ Tree Preservation Order (TPO) Canopy  
 New Group Layer  
 ● Bristol City Council Tree Planting Locations  
 ● Bristol City Council Trees

0 30 60 120  
 Metres

Coordinate System: British National Grid

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Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - Feeder Road**

Scale at A1  
**1:1,500**

Role  
**Civil**

Suitability  
**For Information**

Project Number  
**28598200**

Drawing Name  
**285982-ARP-XX-DR-CIV-104**

Rev  
**P01**



**Netham Lock Route Options:**

**A:**  
 Pros: Floodgate away from lock gate  
 Construction not in flowing river  
 Cons: Longer alignment  
 Does not protect lock infra

**B:**  
 Pros: Shortest alignment  
 Protects lock infra  
 Pedestrian/cycle access across lock maintained  
 Cons: Construction in river (but above weir)  
 Potentially two floodgates

**C:**  
 Pros: Short alignment  
 Protects lock infra  
 Depending on bridge levels could maintain traffic access along feeder road  
 Cons: More construction near river (above weir) and bridge

**ALL:** Must have one in river/harbour flood gate  
 Must have at least one floodgate

— Mean High Water Springs  
 — Main Defences  
 Listed Building Grade  
 I  
 II  
 III\*

Scheduled Monuments  
 Tree Preservation Order (TPO)  
 Tree Preservation Order (TPO) Trunk  
 Tree Preservation Order (TPO) Canopy  
 New Group Layer  
 Bristol City Council Tree Planting Locations  
 Bristol City Council Trees

0 20 40 80 Metres

Coordinate System: British National Grid

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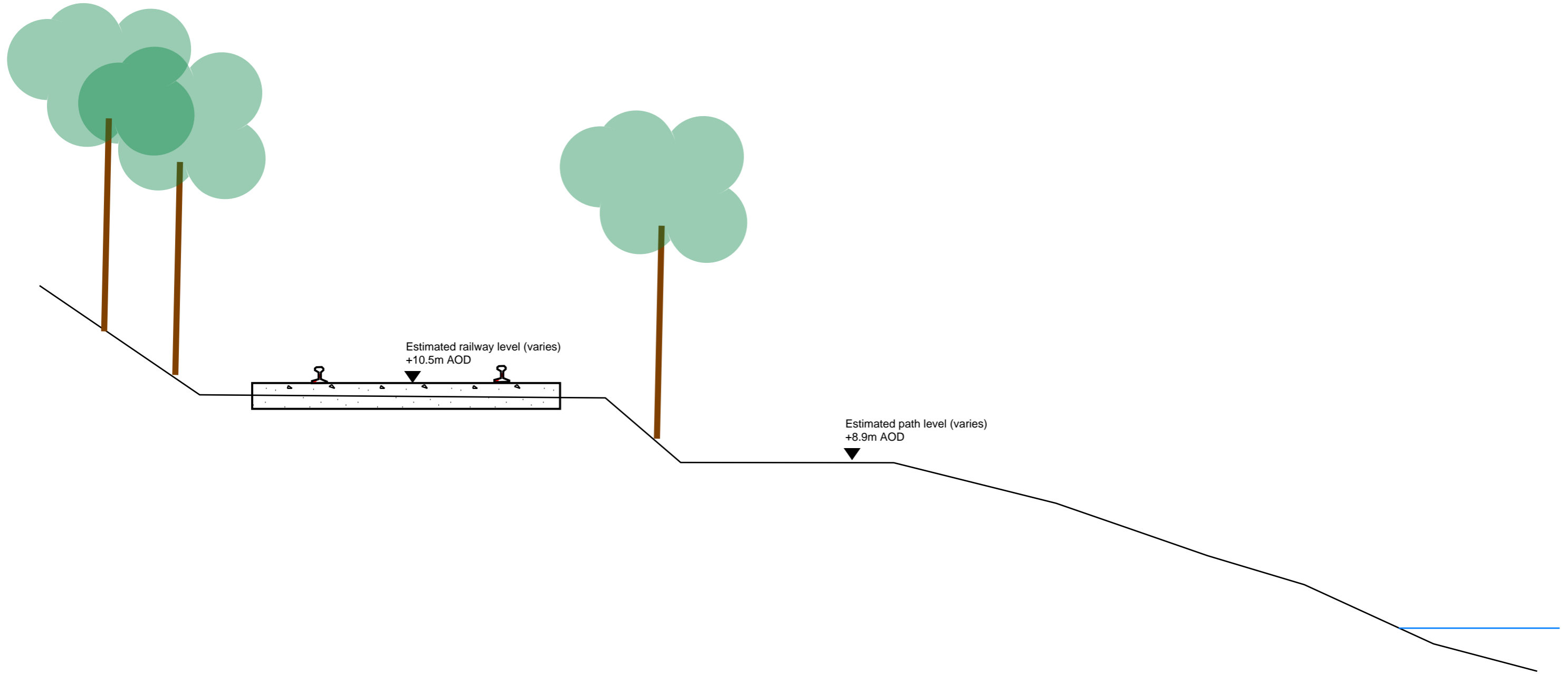
Project Name  
**Bristol Avon Flood Strategy**

Drawing Title  
**Opportunities and constraints plan - Area 6**

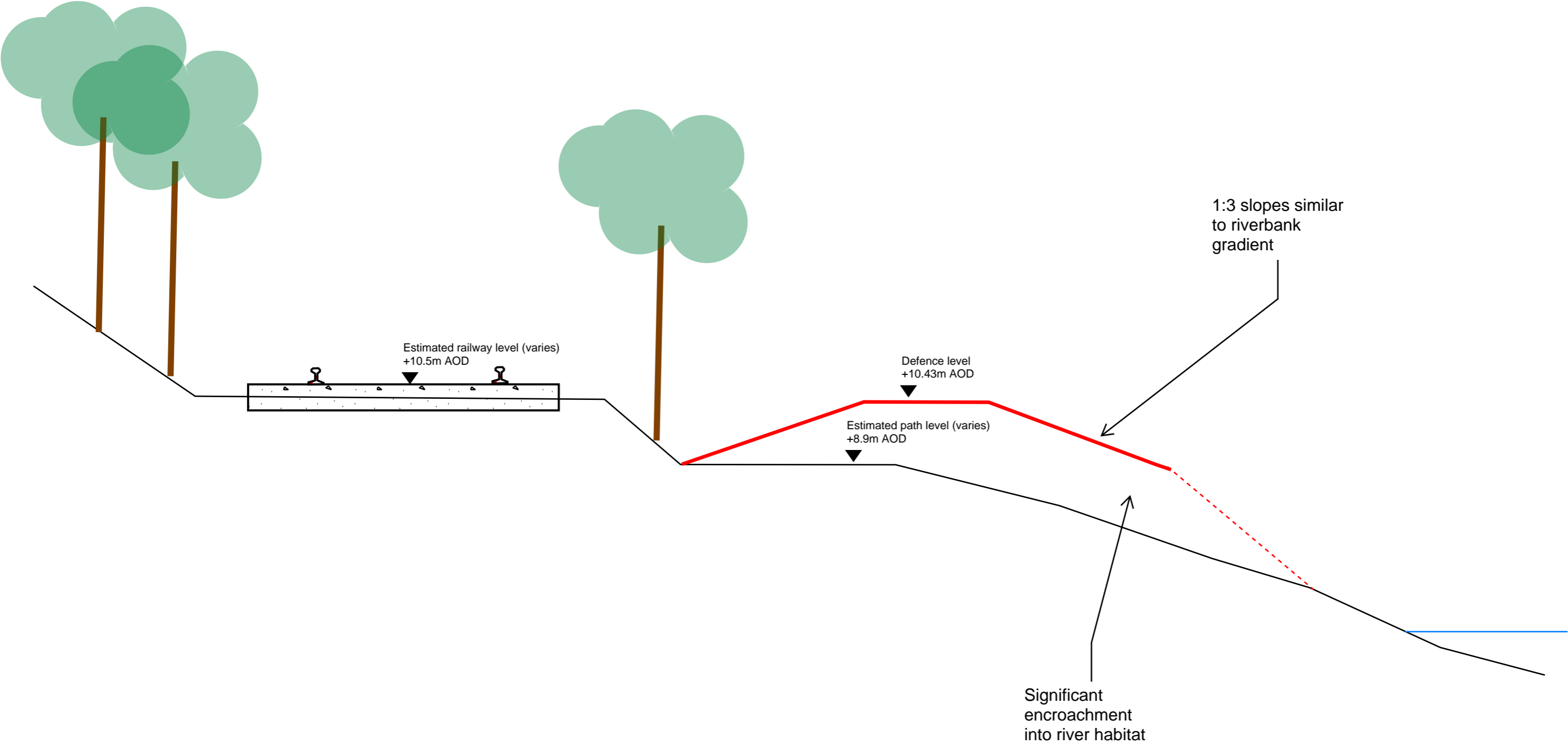
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**1:1,100**  
 Role  
**Civil**  
 Suitability  
**For Information**

Project Number <b>28598200</b>	Rev <b>P01</b>
Drawing Name <b>285982-ARP-XX-DR-CIV-105</b>	

Current State



Embankment Option



Wall Option

